

ENVIRONMENTAL IMPACT STATEMENT/ ENVIRONMENTAL IMPACT REPORT

[redacted]

FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS)/
FINAL ENVIRONMENTAL IMPACT REPORT (FEIR)
FOR THE DISPOSAL AND REUSE OF
MARINE CORP AIR STATION (MCAS) TUSTIN
TUSTIN, CALIFORNIA
IRVINE, CALIFORNIA

Lead Agency for the EIS:	Department of the Navy
Lead Agency for the EIR:	City of Tustin
Title of Proposed Action:	Disposal and Reuse of MCAS Tustin
Affected Jurisdictions:	City of Tustin, California; City of Irvine, California
Designation:	Final EIS/EIR Submitted Pursuant to 42 U.S.C. 4332(2)(C), Public Resources Code 21000 et seq., and 14 California Code Regulations 15000 et seq.
State Clearinghouse #:	94071005

ABSTRACT

Pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, Title XXIX, as implemented by the base closure process of 1991 and 1993, MCAS Tustin was closed on July 3, 1999. This joint EIS/EIR has been prepared in accordance with National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) statutes and guidelines to support disposal of MCAS Tustin and the subsequent reuse of those properties and other adjacent properties by the City of Tustin and the City of Irvine. The NEPA federal action evaluated in this EIS/EIR is the disposal of U.S. Marine Corps property. The local CEQA project evaluated is the proposed reuse of the entire reuse plan area.

The EIS/EIR evaluates three reuse alternatives: Alternative 1 - LRA Reuse Alternative; Alternative 2 - Arterial Grid Pattern/No Core/High Residential; and Alternative 3 - Arterial Loop Pattern/Reserve Area/Low Residential. Also evaluated is the No Action Alternative, in which the Marine Corps would retain ownership of MCAS Tustin, which would be under caretaker status. This EIS/EIR analyzes potential environmental impacts relating to land use; socioeconomics; utilities; public services and facilities; aesthetics; cultural and paleontological resources; biological resources; agricultural resources; soils and geology; water resources; hazardous wastes, substances, and materials; traffic/circulation; air quality; and noise. Potentially significant and not mitigable impacts are related to conversion of Farmland, elimination of two historic districts, demolition of historic blimp hangars (possibly one or both hangars), air quality emissions, and traffic/circulation.

Comments should be sent to Dana Ogdon, Senior Project Manager, City of Tustin, 300 Centennial Way, Tustin, CA 92780. Telephone: (714) 573-3116 and Fax: (714) 573-3113.

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PREFACE
MCAS TUSTIN EIS/EIR

This document is a revised Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) addressing the disposal and reuse of Marine Corps Air Station (MCAS) Tustin. The initial Draft EIS/EIR was circulated for a 60-day public review period which ended in March 1998. Comments on that document indicated the need to expand the traffic circulation study area and to provide supplementary analyses for the issues of regional growth, schools, biology, water quality, air quality, utilities, public services, noise, and hazardous materials. Given the amount of new information to be provided, the U.S. Marine Corps and the City of Tustin elected to re-circulate the entire EIS/EIR as a revised document.

In accordance with the implementing guidelines of the California Environmental Quality Act (CEQA), when an entire EIR is re-circulated, the lead agency "need not respond to those comments received during the earlier circulation period" and "may require that reviewers submit new comments" (Cal. Code Regs., Title 14, § 15088.5(f)(1)). Additionally, the lead agency shall, "in the revised EIR, or by an attachment to the revised EIR, summarize the revisions made to the previously circulated draft EIR" (Cal. Code Regs., Title 14, § 15088.5 (2)(g)). The federal National Environmental Policy Act (NEPA) has no similar guidance regarding re-circulation. Consistent with state law and implementing regulations, a summary of revisions to the initial Draft EIS/EIR is provided in Appendix D to this revised EIS/EIR. Interested parties are requested to submit new comments on this document.

This recirculated EIS/EIR has been prepared based on technical and supporting information that is publicly available. Documents available at the Tustin Public Library, 345 East Main Street, include the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and the *MCAS Tustin Specific Plan/Reuse Plan Errata* (City of Tustin 1998). Other technical studies supporting individual issue analyses are available to the public at the Tustin City Hall, 300 Centennial Way. The complete list of source materials used in the preparation of this environmental document is provided in Chapter 10.

Because this document has been prepared to satisfy federal and state environmental law, two military organizations (Navy and Marine Corps), as well as several state and local jurisdictions, it contains numerous acronyms and terms that may be unfamiliar to the reader. A complete list of acronyms is provided immediately following the Table of Contents, and a glossary/index is provided in Appendix A.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ADT	average daily traffic
AELUP	Airport Environs Land Use Plan
AFY	acre feet per year
AGL	above ground level
AICUZ	air installation compatible use zone
AOC	areas of concern
APZ	accident potential zone
AQMP	Air Quality Management Plan
ARAR	applicable relevant and appropriate requirements
AST	aboveground storage tank
ATCM	air toxic control measure
ATMS	advanced transportation management system
BCP	BRAC Cleanup Plan
BCT	BRAC Cleanup Team
BEQ	Bachelor Enlisted Quarters
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practice
BP	before present
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CAL	Confined Area Landing
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCTM	Central County Traffic Model
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMP	congestion management program
CNEL	community noise equivalent level
CO	carbon monoxide
CSD-7	Orange County Sanitation District No. 7
CSE	Countywide Siting Element
CTCA	California Trade and Commerce Agency
DAMP	Drainage Area Master Plan
dB	decibels
dB(A)	decibels on the "A"-weighted scale
DBCRA	Defense Base Closure and Realignment Act
DoD	Department of Defense
DOF	State of California Department of Finance
DON	Department of the Navy
DRMO	Defense Reutilization and Marketing Office
DTSC	Department of Toxic Substances Control
DU	dwelling units
EBS	Environmental Baseline Survey
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EMFAC	emission factors
ETC	Eastern Transportation Corridor
FAA	Federal Aviation Administration
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FPMR	Federal Property Management Regulations
FS	Feasibility Study
GCA	Ground Controlled Approach
GMP	Growth Management Plan
GPD	gallons per day
HAPs	Hazardous Air Pollutants
HDR	High Density Residential
HHS	U.S. Department of Health and Human Services

HUD	U.S. Department of Housing and Urban Development
I-405	Interstate 405
I-5	Interstate 5
IBC	Irvine Business Complex
ICU	intersection capacity utilization
IFR	instrument flight rules
IRP	Installation Restoration Program
IRWD	Irvine Ranch Water District
IUSD	Irvine Unified School District
K	Kindergarten
kV	kilovolt
kW	kilowatt
kWh	kilowatt hours
LAMBRA	Local Agency Military Base Recovery Area
LBP	lead-based paint
L_{dn}	day-night average sound level
LDR	low-density residential
LOS	level of service
LOSSAN	Los Angeles/San Diego
LRA	Local Redevelopment Authority
LTA	Lighter-Than-Air
$\mu g/m^3$	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MCL	maximum contaminant levels
mcy	million cubic yards
MDA	Miscellaneous, Disposal Area
MDR	medium-density residential
mg/L	milligrams per liter
MHDR	medium-high density residential
MOA	Memorandum of Agreement
MPAH	Master Plan of Arterial Highways
MPCB	Master Plan of Countywide Bikeways

MRF	materials recovery facility
msf	million square feet
msl	mean sea level
MTBE	methyl ter-butyl ether
MWA	miscellaneous, wash area
MWD	Metropolitan Water District
NA	not available, not applicable
NAAQS	national ambient air quality standards
NCP	National Contingency Plan
NCRS	U.S. Natural Resources Conservation Service
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	No Further Action
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NOP	Notice of Preparation
NO_x	oxides of nitrogen
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OCEMA	Orange County Environmental Management Agency
OCFA	Orange County Fire Authority
OCFCD	Orange County Flood Control District
OCP-96	Orange County Projections 1996
OCPFRD	Orange County Public Facilities and Resources Department
OCSD	Orange County Sanitation District
OCTA	Orange County Transportation Authority
OCTAM	Orange County Traffic Analysis Model
OCWD	Orange County Water District
OEA	Office Economic Adjustment
OSHA	Occupational Safety and Health Act
OUs	operable units
OWS	oil/water separators

PAH	polynuclear aromatic hydrocarbon
Pb	lead
PC	planned community
PCA	Petroleum Corrective Actions
PCAS	Pacific Coast Archeological Society
PCB	polychlorinated hiphenyl
PM_{10}	particulate matter equal to or less than 10 microns in size
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in size
ppm	parts per million
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
RECLAIM	Regional Clean Air Incentives Market
RI	Remedial Investigation
ROC	reactive organic compounds
ROD	Record of Decision
RONA	Record of Non-Applicability
RWQCB	State of California Regional Water Quality Control Board
SAMP	Special Area Management Plan
SARWQCB	Santa Ana Regional Water Quality Control Board
SAUSD	Santa Ana Unified School District
SB 50	Senate Bill 50
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison Company
SCGC	Southern California Gas Company
SCRRA	Southern California Regional Rail Authority
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMA	Special Management Areas
SO_2	sulfur dioxide
SO_x	sulfates
Sq. Ft.	square feet
SR-133	State Route 133
SR-261	State Route 261

SR-55	State Route 55
SR-73	State Route 73
SRRE	Source Reduction and Recycling Elements
ST	temporary storage area
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TCE	trichloromethane
TCP	1,2,3-trichloropropane
TDM	transportation demand management
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
TR	Trip Reduction
TSIA	Tustin/Santa Ana Improvement Agreement
TSF	thousand square foot
TUSD	Tustin Unified School District
UBC	Uniform Building Code
USACOE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
V/C	volume-to-capacity ratio
VFR	visual flight rules
VOC	volatile organic compound
WBZ	water bearing zone

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

ES-1 INTRODUCTION

Following the end of the Cold War, U.S. military requirements were fundamentally altered, allowing the nation to consider a strategic reduction in the number of military installations. In 1990, Congress enacted the Defense Base Closure and Realignment Act of 1990 (DBCRA) (10 U.S.C. § 2687 note), which was designed to provide decision-makers with an impartial process to assist in the difficult task of military base closure. To date, four rounds of base closures have been initiated (calendar years 1988, 1991, 1993, and 1995). During the course of the base closure process, the Department of the Navy (DON) has been directed to close and/or realign several of its bases. Marine Corps Air Station (MCAS) Tustin was included in the base closure actions taken in 1991, 1993, and 1995. Consequently, MCAS Tustin has been ordered closed by July 1999, and DON is in the process of carrying out the directive to dispose of the property in accordance with applicable laws and regulations. The location of MCAS Tustin is shown in Figures ES-1 and ES-2.

In July 1992, DoD, Office of Economic Adjustment (OEA) approved the City of Tustin, as the Local Redevelopment Authority (LRA) for MCAS Tustin. The LRA is responsible for preparing a Reuse Plan for submittal to DON and to the U.S. Department of Housing and Urban Development (HUD). Although the 1993 Base Realignment and Closure (BRAC) action enlarged the closure area to encompass the entire Air Station, including portions within the City of Irvine, the designated LRA remained unchanged. The City of Tustin had been working with the City of Irvine in the reuse planning process since the 1991 BRAC action. The present Reuse Plan includes the LRA's recommended use of the property to be disposed. The goal of reuse is economic redevelopment and job creation to help replace economic stimulus previously provided by the military installation. The Reuse Plan submitted to DON and HUD describes the future reuse of surplus federal properties; a federally retained Army Reserve parcel; and an approximate four-acre, privately owned parcel located adjacent to MCAS Tustin.

This joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) addresses the disposal, by DON, of federal properties within MCAS Tustin, and the subsequent reuse of those federal properties and adjacent privately owned properties. This document has been prepared jointly by DON (federal lead agency) and the City of Tustin (local lead agency) in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. § 4332 (1994)); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 C.F.R. §§1500-1508); DON

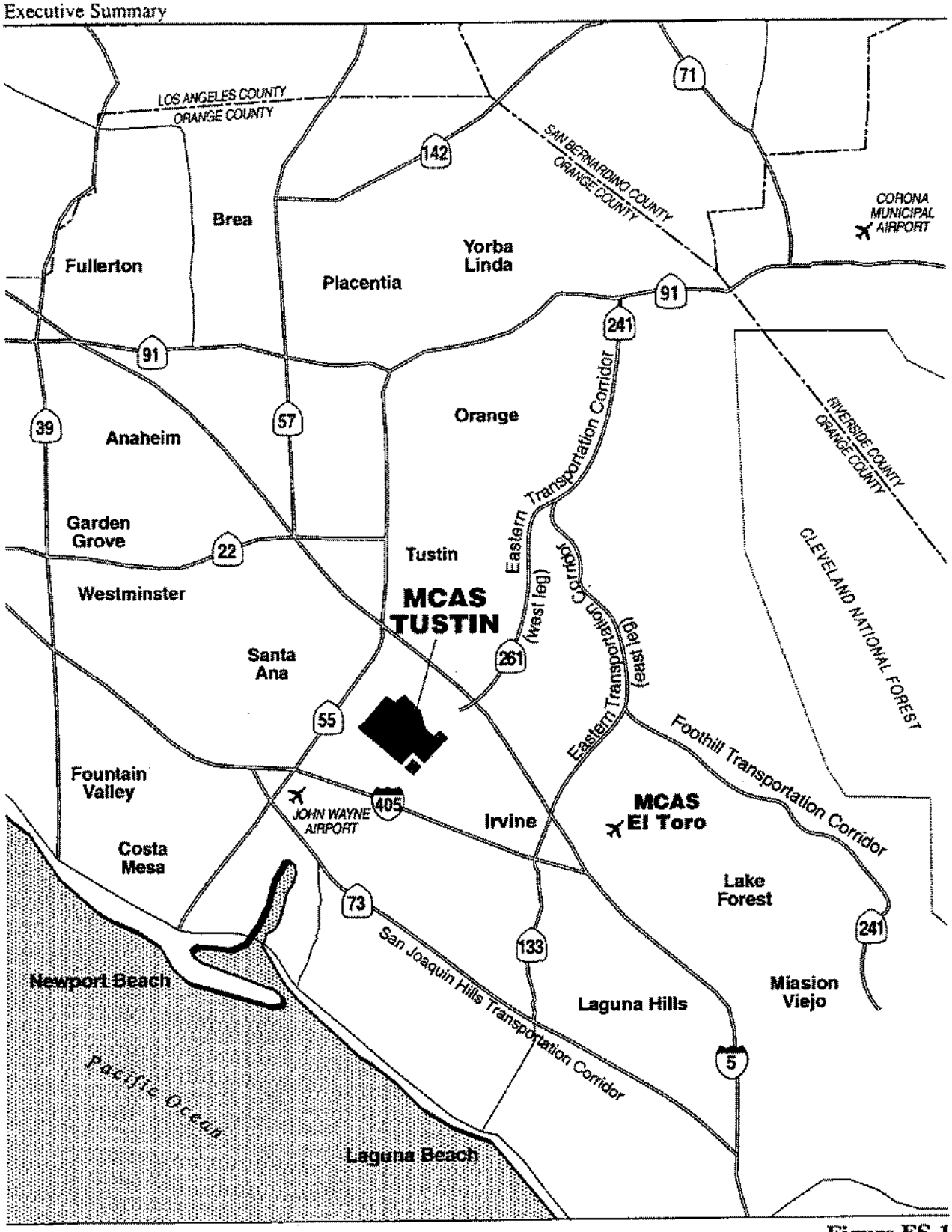
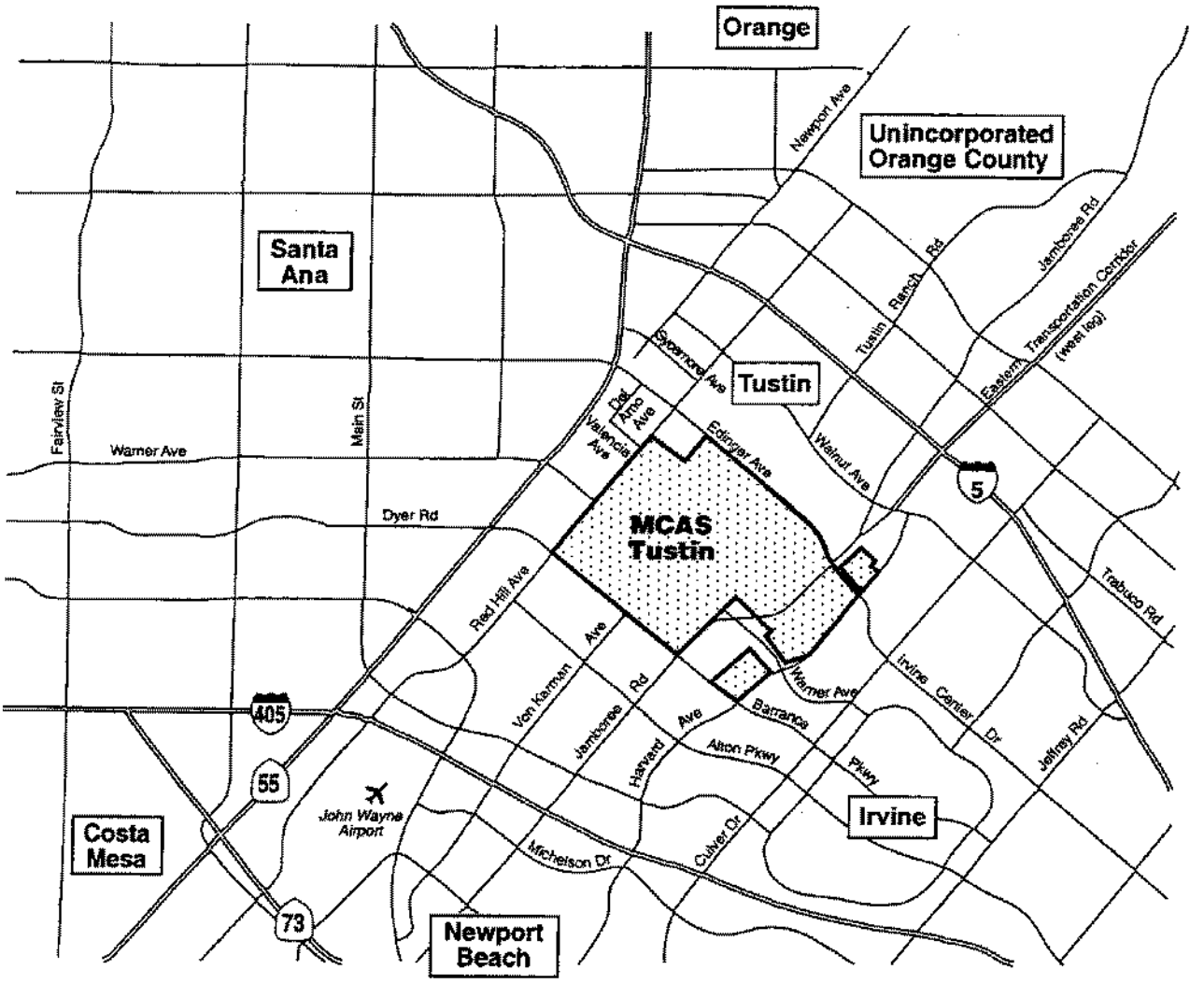


Figure ES-1
Regional Map

No Scale



NO SCALE

Figure ES-2
Vicinity Map

regulations implementing NEPA (32 C.F.R. Part 775); U.S. Marine Corps Environmental Compliance and Protection Manual (Order P5090.2); and the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, § 21000 et seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, § 15000 et seq. (1998)).

The City of Tustin is the local lead agency under CEQA, and the Tustin City Council may certify the EIS/EIR. The Tustin City Council may use the certified EIS/EIR to implement a civilian reuse plan, i.e., amend the City of Tustin General Plan, amend its zoning ordinance, and adopt a Specific Plan and other discretionary actions. The City of Irvine, whose jurisdiction encompasses a portion of MCAS Tustin, supports the City of Tustin acting as the sole local lead agency. (Appendix E contains a copy of the May 1994 letter from Irvine to Tustin formalizing this agreement.) Under CEQA statute, the City of Irvine is considered a responsible agency (Cal. Code Regs., Title 14, § 15381). As a responsible agency, the City of Irvine would implement the project in the 95-acre portion within its jurisdiction and would need to certify the EIS/EIR for any discretionary actions to implement the civilian reuse plan (Cal. Code Regs., Title 14, § 15096). Implementing the project would include amending the City of Irvine General Plan, amending the zoning ordinance, and adopting a Specific Plan, as well as other discretionary actions.

ES-2 PURPOSE OF AND NEED FOR THE ACTION

The purpose and need of the proposed *federal* action is to dispose of surplus federal property at MCAS Tustin for subsequent reuse. The purpose of and need for the *local* action is to reuse MCAS Tustin surplus property to offset the negative socioeconomic effects caused by BRAC, and to reuse these properties under an economically viable and balanced reuse plan that will provide housing and employment opportunities, solve existing community circulation and recreation parkland deficiencies, and generate sufficient revenue (property tax, sales tax or others) to support the investment in infrastructure required to improve the site for civilian purposes.

To maximize efficiency of the reuse planning process, the City of Tustin incorporated two other parcels into the MCAS Tustin Reuse Plan. An Army Reserve parcel, although not part of the disposal action, was incorporated into the Reuse Plan to provide zoning and general plan designations for this parcel should it become available for disposal in the future. A privately owned, approximately four-acre parcel, bounded by the Tustin city limits and MCAS Tustin in the vicinity of Harvard Avenue and Edinger Avenue, has also been included. Incorporating this otherwise "isolated parcel" was a logical extension of the reuse planning process. Figure ES-3 illustrates the boundaries of MCAS Tustin and the slightly larger area that is the reuse plan area.

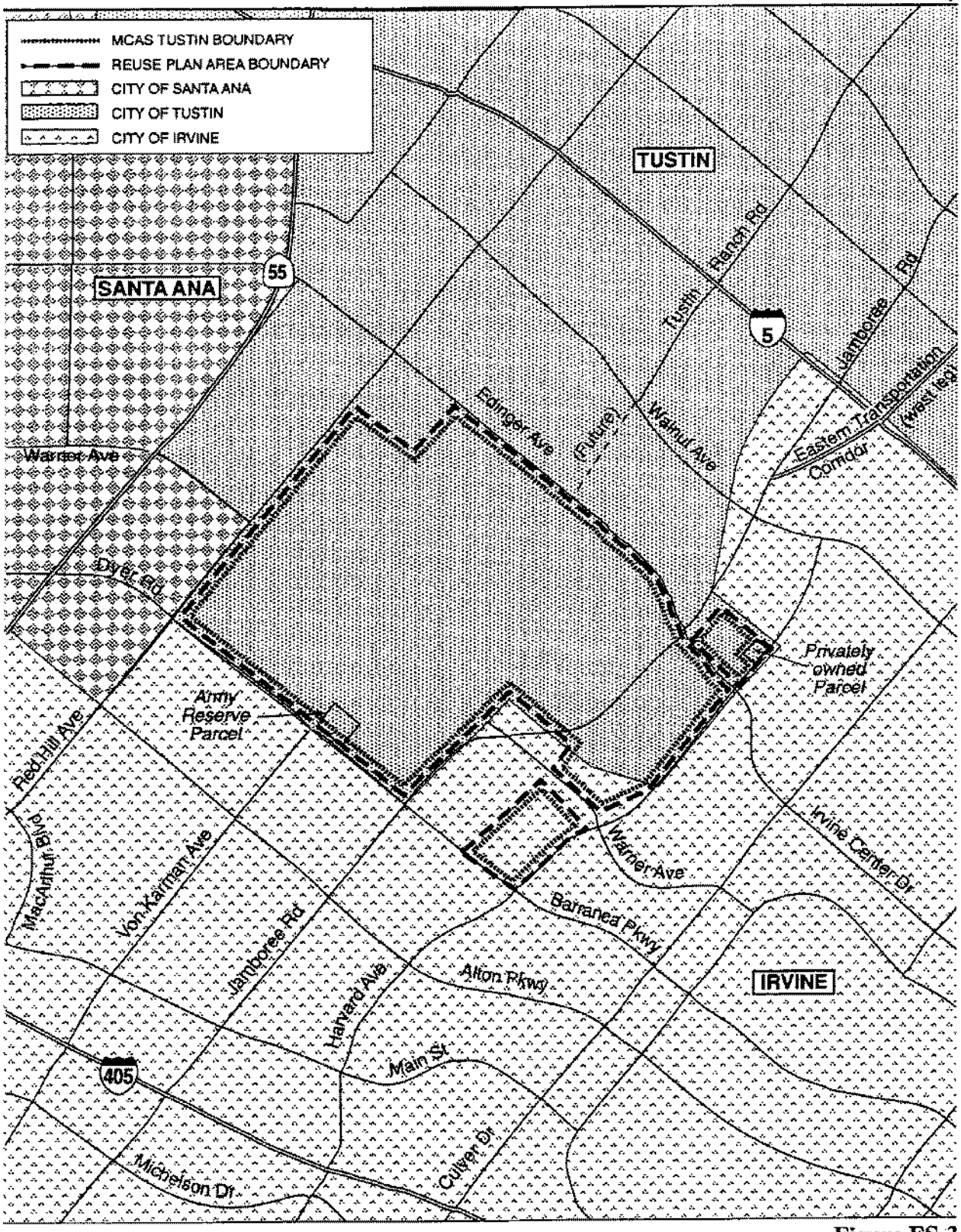


Figure ES-3
Reuse Plan Area

No Scale

For purposes of this EIS/EIR, the reuse plan area is defined as the entire Marine Corps property (surplus land and Army Reserve parcel) plus the privately owned, adjacent parcel. The acreage of the reuse plan is shown in Table ES-1. The reuse planning process and the Reuse Plan itself are detailed in a document prepared by the City of Tustin entitled *MCAS Tustin Specific Plan/Reuse Plan* (1996b) plus *MCAS Tustin Specific Plan/Reuse Plan Errata (Errata)* (1998).

Table ES-1
Reuse Plan Area Approximate Acreage by Jurisdiction

Property	City of Tustin	City of Irvine
MCAS Tustin Surplus Property	1,490	95
Army Reserve Parcel	17	n/a
Privately-owned Parcel	4	n/a
Total by Jurisdiction	1,511	95
Grand Total	1,606	

Note: All acreage figures are estimates only. Figures in the text and table are rounded for discussion purposes. More detailed numbers (tenths of an acre) are provided in the *MCAS Tustin Specific Plan/Reuse Plan* (1996b) and *Errata* (1998).

ES-3 USE OF AN INTEGRATED DOCUMENT

The purpose of this integrated EIS/EIR is to assess the potential significant environmental impacts of disposal of the federal property, MCAS Tustin, and the subsequent reuse of that federal property and a small parcel of adjacent, privately owned property. Decisions regarding which bases to close, relocate, or realign are exempt from NEPA documentation requirements under the DBCRA (10 U.S.C. § 2687 note (1994)). However, once the decision has been made to close, relocate, or realign a specified base, DON is required to prepare appropriate NEPA documentation evaluating the environmental effects of the disposal and subsequent reuse of the property. The City of Tustin, as the local lead agency, is required under CEQA to evaluate the environmental effects of implementing reuse plans. In this case, the City of Tustin could also take action on adoption of ~~an implementing~~ a series of actions to implement the proposed LRA Reuse Alternative, including a specific plan which is subject to CEQA only. Section 1.5.1 addresses the agency uses of the joint NEPA/CEQA analysis of the reuse plan and Section 1.5.2 discusses the agency uses of the CEQA only analysis of the ~~Specific Plan~~ implementing actions.

DON will use this EIS/EIR in its consideration of disposal options of Marine Corps property at MCAS Tustin. As addressed under CEQ Regulations (40 C.F.R. § 1502.14 (e)), an environmentally preferred alternative is identified in Chapter 2. For purposes of the NEPA analysis, direct environmental consequences or impacts are those associated with DON's disposal action and the No Action Alternative; indirect environmental impacts are associated with the City of Tustin's reuse of federal property; and cumulative environmental impacts are associated with the City of Tustin's use of federal and private property in the reuse plan area, as well as with other projects in the area. Chapter 7 of this document examines the impacts attributable to implementation of the Specific Plan.

DON will consider all environmental impacts identified in Chapters 4 and 5 and Sections 6.1, 6.2, 6.3, 6.6, and 6.7 of this EIS/EIR in its decision process before issuing a Record of Decision (ROD). Following disposal, no additional NEPA review by DON will be required.

The City of Tustin, acting as the lead agency, will use this EIS/EIR in its consideration of reuse alternatives for the reuse plan area. The City of Tustin and City of Irvine may certify this EIS/EIR and use the document to select and implement a civilian reuse within each of their respective jurisdictions. As required under CEQA, (Cal. Code Regs. Title 14, § 15126.6 (e)(2), 1999) an environmentally superior alternative is identified in Chapter 2. For purposes of the CEQA analysis, direct and indirect environmental impacts are those associated with the reuse alternatives and the No Action Alternative, and cumulative environmental impacts are those associated with other past, current, and probable future projects in the area. Should implementation of an alternative include significant unavoidable environmental impacts, the implementing agency will be required to adopt a statement of overriding considerations (Cal. Code Regs., Title 14 § 15093). A mitigation monitoring and reporting program will be required for reporting or monitoring mitigation measures that are adopted and become conditions of project approval.

Implementation of the LRA Reuse Alternative would be accomplished through the adoption of the proposed Specific Plan and other discretionary actions. The CEQA analysis of potential direct and indirect impacts associated with the Specific Plan are contained in Chapter 7 within this EIS/EIR.

This EIS/EIR is intended to provide decisionmakers, responsible agencies, and the public with enough information on the potential range of environmental impacts to make decisions on the alternatives analyzed in the document.

ES-4 RELATED STUDIES

Several other project-related studies have been or are being undertaken in conjunction with ongoing activities at MCAS Tustin. The major planning and restoration programs are summarized below, including a conditions assessment for the blimp hangars, an Environmental Baseline Survey (EBS), an Installation Restoration Program (IRP), and a BRAC Cleanup Plan (BCP).

ES-5 PUBLIC INVOLVEMENT PROCESS

The EIS/EIR process is designed to involve the public in federal and local decision-making. Opportunities to comment on, and participate in, the process were provided during preparation of the initial Draft EIS/EIR in 1998. Comments from agencies and the public were solicited to help identify the primary issues associated with the federal disposal and proposed reuse of MCAS Tustin. The City of Tustin conducted public meetings and workshops as part of the reuse planning process. The public was encouraged to comment on the various reuse alternatives and to identify the most favorable elements. The public's input, as well as feedback from applicable resource and permitting agencies, will be used to evaluate the alternatives and environmental impacts prior to final decisions.

Scoping Process

The purpose of scoping is to identify potential environmental issues and concerns regarding the disposal and subsequent reuse in the reuse plan area. The scoping process for this EIS/EIR included public notification via the *Federal Register*, newspaper ads, direct mail, and a public meeting. The Marine Corps and the City of Tustin considered comments received during the scoping process in determining the range of issues to be evaluated in the EIS/EIR.

In accordance with NEPA requirements, a Notice of Intent (NOI) to prepare a joint EIS/EIR was published in the *Federal Register* on July 5, 1994. In accordance with requirements under CEQA, a Notice of Preparation (NOP) to prepare a joint EIS/EIR was distributed on June 30, 1994 to regulatory agencies, local jurisdictions, elected officials, and public service providers, among others. Twenty six written comments were received in response to the 1994 NOI/NOP. These written comments addressed traffic circulation, possible alternative transportation modes, roadway improvements, and transportation management programs; regional trails; water drainage and water quality; availability and cost of utilities; land use compatibility; transport and cleanup of hazardous wastes and materials; impacts and financing of schools and libraries; affordable and transitional

housing; air quality; traffic noise; liquefaction; and retention of the blimp hangars. A more detailed summary of the written scoping comments is included in Chapter 8 and Appendix C.

On March 9, 1995 a supplement to the NOP was sent to all previously notified parties to inform them of the City of Tustin's intent to also utilize the joint EIS/EIR for its application to pursue a Local Agency Military Base Recovery Area (LAMBRA) designation with the California Trade and Commerce Agency. A LAMBRA designation, similar to an Enterprise Zone, allows communities to extend California tax credits to companies locating at a closing military base. A copy of the NOI, NOP, and supplemental NOP is included in Appendix C of this document. No written comments were received on the 1995 supplemental NOP.

As part of this EIS/EIR scoping process, the Marine Corps and City of Tustin held a public meeting designed to inform the public about disposal and reuse alternatives and to solicit the public's participation and comments. The scoping meeting was held on July 20, 1994 at the Clifton Miller Community Center in the Tustin Civic Center. No one in attendance offered oral or written comments related to environmental issues or alternatives. All issues raised during scoping regarding environmental topics have been addressed in this EIS/EIR.

The Marine Corps also held a public meeting in April 1997 regarding the blimp hangars pursuant to Section 106 of the National Historic Preservation Act (NHPA). That meeting was held onsite at a blimp hangar and was attended by approximately 120 persons. The purpose of the meeting was to describe the Section 106 process and the role of the State Historic Preservation Officer (SHPO) as it relates to the proposed reuse plan and to receive comments for consideration during consultation with SHPO and the Advisory Council on Historic Preservation.

Public Review

The initial Draft EIS/EIR was made available for public review on January 16, 1998. Affected agencies, organizations, and persons who may bave had an interest in the disposal of MCAS Tustin and the Reuse Plan were provided with copies of the document for review and comment. The Notice of Availability (NOA) for the initial Draft EIS/EIR was published in the *Irvine World News*, *Orange County Register*, and *Tustin News* on January 9, 1998 and in the *Federal Register* on January 16, 1998. A 45-day public review period was provided for review of the draft document, which was extended to 60 days.

Comments received on the Draft EIS/EIR indicated the need to expand the traffic circulation study and to provide supplementary analysis for the issues of regional growth, schools, noise, biology,

water quality, air quality, utilities, public services, and hazardous materials. This revised Draft EIS/EIR incorporates supplemental and new analysis. A 45-day public review period was is provided for the review of the revised Draft is document. ~~Agencies and the interested public are invited to comment on the environmental analysis provided.~~

Consistent with CEQA implementing guidelines (Cal. Code Regs., Title 14, § 15088.5), this document does not include responses to comments on the initial Draft EIS/EIR. Instead, a summary of revisions to the initial Draft EIS/EIR as they relate to this revised Draft EIS/EIR is provided in Appendix D. NEPA does not have any guidelines regarding re-circulation. Interested parties are were requested to submit new comments on this revised EIS/EIR. Response to all public review comments are included in Volume 2 of this Final EIS/EIR. Pursuant to NEPA, an additional 30-day period is provided for review of this Final EIS/EIR. Comments should be sent to the following address:

Dana Ogdon, Senior Project Manager
City of Tustin
300 Centennial Way
Tustin, CA 92680
Fax: (714) 573-3113

ES-6 NAVY DISPOSAL ACTIONS

DON can either retain MCAS Tustin surplus property in federal ownership (No Action Alternative) or dispose of the property for subsequent reuse (Disposal Alternative).

No Action Alternative

Under the No Action Alternative, the Marine Corps would retain ownership of approximately 1,585 acres of surplus federal property. Except for the existing agricultural and building leases, all buildings would remain vacant and all other facilities would remain in place but would be unused. The Marine Corps property would remain under caretaker status as described in Chapter 1. The area would be fenced off, the unleased buildings would be boarded up, and a military security and maintenance staff of approximately ten persons would be present. The grounds, infrastructure, and buildings would be maintained and repaired as necessary to prevent deterioration. Site environmental cleanup would continue and be completed. No new construction would occur under this alternative except as allowed by existing lease authorization.

Approximately 17 acres of property would be transferred to the Army Reserve.

This EIS/EIR evaluates in detail the environmental consequences of the No Action Alternative.

Disposal of Navy Property Alternative

DON disposal is the federal action evaluated to determine potential environmental impacts associated with disposal of Marine Corps property from federal ownership. Under this proposed action, approximately 1,585 acres of surplus real property would be disposed.

ES-7 CITY OF TUSTIN REUSE ALTERNATIVES

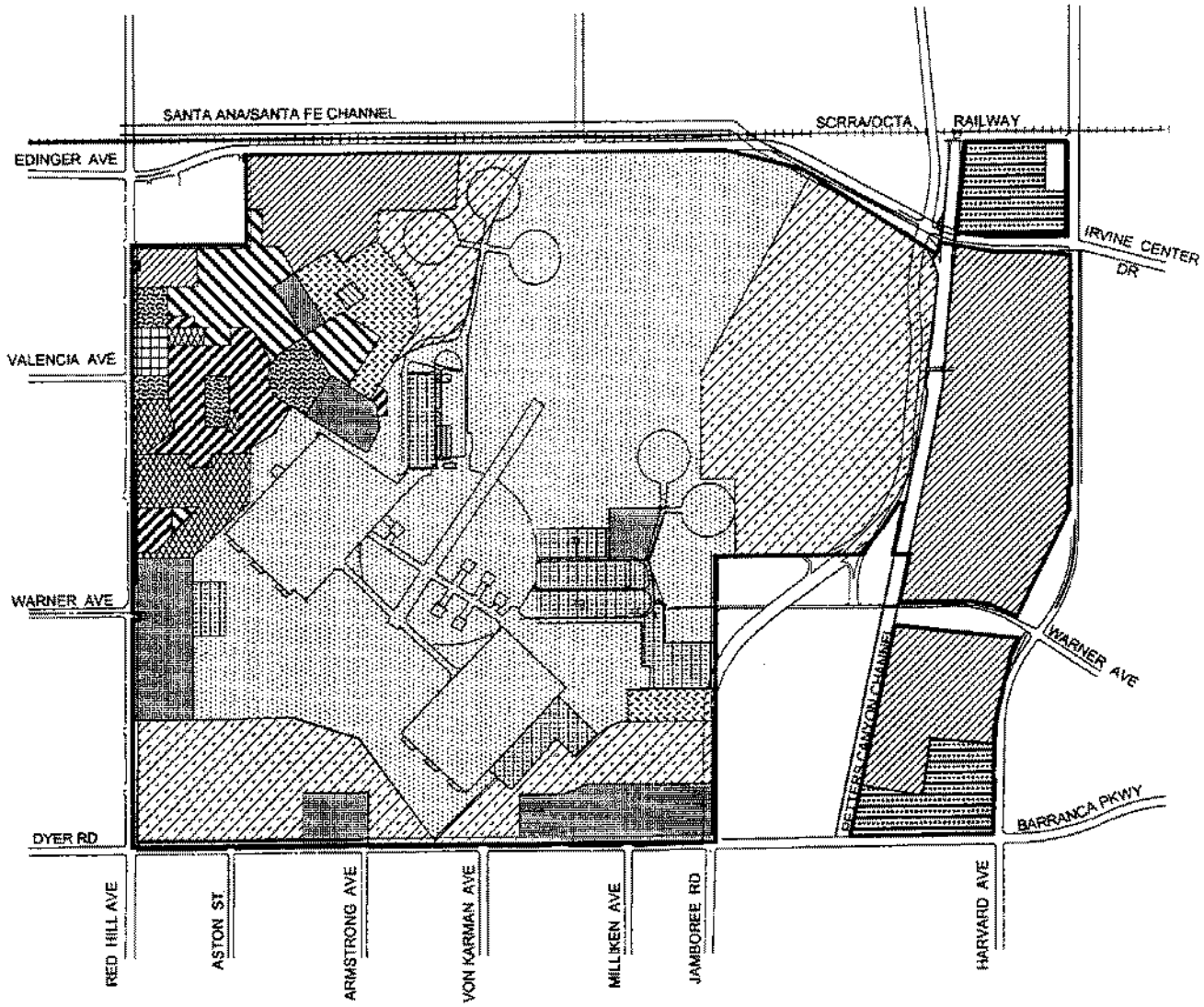
In addition to the No Action and Navy Disposal Alternatives discussed above, this EIS/EIR evaluates three reuse alternatives in detail:

- Alternative 1 - LRA Reuse Plan;
- Alternative 2 - Arterial Grid Pattern/No Core/High Residential; and
- Alternative 3 - Arterial Loop Pattern/Reserve Area/Low Residential

Figure ES-4 provides a graphic representation of the baseline facilities at MCAS Tustin. The proposed configurations of the three reuse alternatives are provided in Figures ES-5, ES-6 and ES-7, respectively.

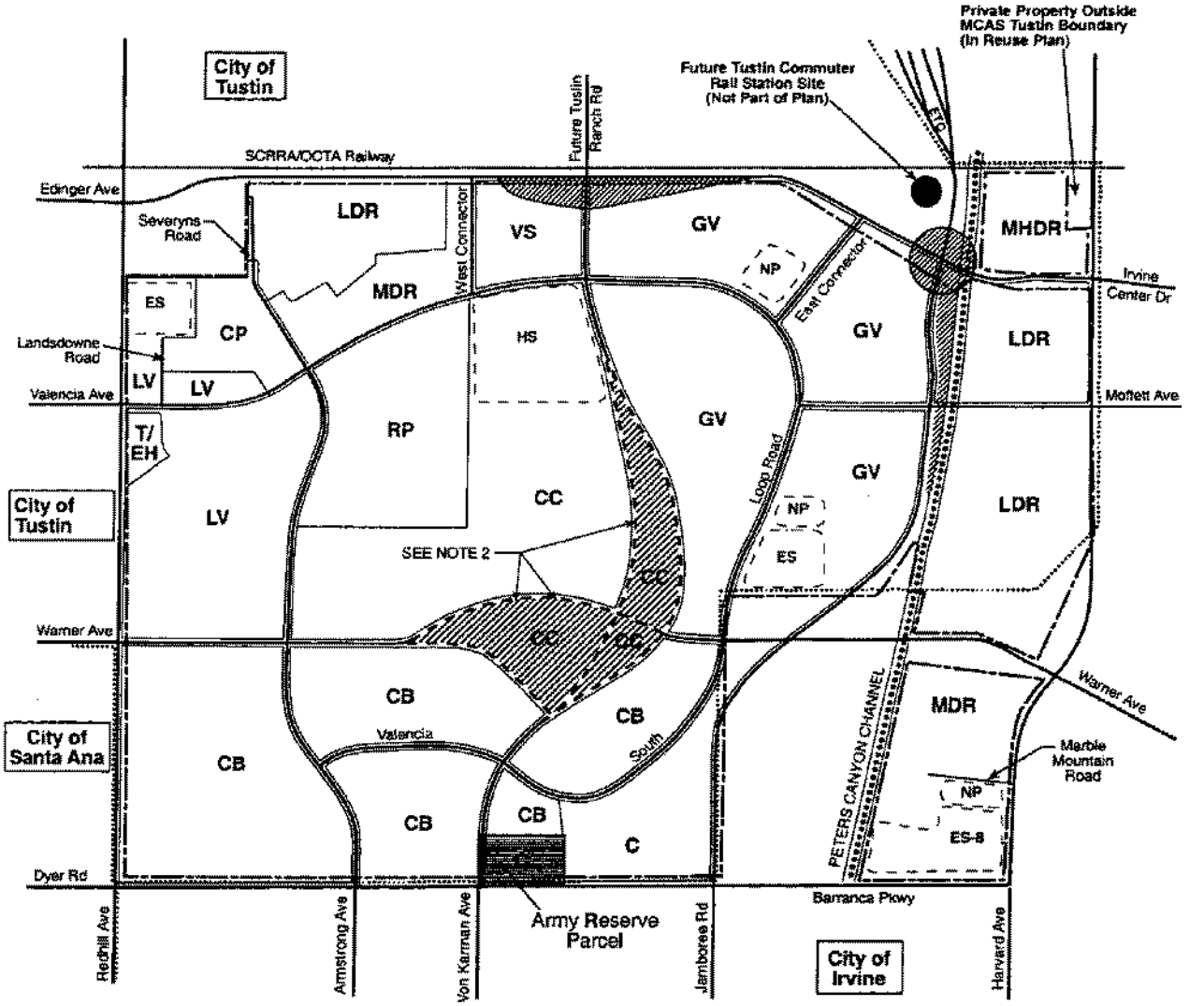
This section presents a brief description of the three reuse alternatives: Alternative 1 - which is the LRA Reuse Plan; Alternative 2 - which is a reuse plan based on an arterial grid pattern and a high residential component, and; Alternative 3 - which is a reuse plan based on an arterial loop pattern and a low residential component. Each alternative is described and subsequently analyzed within this EIS/EIR under the maximum achievable level of development.

Each alternative is a broad conceptual plan for developing the large, 1,606-acre reuse plan area in a variety of residential, commercial, and public uses over a 20-plus year period. As such, each has general land use planning designations (residential, commercial, recreation, institutional, etc.) that allow for a range of different types of land use and intensity of development. For example, residential uses for the three alternatives range from 4,340 to 6,205 housing units, with a variety of housing types and densities.



Source: MCAS Tustin Masterplan, Figure 5-4, June 1989; Aerial Photograph 1994.
Base map: HNTB 1999
Note: The cultivated fields do not coincide directly with the land uses shown in the Masterplan.

Figure ES-4
Existing Facilities



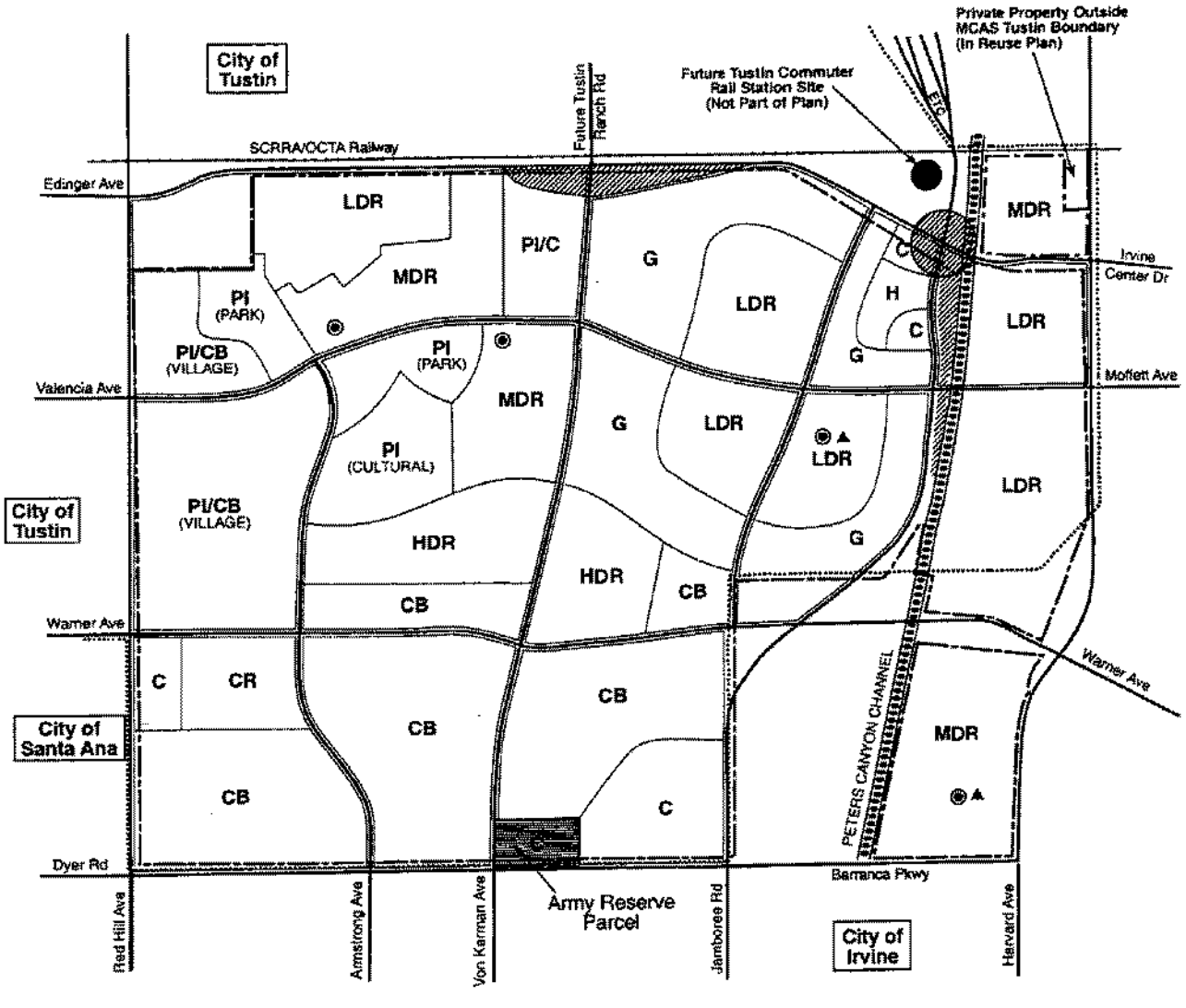
LDR	LOW DENSITY RESIDENTIAL (1-7 DU/ACRE)
MDR	MEDIUM DENSITY RESIDENTIAL (8-15 DU/ACRE)*
MHDR	MEDIUM HIGH DENSITY RESIDENTIAL (16-25 DU/ACRE)
T/EH	TRANSITIONAL/EMERGENCY HOUSING
GV	GOLF VILLAGE
C	COMMERCIAL
CB	COMMERCIAL BUSINESS
VS	VILLAGE SERVICES
CC	COMMUNITY CARE
LV	LEARNING VILLAGE
CP	COMMUNITY PARK
RP	URBAN REGIONAL PARK
NP	NEIGHBORHOOD PARK
ES	ELEMENTARY SCHOOL (K-6)
ES-8	ELEMENTARY SCHOOL (K-8)
HS	HIGH SCHOOL
.....	REGIONAL RIDING AND HIKING TRAIL
— · —	MCAS TUSTIN BOUNDARY
·····	IRVINE/TUSTIN/SANTA ANA BOUNDARY
	MILITARY (FEDERAL PROPERTY)
	ADDITIONAL ROAD RIGHT-OF-WAY

Notes:

1. Roadway alignments are conceptual.
2. Shaded areas represent conceptual alternative roadway alignment areas and in interchange locations.
3. DU= Dwelling Units
4. Roads shown indicate road right-of-way.
5. Within the City of Irvine, the density within the Medium Density Residential designation will not exceed 12.5 dwelling units per acre.



Figure ES-5
Alternative 1
LRA Reuse Alternative

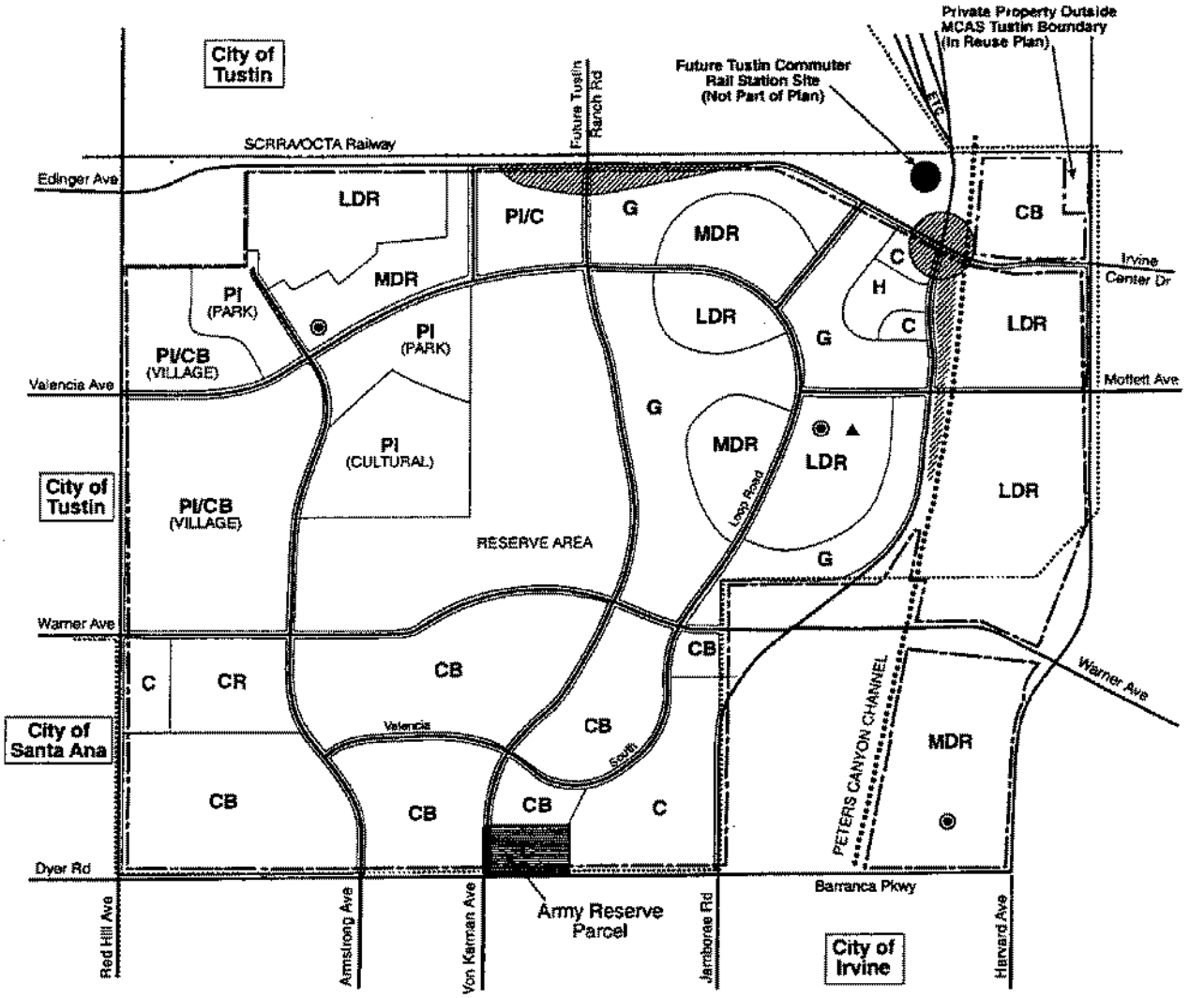


LDR	LOW DENSITY RESIDENTIAL (1-7 DU/ACRE)
MDR	MEDIUM DENSITY RESIDENTIAL (8-15 DU/ACRE)
HDR	HIGH DENSITY RESIDENTIAL (16-25 DU/ACRE)
C	COMMERCIAL
CB	COMMERCIAL BUSINESS
CR	COMMERCIAL RECREATION
PI/CB	VILLAGE MIXED USE/PUBLIC INSTITUTIONAL COMMERCIAL BUSINESS RESIDENTIAL MIXED USE
PI/C	PUBLIC INSTITUTIONAL/COMMERCIAL
$PI_{(PARK)}$	COMMUNITY PARK
$PI_{(CULTURAL)}$	CULTURAL CENTER
G	GOLF
H	HOTEL
◉	FUTURE SCHOOL SITE
▲	FUTURE NEIGHBORHOOD PARK SITE
•••••••••	REGIONAL RIDING AND HIKING TRAIL
—— ——	MCAS TUSTIN BOUNDARY
——·——	IRVINE/TUSTIN/SANTA ANA BOUNDARY
	MILITARY (FEDERAL PROPERTY)
	ADDITIONAL ROAD RIGHT-OF-WAY

Notes:
1. Roadway alignments are conceptual.
2. Shaded areas represent conceptual alternative roadway alignment area and interchange locations.
3. DU= Dwelling Units
4. Roads shown indicate road right-of-way.
5. The future school and neighborgood park sites are identified by general location only.
6. Within the City of Irvine, the density within the Medium Density Residential designation would not exceed 12.5 dwelling units per acre.
7. Previously identified as Alternative 1 in Draft EIS/EIR released in January 1998.



Figure ES-6
Alternative 2
Arterial Grid Pattern/No Core/High Residential



LDR	LOW DENSITY RESIDENTIAL (1-7 DU/ACRE)
MDR	MEDIUM DENSITY RESIDENTIAL (8-15 DU/ACRE)
C	COMMERCIAL
CB	COMMERCIAL BUSINESS
CR	COMMERCIAL RECREATION
PI/CB	VILLAGE MIXED USE/PUBLIC INSTITUTIONAL COMMERCIAL BUSINESS RESIDENTIAL MIXED USE
PI/C	PUBLIC INSTITUTIONAL/COMMERCIAL
PI(PARK)	COMMUNITY PARK
PI(CULTURAL)	CULTURAL CENTER
G	GOLF
H	HOTEL
◉	FUTURE SCHOOL SITE
▲	FUTURE NEIGHBORHOOD PARK SITE

**********	REGIONAL RIDING AND HIKING TRAIL
—·—	MCAS TUSTIN BOUNDARY
·····	IRVINE/TUSTIN/SANTA ANA BOUNDARY
	MILITARY (FEDERAL PROPERTY)
	ADDITIONAL ROAD RIGHT-OF-WAY

Notes:
1. Roadway alignments are conceptual.
2. Shaded areas represent conceptual alternative roadway alignment areas and interchange locations.
3. DU= Dwelling Units
4. Roads shown indicate road right-of-way.
5. The future school and neighborhood park sites are identified by general location only.
6. Within the City of Irvine, the density within the Medium Density Residential designation will not exceed 12.5 dwelling units per acre.
7. Previously identified as Alternative 2 in Draft EIS/EIR released in January1998.

0 2000 Feet

Figure ES-7
Alternative 3
Arterial Loop Pattern/Reserve Area/Low Residential

Given the number of components being considered under each alternative, Table ES-2 has been developed to provide a summary comparison of land use development and buildout characteristics of the three alternatives. This table is intended to help the reader identify key characteristics of each of the three alternatives.

Alternative 1 - LRA Rense Plan

Alternative 1 (Figure ES-5) is the alternative submitted by the LRA to DON and HUD and the one that the City of Tustin believes would best meet the community objectives of the reuse planning process. This alternative proposes a variety of housing, employment, recreation, educational, and community support uses designed to complement the existing urban character of the surrounding area and strengthen the economic base of Tustin and nearby cities. This alternative would result in 4,601 dwelling units; Transitional/Emergency Housing for the homeless; an Urban Regional Park developed around the northern blimp hangar; a large Community Core developed with mixed uses; and specialized educational, social service, and law enforcement facilities within a Learning Village campus. This alternative would also include a Golf Village with hotel and ancillary retail uses.

This alternative would permit reuse of some of the existing military structures and facilities, including recreational facilities such as baseball, softball, volleyball, football, and soccer fields plus basketball and tennis courts. In addition, the two blimp bangars, which contain 660,416 square feet of floor area, would be adaptively used if financially feasible. The northern blimp hangar could support regional recreational activities in the form of special events center, sports center, museum, and historical aircraft restorations. The southern hangar could be reused for film production, warehouse facilities, or light industrial uses permitted by the plan. Including the hangars, approximately 1.8 million square feet of structures, plus 1,537 housing units, could be reused under this alternative.

Alternative 2 - Arterial Grid Pattern/No Core/High Residential

This alternative proposes a variety of urban uses with a focus on enhancing housing and cultural opportunities for the residents of Tustin, Irvine, and nearby communities. The development of this alternative would result in the implementation of 6,205 dwelling units, commercial and business uses, Village Mixed-Uses, and Public Institutional/Commercial functions (Figure ES-6).

A large Cultural Center would be developed under this alternative, and the northern blimp hangar would be incorporated, if financially feasible. This alternative would also include a golf course.

Table ES-2
Summary Comparison of Land Development and Buildout Characteristics of Alternatives

Characteristic	Alternative 1	Alternative 2	Alternative 3
Residential (number of dwelling units)			
Low Density Residential (1-7 DU/Acre)	1,421[1]	1,729	1,460
Medium Density Residential (8-15 DU/Acre)	1,701[1]	2,132	1,865 [2]
Medium High Density Residential (16-25 DU/Acre)	1,479[3]	0	0
High Density Residential (16-25 DU/Acre)	0	2,344[4]	1,015 [4]
Total Dwelling Units	**4,601**	**6,205**	**4,340**
Commercial/Institutional/Recreational (square footage)			
Transitional/Emergency Housing	133,294	0	0
Commercial/Business	4,305,251	5,623,867	5,142,528
Commercial	713,412	1,258,884	1,219,593
Commercial/Recreation	0	437,560	437,560
Village Services	315,592	0	0
Village Mixed-Use	0	929,420	712,467
Community Core (future phase mixed urban uses)	3,630,726	0	0
Reserve Area (future phase mixed urban uses)	0	0	1,702,464
Golf Village (includes hotel)	280,526	0	0
Hotel	0	339,768	283,140
Learning Village	1,412,651	0	0
Institutional/Commercial	0	351,268	467,037
Cultural Center	0	570,636	557,568
Community Park	40,531	312,543	394,218
Urban Regional Park	574,992	0	0
Total Square Feet of Building Floor Area	**11,406,975**	**9,214,583**	**10,916,575**
Area (acreage)[5] and Percentage of Development			
Residential	445 (28%)	558 (35%)	368 (23%)
Commercial/Business	738 (46%)	739 (46%)	915 (57%)
Institutional/Recreational	238 (15%)	131 (8%)	139 (8%)
Roadways/Drainage	186 (12%)	178 (11%)	184 (11%)
Total Acreage	**1,606**	**1,606**	**1,606**
Approximate On-site Population	12,514	16,408	11,986
Approximate Employment[6]	77,401	67,723	66,454
Approximate Average Daily Vehicle Trips	215,093	268,130	294,887

[1] Includes dwelling units in Golf Village.
[2] Includes dwelling units in Reserve Area.
[3] Includes dwelling units in Community Core, residential density consistent with Irvine General Plan Category.
[4] Includes dwelling units in Village Mixed-Use, residential density consistent with Tustin General Plan Category.
[5] Rounded to the nearest acre.
[6] Includes direct, indirect/induced, and construction.

Note: All acreage figures are estimates only. Figures in the text and the tables are included for discussion purposes. More detailed numbers (tenth of an acre) are provided in the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)

This alternative would permit reuse of some existing military structures and facilities. The northern blimp hangar could be reused to support regional cultural activities in the form of a special events center, museum, or other permitted uses. The southern blimp hangar would be demolished under this alternative.

Alternative 3 - Arterial Loop Pattern/Reserve Area/Low Residential

Alternative 3 proposes a variety of urban uses with a focus on enhancing employment and cultural opportunities for the residents of Tustin, Irvine, and nearby communities. The development of this alternative would result in 4,340 dwelling units and a high degree of commercial development (Figure ES-7). A large Cultural Center on 87 acres would be developed under this alternative and would incorporate the northern blimp hangar, if financially feasible. This alternative also would include a 179-acre mixed-use Reserve Area, and a large golf course (187 acres). The Reserve Area would include residential, commercial/business, and institutional uses in large-scale development.

This alternative could include reuse of some existing military structures and facilities. The northern blimp hangar could be adaptively reused for activities related to the cultural center. The southern blimp hangar would be demolished.

ES-8 AFFECTED ENVIRONMENT

This EIS/EIR provides a description of the existing environmental conditions in the reuse plan area. This document describes existing conditions for the following resource categories: land use; socioeconomics; public services and facilities; aesthetics; cultural and paleontological resources; biological resources; agricultural resources; soils and geology; water resources; hazardous wastes, substances, and materials; traffic; air quality; and noise.

ES-9 ENVIRONMENTAL CONSEQUENCES

This EIS/EIR evaluates the potential environmental consequences of the decision to dispose of Marine Corps property and the proposed reuse of MCAS Tustin by the cities of Tustin and Irvine. The report compares potential environmental impacts with NEPA and CEQA impact significance thresholds for each environmental resource category mentioned in the foregoing "Affected Environment" section. For the purposes of the Navy's NEPA analysis, direct environmental consequences are those associated with the Navy's disposal action and the No Action Alternative, and indirect environmental consequences are those associated with the reuse of MCAS Tustin

properties; whereas, under CEQA, the direct and indirect environmental consequences focus on the proposed reuse of the MCAS Tustin properties.

The environmental consequences of the No Action Alternative, the DON property disposal action, and the City's of Tustin's three reuse alternatives are summarized in Table ES-3.

ES-10 CUMULATIVE IMPACTS

Federal guidelines implementing NEPA define a cumulative impact as one that would result from the incremental impact of an action when added to other past, present, and reasonably foreseeable actions (40 C.F.R. $ 1508.7). California guidelines implementing CEQA require a discussion of significant environmental impacts that would result when the incremental effects of a project are considerable when viewed in combination with the effects of "past, present, and probable future projects" or in relation to "a summary of projections contained in an adopted general plan or related planning document" (Cal. Code Regs., Title 14, § 15065(c) and § 15130(b)(1)(A)(B)). Because build-out of any reuse alternative would be 20 years or more, it is appropriate to evaluate cumulative impacts in conjunction with the build-out of general plans for the cities of Tustin, Irvine, and Santa Ana whicb bave a similar planning time frame.

Due to recent changes to the *CEQA Guidelines*, cumulative impact analysis under CEQA is now slightly different than under NEPA. Pursuant to the *CEQA Guidelines*, a project's contribution to a significant cumulative impact can be less than "cumulatively considerable" if the project is required to implement or fund its fair share of a mitigation measure designed to alleviate the cumulative impact, or if the impact is *de minimus* (Cal. Code Regs., Title 14, § 15130(a)). CEQ Regulations implementing NEPA state that cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 C.F.R. § 1568.7). The distinction may not be applicable in many instances, but it is possible for a project which has no project-related cumulative impact to be considered a significant cumulative impact under NEPA, whereas by definition, it would not be significant under CEQA.

Significant and unmitigable cumulative impacts would occur under NEPA and CEQA for the issue areas of aesthetics (all three alternative if both blimp hangars are lost), historic resources (all three alternatives), agricultural resources (all three alternatives), traffic (all three alternatives), and air quality (all three alternatives). There would be significant cumulative impacts under NEPA for land use, biological resources, and noise that would be not significant under CEQA because project-specific impacts would be mitigated. Other issue areas would not result in cumulatively significant impacts.

Table ES-3
Summary of Potential Significant Environmental Consequences and Mitigation Measures

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Land Use				
No significant impacts are expected; no mitigation measures are required.	**Impact**. Land use categories would not be consistent with the *City of Tustin General Plan*, the Tustin zoning ordinance, the *City of Irvine General Plan*, and Irvine zoning ordinance. Planned development may have compatibility impacts between land uses. **Mitigation LU-1**. The City of Tustin General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Tustin. **Mitigation LU-2**. The City of Irvine General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Irvine.	**Impact**. Land use categories would not be consistent with the *City of Tustin General Plan*, the Tustin zoning ordinance, the *City of Irvine General Plan*, and Irvine zoning ordinance. Planned development may have compatibility impacts between land uses. **Mitigation LU-1**. The City of Tustin General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Tustin. **Mitigation LU-2**. The City of Irvine General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Irvine.	**Impact**. Land use categories would not be consistent with the *City of Tustin General Plan*, the Tustin zoning ordinance, the *City of Irvine General Plan*, and Irvine zoning ordinance. Planned development may have compatibility impacts between land uses. **Mitigation LU-1**. The City of Tustin General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Tustin. **Mitigation LU-2**. The City of Irvine General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Irvine.	No significant impacts are expected; no mitigation measures are required.
Socioeconomics				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	**Impact**. The beneficial effect associated with provision of jobs and housing would be precluded. **Mitigation**. Development of some type of reuse.
Utilities				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.

Table ES-3. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Public Services and Facilities				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	**Impact.** The beneficial effect associated with development of parkland would be precluded. **Mitigation.** Development of some type of reuse.
Aesthetics				
No significant impacts are expected; no mitigation measures are required.	**Impact.** There is the potential for visual impacts if landscaping and urban design do not fully address aesthetic considerations: i.e., do not maintain view corridors, provide screening, or incorporate landscaping. **Mitigation Vis-1.** An urban design plan shall be adopted to provide for distinct and cohesive architectural and landscape design, features and treatments, and harmony with existing adjacent landscape. Responsibility. City of Tustin. **Impact.** The loss of both hangars would be a significant unmitigable visual impact.	**Impact.** There is the potential for visual impacts if landscaping and urban design do not fully address aesthetic considerations; i.e., do not maintain view corridors, provide screening, or incorporate landscaping. **Mitigation Vis-1.** An urban design plan shall be adopted to provide for distinct and cohesive architectural and landscape design, features and treatments, and harmony with existing adjacent landscape. Responsibility. City of Tustin. **Impact.** The loss of both hangars would be a significant unmitigable visual impact.	**Impact.** There is the potential for visual impacts if landscaping and urban design do not fully address aesthetic considerations; i.e., do not maintain view corridors, provide screening, or incorporate landscaping. **Mitigation Vis-1.** An urban design plan shall be adopted to provide for distinct and cohesive architectural and landscape design, features and treatments, and harmony with existing adjacent landscape. Responsibility. City of Tustin. **Impact.** The loss of both hangars would be a significant unmitigable visual impact.	No significant impacts are expected; no mitigation measures are required.
Cultural and Paleontological Resources				
Impact. Transfer of the Historic District would lessen the legal protection afforded this historic property. This would be a significant impact under NEPA that cannot be fully mitigated. **Mitigation.** Compliance with Section 106 of the NHPA (16 U.S.C. § 470 et seq.). Responsibility: DON	**Impact 1.** Grading in the four-acre parcel that has not been surveyed may result in impacts to archaeological resources, if they are present. **Mitigation Arch-1.** The area shall be surveyed to determine the presence/absence of archaeological resources. Responsibility. Project Proponent **Impact 2.** Grading in the reuse plan area may uncover buried archaeological resources. **Mitigation Arch-2.** If buried resources are found during grading, a qualified archaeologist would need to assess the site significance and perform appropriate mitigation including testing or data recovery. Native American consultation should also be initiated. Responsibility. City of Tustin, City of Irvine. **Impact 3.** All of the two discontinuous historic districts would be eliminated. The intent is to retain both hangars, if financially feasible, but one or both of the blimp hangars could be eliminated.	**Impact 1.** Grading in the four-acre parcel that has not been surveyed may result in impacts to archaeological resources, if they are present. **Mitigation Arch-1.** The area shall be surveyed to determine the presence/absence of archaeological resources. Responsibility. Project Proponent **Impact 2.** Grading in the reuse plan area may uncover buried archaeological resources. **Mitigation Arch-2.** If buried resources are found during grading, a qualified archaeologist would need to assess the site significance and perform appropriate mitigation including testing or data recovery. Native American consultation should also be initiated. Responsibility. City of Tustin, City of Irvine. **Impact 3.** All of the two discontinuous historic districts would be eliminated. Both of the blimp hangars could be eliminated.	**Impact 1.** Grading in the four-acre parcel that has not been surveyed may result in impacts to archaeological resources, if they are present. **Mitigation Arch-1.** The area shall be surveyed to determine the presence/absence of archaeological resources. Responsibility. Project Proponent **Impact 2.** Grading in the reuse plan area may uncover buried archaeological resources. **Mitigation Arch-2.** If buried resources are found during grading, a qualified archaeologist would need to assess the site significance and perform appropriate mitigation including testing or data recovery. Native American consultation should also be initiated. Responsibility. City of Tustin, City of Irvine. **Impact 3.** All of the two discontinuous historic districts would be eliminated. Both of the blimp hangars could be eliminated.	**Impact.** Blimp hangars may deteriorate. **Mitigation Hist-2.** An historic properties maintenance plan will be prepared and implemented.

Table ES-3. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Cultural and Paleontological Resources Continued	**Mitigation Hist-1.** ~~Negotiate MOA.~~ An Historic American Building Survey will be conducted. Responsibility. DON~~, City of Tustin~~ **Mitigation Hist-2.** Copies of plans, architectural drawings, and other archival materials and records concerning the buildings and structures that made up the original Navy lighter-than-air blimp facility will be donated to a local curation facility. Responsibility. DON. **Mitigation Hist-3.** A substantive effort will be made to determine whether there is an economically viable adaptive use of Hangar 28 and Hangar 29. Responsibility. The City of Tustin and County of Orange. **Mitigation Hist-4.** If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant. Responsibility. DON. **Mitigation Hist-5.** If an economically viable adaptive use of the Hangar 28 complex is not identified through a marketing effort, the following measures will be required: (a) an illustrated written history on MCAS Tustin shall be prepared; (b) a professional-quality illustrated interpretive exhibit shall be prepared; and (c) a professional-quality documentary video shall be prepared for a one-time distribution and outreach program. Responsibility. The City of Tustin and County of Orange. **Impact.** Earthwork activities may destroy geological deposits within which unique paleontological resources are buried. **Mitigation Paleo-1.** Applicants of individual development projects shall comply with the requirements established in a PRMP prepared for the site. Responsibility. City of Tustin, City of Irvine	**Mitigation Hist-1.** ~~Negotiate MOA.~~ An Historic American Building Survey will be conducted. Responsibility. DON~~, City of Tustin~~ **Mitigation Hist-2.** Copies of plans, architectural drawings, and other archival materials and records concerning the buildings and structures that made up the original Navy lighter-than-air blimp facility will be donated to a local curation facility. Responsibility. DON. **Mitigation Hist-3.** A substantive effort will be made to determine whether there is an economically viable adaptive use of Hangar 28 and Hangar 29. Responsibility. The City of Tustin and County of Orange. **Mitigation Hist-4.** If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant. Responsibility. DON. **Mitigation Hist-5.** If an economically viable adaptive use of the Hangar 28 complex is not identified through a marketing effort, the following measures will be required: (a) an illustrated written history on MCAS Tustin shall be prepared; (b) a professional-quality illustrated interpretive exhibit shall be prepared; and (c) a professional-quality documentary video shall be prepared for a one-time distribution and outreach program. Responsibility. The City of Tustin and County of Orange. **Impact.** Earthwork activities may destroy geological deposits within which unique paleontological resources are buried. **Mitigation Paleo-1.** Applicants of individual development projects shall comply with the requirements established in a PRMP prepared for the site. Responsibility. City of Tustin, City of Irvine	**Mitigation Hist-1.** ~~Negotiate MOA.~~ An Historic American Building Survey will be conducted. Responsibility. DON~~, City of Tustin~~ **Mitigation Hist-2.** Copies of plans, architectural drawings, and other archival materials and records concerning the buildings and structures that made up the original Navy lighter-than-air blimp facility will be donated to a local curation facility. Responsibility. DON. **Mitigation Hist-3.** A substantive effort will be made to determine whether there is an economically viable adaptive use of Hangar 28 and Hangar 29. Responsibility. The City of Tustin and County of Orange. **Mitigation Hist-4.** If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant. Responsibility. DON. **Mitigation Hist-5.** If an economically viable adaptive use of the Hangar 28 complex is not identified through a marketing effort, the following measures will be required: (a) an illustrated written history on MCAS Tustin shall be prepared; (b) a professional-quality illustrated interpretive exhibit shall be prepared; and (c) a professional-quality documentary video shall be prepared for a one-time distribution and outreach program. Responsibility. The City of Tustin and County of Orange. **Impact.** Earthwork activities may destroy geological deposits within which unique paleontological resources are buried. **Mitigation Paleo-1.** Applicants of individual development projects shall comply with the requirements established in a PRMP prepared for the site. Responsibility. City of Tustin, City of Irvine	

Table ES-3. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Cultural and Paleontological Resources Continued	**Mitigation Paleo-2.** Prior to the issuance of a grading permit, written evidence shall be provided to each city that a county-certified paleontologist has been retained to conduct salvage excavation of unique paleontological resources if they are found. Responsibility. Project proponent.	**Mitigation Paleo-2.** Prior to the issuance of a grading permit, written evidence shall be provided to each city that a county-certified paleontologist has been retained to conduct salvage excavation of unique paleontological resources if they are found. Responsibility. Project proponent.	**Mitigation Paleo-2.** Prior to the issuance of a grading permit, written evidence shall be provided to each city that a county-certified paleontologist has been retained to conduct salvage excavation of unique paleontological resources if they are found. Responsibility. Project proponent.	
Biological Resources				
No significant impacts are expected; no mitigation measures are required.	**Impact 1.** Approximately ~~16.5~~ 12.8 acres of jurisdictional waters would be indirectly impacted by channel improvements by OCFCD. Another 16.2 acres of jurisdictional waters, of which ~~3.65~~ 2.4 acres are classified as vegetated or seasonal wetlands, would be directly impacted by reuse. **Mitigation Bio-1.** Section 404, Section 1601, and other necessary permits shall be obtained. A replacement ratio shall be determined in consultation with regulatory agencies. Responsibility. OCFCD, project proponents as appropriate. **Impact.** Several southwestern pond turtles would be directly significantly impacted. **Mitigation Bio-2.** A relocation site for turtles captured on site shall be identified. Responsibility. Project proponent. **Mitigation Bio-3.** Permits from the CDFG shall be obtained for live-capture and transportation of the turtles. Responsibility. Project proponent. **Mitigation Bio-4.** An agreement shall be negotiated with the CDFG or other agency, as appropriate, for contribution of funds to improve, restore, or create the relocation site as turtle habitat. Responsibility. City of Tustin and/or project proponent.	**Impact 1.** Approximately ~~16.5~~ 128 acres of jurisdictional waters would be indirectly impacted by channel improvements by OCFCD. Another 16.2 acres of jurisdictional waters, of which ~~3.65~~ 2.4 acres are classified as vegetated or seasonal wetlands, would be directly impacted by reuse. **Mitigation Bio-1.** Section 404, Section 1601, and other necessary permits shall be obtained. A replacement ratio shall be determined in consultation with regulatory agencies. Responsibility. OCFCD, project proponents as appropriate. **Impact.** Several southwestern pond turtles would be directly significantly impacted. **Mitigation Bio-2.** A relocation site for turtles captured on site shall be identified. Responsibility. Project proponent. **Mitigation Bio-3.** Permits from the CDFG shall be obtained for live-capture and transportation of the turtles. Responsibility. Project proponent. **Mitigation Bio-4.** An agreement shall be negotiated with the CDFG or other agency, as appropriate, for contribution of funds to improve, restore, or create the relocation site as turtle habitat. Responsibility. City of Tustin and/or project proponent.	**Impact 1.** Approximately ~~16.5~~ 12.8 acres of jurisdictional waters would be indirectly impacted by channel improvements by OCFCD. Another 16.2 acres of jurisdictional waters, of which ~~3.65~~ 2.4 acres are classified as vegetated or seasonal wetlands, would be directly impacted by reuse. **Mitigation Bio-1.** Section 404, Section 1601, and other necessary permits shall be obtained. A replacement ratio shall be determined in consultation with regulatory agencies. Responsibility. OCFCD, project proponents as appropriate. **Impact.** Several southwestern pond turtles would be directly significantly impacted. **Mitigation Bio-2.** A relocation site for turtles captured on site shall be identified. Responsibility. Project proponent. **Mitigation Bio-3.** Permits from the CDFG shall be obtained for live-capture and transportation of the turtles. Responsibility. Project proponent. **Mitigation Bio-4.** An agreement shall be negotiated with the CDFG or other agency, as appropriate, for contribution of funds to improve, restore, or create the relocation site as turtle habitat. Responsibility. City of Tustin and/or project proponent. .	No significant impacts are expected; no mitigation measures are required.
Agricultural Resources				
No significant impacts are expected; no mitigation measures are required.	**Impact.** Existing farmland would no longer be cultivated and Prime Farmland and Farmland of Statewide Importance would be eliminated. There would be a significant, unmitigable impact.	**Impact.** Existing farmland would no longer be cultivated and Prime Farmland and Farmland of Statewide Importance would be eliminated. There would be a significant, unmitigable impact.	**Impact.** Existing farmland would no longer be cultivated and Prime Farmland and Farmland of Statewide Importance would be eliminated. There would be a significant, unmitigable impact.	No significant impacts are expected; no mitigation measures are required.

Table ES-3. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Soils and Geology				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.
Water Resources				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.
Hazardous Wastes, Substances, and Materials				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.
Traffic/Circulation				
No significant impacts are expected; no mitigation measures are required.	**Impact.** There would be potential short-term delay and road closures during construction. There would be decreased levels of service at certain intersections and road segments. **Mitigation T/C-1.** Provide traffic control plans and communication to minimize disruption. Responsibility. City of Tustin, City of Irvine **Mitigation T/C-~~2~~1.** Ensure that the intersection improvements indicated in Tables 4.12-~~8~~7 and 4.12-9 are implemented ~~(Interim Development)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-2. Ensure that the intersection improvements indicated in Table 4.12-9 are implemented (Buildout). Responsibility. City of Tustin, City of Irvine.**~~ **Mitigation T/C-3.** Contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Table 4.12-~~108. (Buildout)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-5. Implement necessary roadway improvements for the affected locations within the City of Santa Ana jurisdiction, in accordance with the Tustin/ Santa Ana Improvement Agreement (TSIA). For deficient Santa Ana intersections that are not covered in the TSIA, the City of Tustin and City of Irvine, as applicable, shall participate in these improvements on a fair share basis (Interim Development and Buildout).**~~	**Impact.** There would be decreased levels of service at certain intersections and road segments. **Mitigation T/C-1~~0~~0.** Ensure that the intersection improvements indicated in Tables 4.12-17 and 4.12-18 are implemented ~~(Interim Development)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-9. Ensure that the intersection improvements indicated in Table 4.12-18 are implemented (Buildout). Responsibility. City of Tustin, City of Irvine.**~~ **Mitigation T/C-1~~1~~0.** Contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Tables 4.17-17a and 4.12-19. ~~(Buildout)~~. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-~~8~~4.** Identify alternative changes that provide an equivalent level of mitigation, as shown in Tables 4.12-17, 4.12-17a, and 4.12-18~~applicable to the impacted jurisdiction (Buildout)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-5. Implement necessary roadway improvements for the affected locations within the City of Santa Ana jurisdiction, in accordance with the Tustin/ Santa Ana Improvement Agreement (TSIA). For deficient Santa Ana intersections that are not covered in the TSIA, the City of Tustin and City of Irvine, as applicable shall participate in these improvements on a fair share basis (Interim Development and Buildout).**~~	**Impact.** There would be decreased levels of service at certain intersections and road segments. **Mitigation T/C-1~~3~~11.** Ensure that the intersection improvements indicated in Table 4.12-26 are implemented (Interim Development). Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-12. Ensure that the intersection improvements indicated in Table 4.12-27 are implemented (Buildout). Responsibility. City of Tustin, City of Irvine.**~~ **Mitigation T/C-1~~4~~13.** Contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Tables 4.12-26a and 4.12-28. ~~(Buildout)~~. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-~~8~~4.** Identify alternative changes that provide an equivalent level of mitigation, as shown in Tables 4.12-26, 4.12-27, 4.12-28, and 4.12-29~~applicable to the impacted jurisdiction (Buildout)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-5. Implement necessary roadway improvements for the affected locations within the City of Santa Ana jurisdiction, in accordance with the Tustin/ Santa Ana Improvement Agreement (TSIA). For deficient Santa Ana intersections that are not covered in the TSIA, the City of Tustin and City of Irvine, as applicable shall participate in these improvements on a fair share basis (Interim Development and Buildout).**~~	**Impact.** Would not create through connections to particularly address regional circulation issue. **Mitigation.** Development of some type of reuse.

Table ES-3. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Traffic/Circulation Continued	~~Responsibility. City of Tustin, City of Irvine.~~ ~~**Mitigation T/C-6. Develop financing mechanisms for needed roadway improvements within the reuse plan area (Interim Development and Buildout).**~~ ~~Responsibility. City of Tustin, City of Irvine.~~ **Mitigation T/C-4.** Ensure that all on-site circulation improvements are phased as shown in Table 4.12-10. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-5.** Prior to approval of development permit or vesting map, a project developer shall enter into an agreement to assign improvements and fair share mechanism. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-6.** Monitor all development and cumulative ADTs to ensure all roadway improvements in Table 4.12-10 are constructed prior to approval of additional projects. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-7.** Adopt a trip budget to assist in monitoring cumulative ADTs. Responsibility. City of Tustin. **Mitigation T/C-~~8~~8.** Identify alternative changes that provide an equivalent level of mitigation as shown in Tables 4.12-7, 4.12-8 and 4.12-9, ~~as applicable to the impacted jurisdiction (Buildout).~~ Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-~~7~~9.** The City of Tustin will enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements are constructed pursuant to improvement programs established by the respective jurisdiction (Interim Development and Buildout). Responsibility. City of Tustin.	~~Responsibility. City of Tustin, City of Irvine.~~ ~~**Mitigation T/C-6. Develop financing mechanisms for needed roadway improvements within the reuse plan area (Interim Development and Buildout).**~~ ~~Responsibility. City of Tustin, City of Irvine.~~ **Mitigation T/C-~~7~~7.** The City of Tustin will enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements are constructed pursuant to improvement programs established by the respective jurisdiction (Interim Development and Buildout). Responsibility. City of Tustin. **Mitigation T/C-12.** Ensure that all on-site circulation improvements are phased as shown in Table 4.12-19a. Responsibility. City of Tustin. Mitigation T/C-5 through T/C 9 for Alternative 1 shall be implemented with tables appropriate for Alternative 2.	~~Responsibility. City of Tustin, City of Irvine.~~ ~~**Mitigation T/C-6. Develop financing mechanisms for needed roadway improvements within the reuse plan area (Interim Development and Buildout).**~~ ~~Responsibility. City of Tustin, City of Irvine.~~ **Mitigation T/C-~~7~~7.** The City of Tustin will enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements are constructed pursuant to improvement programs established by the respective jurisdiction (Interim Development and Buildout). Responsibility. City of Tustin. **Mitigation T/C-15.** Ensure that all on-site circulation improvements are phased as shown on Table 4.12-29.	

Table ES-3. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Air Quality				
No significant impacts are expected; no mitigation measures are required.	**Impact**. Construction activities would result in PM_{10} and ROC emissions that would be significant and not fully mitigable. **Mitigation AQ-1.** Project proponent shall be required to implement specific construction control measures, if not already required by the SCAQMD under Rule 403. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-2**. Project proponent shall be required to use low VOC architectural coatings for all painting operations unless determined to be infeasible. Responsibility. City of Tustin, City of Irvine. **Impact.** Operational air quality impacts would be significant and not fully mitigable. **Mitigation AQ-3**. Prior to the issuance of development permits for new or expanded non-residential projects with 100 or more employees, TDM measures shall be imposed. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-4**. If not required under individual TDM plans, other transportation management measures shall be implemented. Responsibility. City of Tustin, City of Irvine.	**Impact.** Construction activities would result in PM_{10} and ROC emissions that would be significant and not fully mitigable. **Mitigation AQ-1**. Project proponent shall be required to implement specific construction control measures, if not already required by the SCAQMD under Rule 403. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-2.** Project proponent shall be required to use low VOC architectural coatings for all painting operations unless determined to be infeasible. Responsibility. City of Tustin, City of Irvine. **Impact**. Operational air quality impacts would be significant and not fully mitigable. **Mitigation AQ-3.** Prior to the issuance of development permits for new or expanded non-residential projects with 100 or more employees, TDM measures shall be imposed. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-4.** If not required under individual TDM plans, other transportation management measures shall be implemented. Responsibility. City of Tustin, City of Irvine.	**Impact**. Construction activities would result in PM_{10} and ROC emissions that would be significant and not fully mitigable. **Mitigation AQ-1**. Project proponent shall be required to implement specific construction control measures, if not already required by the SCAQMD under Rule 403. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-2.** Project proponent shall be required to use low VOC architectural coatings for all painting operations unless determined to be infeasible. Responsibility. City of Tustin, City of Irvine. **Impact**. Operational air quality impacts would be significant and not fully mitigable. **Mitigation AQ-3**. Prior to the issuance of development permits for new or expanded non-residential projects with 100 or more employees. TDM measures shall be imposed. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-4**. If not required under individual TDM plans, other transportation management measures shall be implemented. Responsibility. City of Tustin, City of Irvine.	**Impact**. The majority of existing air pollutant emissions associated with the site would be eliminated and no new emissions would be generated. **Mitigation**. No mitigation is required because the impact is beneficial.
Noise				
No significant impacts are expected; no mitigation measures are required.	**Impact.** The proposed extension of Tustin Ranch Road could expose existing residences to noise levels greater than 65 dB CNEL. Some ~~existing and planned on-site housing units would~~ existing residential units within the reuse area may experience noise levels greater than 65 dB CNEL. With reuse and future development, noise levels at residential and park locations adjacent to Warner Avenue may exceed 65 dB CNEL. **Mitigation N-1.** Prior to reuse of any existing residential units, installation of noise attenuation barriers, insulation, or similar devices shall be installed, where necessary and feasible. Responsibility. City of Tustin, the City of Irvine.	**Impact.** The proposed extension of Tustin Ranch Road could expose existing residences to noise levels greater than 65 dB CNEL. Some ~~existing and planned on-site housing units would~~ existing residential units within the reuse area may experience noise levels greater than 65 dB CNEL with reuse and future development, noise levels at residential /park locations adjacent to Warner Avenue may exceed 65 dB CNEL. **Mitigation N-1.** Prior to reuse of any existing residential units, installation of noise attenuation barriers, insulation, or similar devices shall be installed, where necessary and feasible. Responsibility. City of Tustin, the City of Irvine.	**Impact**. The proposed extension of Tustin Ranch Road could expose existing residences to noise levels greater than 65 dB CNEL. Some ~~existing and planned on-site housing units would~~ existing residential units within the reuse area may experience noise levels greater than 65 dB CNEL with reuse and future development, noise levels at residential /park locations adjacent to Warner Avenue may exceed 65 dB CNEL. **Mitigation N-1.** Prior to reuse of any existing residential units, installation of noise attenuation barriers, insulation, or similar devices shall be installed, where necessary and feasible. Responsibility. City of Tustin, the City of Irvine.	No significant impacts are expected: no mitigation measures are required.

Table ES-3. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Noise Continued	**Mitigation N-2.** Potential noise impacts from the grade-separated intersection of Tustin Ranch Road at Edinger Avenue shall be evaluated, and noise attenuation measures shall be incorporated into the intersection design. Responsibility. City of Tustin. **Mitigation N-3.** Standards shall be adopted for new development including policies that require noise attenuation. Responsibility. City of Tustin, the City of Irvine. **Mitigation N-4.** Prior to the connection of Warner Avenue to the North or South Loop Road, a noise study shall be completed to assess impacts. If mitigation is required, the City of Tustin and City of Irvine shall enter into an agreement which allocates mitigation cost on a fair share basis. Responsibility. City of Tustin.	Mitigation N-2. Potential noise impacts from the grade-separated intersection of Tustin Ranch Road at Edinger Avenue shall be evaluated, and noise attenuation measures shall be incorporated into the intersection design. Responsibility. City of Tustin. **Mitigation N-3.** Standards shall be adopted for new development including policies that require noise attenuation. Responsibility. City of Tustin, the City of Irvine. **Mitigation N-4.** Prior to the connection of Warner Avenue to the North or South Loop Road, a noise study shall be completed to assess impacts. If mitigation is required, the City of Tustin and City of Irvine shall enter into an agreement which allocates mitigation cost on a fair share basis. Responsibility. City of Tustin.	**Mitigation N-2.** Potential noise impacts from the grade-separated intersection of Tustin Ranch Road at Edinger Avenue shall be evaluated, and noise attenuation measures shall be incorporated into the intersection design. Responsibility. City of Tustin. **Mitigation N-3.** Standards shall be adopted for new development including policies that require noise attenuation. Responsibility. City of Tustin, the City of Irvine. **Mitigation N-4.** Prior to the connection of Warner Avenue to the North or South Loop Road, a noise study shall be completed to assess impacts. If mitigation is required, the City of Tustin and City of Irvine shall enter into an agreement which allocates mitigation cost on a fair share basis. Responsibility. City of Tustin.	

ES-11 OTHER NEPA/CEQA CONSIDERATIONS

This section of the EIS/EIR addresses various other topics required by NEPA and CEQA.

Significant Unavoidable Adverse Effects

Each of the alternatives would result in some significant environmental effects for whicb no mitigation or only partial mitigation is feasible. These unavoidable significant impacts include: (1) conversion of 702 acres of Farmland to urban uses (all three alternatives), (2) elimination of two discontiguous eligible historic districts (all three alternatives), ~~(3) possible demolition of both blimp hangars (Alternative 1), (4) planned demolition of the southern blimp hangar and possible demolition of the northern blimp hangar (Alternatives 1, 2, and 3),~~ (53) possible demolition of both blimp hangars and loss of visually prominent features (all three alternatives) ~~(Alternatives 2 and 3)~~, (64) air quality emissions that would exceed SCAQMD criteria (all three alternatives), and (75) traffic impacts at various intersections (intersection locations vary by alternative). Under Alternative 1, unmitigable impacts would occur at the intersections of Tustin Ranch Road/Walnut Avenue and Jamboree Road/Barranca Parkway in the year 2020 condition and there would be no similar impacts at year 2005. Under Alternative 2, significant unmitigable impacts would occur at Tustin Ranch Road/Walnut Avenue, Von Karman Avenue/Barranca Parkway, ~~and~~ Jamboree Road/Barranca Parkway, Grand Avenue/Edinger Avenue, and Grand Avenue/Warner Avenue (year 2020 only). Under Alternative 3 there would be no significant unmitigable impacts at year 2005. Such impacts would occur, however, at Tustin Ranch Road/Walnut Avenue, Von Karman Avenue/Barranca Parkway, and Jamboree Road/Barranca Parkway, and Grand Avenue/Warner Avenue in the year 2020.

Short-term Uses and Long-term Prodnctivity

BRAC actions by President Bush, President Clinton, and Congress have closed MCAS Tustin and determined that there is no long-term need for the installation to maintain military preparedness. Disposal and subsequent reuse of the closed Marine Corps property would contribute to long-term productivity by providing jobs and revenue in the local economy. Additionally, reuse would allow the LRA to realize three goals: (1) provide parkland to satisfy an existing deficiency, (2) provide housing to meet projected demand, and (3) institute a circulation system with connections across the site. The environmental effects would include impacts to land use, utilities, public services and facilities, aesthetics, cultural resources, paleontological resources, biological resources, agricultural resources, traffic, air quality and noise. The tradeoff for potential environmental impacts would be

the socioeconomic gain of providing housing, parkland and circulation improvements as well as employment to the local economy.

Irreversible and Irretrievable Commitment of Resources

Implementation of any of the reuse alternatives would require commitments of both renewable and nonrenewable energy and material resources for demolition, and commitments for construction of the structures and infrastructure improvements required for implementation. These developments would represent a very large commitment of financial resources but would not represent an irreversible commitment of the MCAS Tustin properties to the proposed uses.

Alternative 1 would include a commitment of biological resources including jurisdictional waters and wetland habitat and southwestern pond turtles, possible elimination of one or both blimp hangars, elimination of the two discontiguous historic districts, and loss of agricultural resources due to the use of Prime Farmland and Farmland of Statewide Importance. Alternative 2 would include the same commitments as Alternative 1, but would also include commitments of aesthetic resources and historic resources due to the loss of the discontiguous historic district and at least one of the blimp hangars. Alternative 3 would include the same commitments as those described for Alternative 2. The reuse alternatives would also consume large volumes of nonrenewable fossil fuel as a result of increased trips generated by truck and automobile trips.

Growth-inducing Impacts

Analysis of growth-inducing effects includes those characteristics of the action that may encourage and facilitate activities that, either individually or cumulatively, would affect the environment. Population increases, for example, may impose new burdens on existing community service facilities. The proposed action would partially meet the projected demand for additional bousing, jobs, and revenue in southern California. Rather than induce unplanned growth, the proposed action is designed to accommodate future growth in a manner consistent with applicable plans and policies. However, disposal of MCAS Tustin has removed one constraint to growth in the area immediately north of the Air Station. Residential land uses within Segments A and B of the Browning/CGA Corridor Easements were restricted and these development restrictions were eliminated once Air Station operations ceased.

Approximately 70 percent of the land within the corridors has already been developed in accordance with the general plans and zoning ordinances of the cities of Tustin and Irvine. An undeveloped area designated Development Reserve (just north of the Air Station and within the Browning Corridor)

could be developed with industrial and/or commercial uses, and small pockets of other undeveloped land within the two corridors could also be developed. However, existing land use regulations would regulate development in these areas, and no unplanned growth would occur. There is one undeveloped area within Segment B of the CGA Corridor that is designated for residential use and could now be developed. Future residential development of this area would be consistent with local land use regulations, and removal of the corridor designation would not result in unplanned residential development.

Health and Safety Risks to Children

Executive Order 13045 (Protection of Children From Environmental Health Risks and Safety Risks, 62 Fed. Reg. 19885 (1997)) requires assessment of child-specific environmental health risk and safety risk issues. There may be potential on-site health and safety impacts resulting from exposure to environmental contamination/hazardous materials on the site during reuse, but there is no indication that any such potential impacts would disproportionately accrue to children. Other health and safety impact concerns could also extend offsite with some of the reuse alternatives. Air quality impacts are a potential concern, but given that any such impacts would be of a small incremental level and would be experienced on a regional basis rather than a localized basis, no disproportionate impacts to children are anticipated. Noise impacts, though not linked to a "product or substance" as specified in Executive Order 13045, are another potential concern for the health of children. However, while noise impacts are likely to extend into neighborhoods offsite, there is no evidence that children are likely to be subject to disproportionate impacts based on either excessive ambient noise or through learning disruption as the result of noise, either in residences or schools. In summary, no disproportionate impacts to environmental health risks and/or safety risks to children are likely under any of the reuse alternatives.

Environmental Justice

Executive Order 12898 (Environmental Justice in Minority and Low-income Populations, 59 Fed. Reg. 7629 (1994)) requires addressing the relative impact of federal actions on minority and low-income populations to avoid the placement of a disproportionate share of adverse impacts of these actions on these socioeconomic groups. None of the reuse alternatives appear likely enough to have a disproportionate impact on minority populations or low-income populations because: (1) the area encompassed by the census tracts contiguous with the reuse plan area do not include disproportionately high minority population or low-income population components compared to adjacent communities or the county; and, (2) the impacts of the reuse of the site under any of the

various alternatives are not considered to have negative socioeconomic impacts. The immediately adjacent City of Santa Ana has greater proportion of minority residents and low-income residents than seen in the cities of Tustin and Irvine, or in Orange County as a whole. There is no indication, however, that these residents would experience disproportional significant impacts as a result of the disposal and reuse of the site.

ES-12 LRA REUSE ALTERNATIVE IMPLEMENTING ACTIONS

Description of Implementing Actions

Chapter 7 of the EIS/EIR is a program-level EIR as defined by CEQA (Cal. Code Regs., Title 14, § 15168) and it addresses only the environmental consequences of the Implementing Actions for the LRA Reuse Alternative (Alternative 1) (hereinafter called Implementing Actions). The Implementing Actions consist of the following five actions which are described briefly below:

1. Adoption of the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998).

2. Amendment of the general plans and zoning ordinances of the City of Tustin and the City of Irvine.

3. Amendment of the County of Orange *Master Plan of Arterial Highways*.

4. Final designation for MCAS Tustin by the California Trade and Commerce Agency under the LAMBRA Act.

5. Designation of MCAS Tustin as a redevelopment project under California Community Redevelopment Law (Health and Safety Code §33000 et seq. and §33492.100 et seq).

MCAS Tustin Specific Plan

The *MCAS Tustin Specific Plan/Reuse Plan* (1996b) and *Errata* (1998) were prepared by the City of Tustin and include the following chapters: (1) Introduction, (2) Plan Description, (3) Land Use and Development/Reuse Regulations, (4) Specific Plan Administration, and (5) Reuse Authority/Institutional Framework. The key chapter for purposes of this executive summary is Chapter 2, Plan Description. That chapter includes: a description of the purpose and scope of the Specific Plan; the Land Use Plan, including land use designations and neighborhoods; a description

of the federal property disposal process; a summary of recommended property conveyance methods; and 13 plans for infrastructure and urban design to support planned land uses.

The Land Use Plan provides for a range of land use designations under the general categories of Residential, Commercial/Business, and Industrial/Recreational. The Land Use Plan also describes allowable densities and intensities for development, and specific land uses for each of the eight neighborhoods comprising the land use plan. The 13 plans for Infrastructure and Urban Design include a circulation plan, recreational bikeway/trail concept plan, park/recreation/opens space plan, schools plan, domestic water plan, reclaimed water plan, sanitary sewer plan, electricity plan, natural gas plan, telephone plan, cable television plan, and urban design plan.

Amendments to General Plans and Zoning

Existing general plan categories in the City of Tustin are Military and Public/Institutional ~~Land~~ and the general plan amendment would replace these categories witb a Specific Plan designation. Additionally, various elements of the General Plan would be modified with narrative and statistical corrections to ensure consistency between general plan elements and to update general plan information. The zoning map in the City of Tustin would be amended from Public and Institutional to MCAS Tustin Specific Plan.

The City of Irvine General Plan categories are Military and ~~Development Reserve~~ Recreation which would be amended to reflect the MCAS Tustin Specific Plan. Exiting zoning categories Military and Development Reserve would also be cbanged to reflect zoning categories consistent with the Specific Plan.

Amendment to County of Orange Plan

Amendment of the Orange County Master Plan of Arterial Highways (MPAH) by the County of Orange would be necessary to implement the LRA Reuse Alternative. The MPAH would be amended to include: the southerly extension of Tustin Ranch Road from Edinger Avenue to Barranca Parkway; the east/west extension of Warner Avenue from Red Hill Avenue to Jamboree Road through the Specific Plan site; and the addition of a new loop system consisting of Valencia North Loop Road and South Loop Road, Armstrong Avenue, and East Connector and West Connector between Valencia North and Edinger Avenue within the site. Both the Tustin Ranch Road and Warner Avenue extensions would be classified as six-lane major arterials. Valencia North

Loop Road and South Loop Road, Armstrong Avenue, the East Connector and the West Connector would be classified as four-lane arterials.

LAMBRA Designation

The City of Tustin applied to the CTCA for designation as a LAMBRA and was granted a conditional designation as a LAMBRA on June 23, 1997. The purpose of this designation is to stimulate business and industrial growth in areas affected by military base closures through the provision of relaxed regulatory controls, tax credits, and other economic incentives to private sector investors. As an Implementing Action for the LRA Reuse Alternative, final designation as a LAMBRA would be granted by CTCA.

Redevelopment Project

The City of Tustin intends to establish a redevelopment project for the MCAS Tustin Specific Plan. Redevelopment is a tool for use by cities and counties to revitalize certain urban areas via tax increment financing. The proposed Redevelopment Plan, which will be forthcoming, will include the reuse plan area and up to 52 acres of property that are non-contiguous but close by. The cities of Tustin and Irvine have agreed to cooperate in the planning and implementation of a Redevelopment Plan for the entirety of the proposed property and the City of Irvine has granted redevelopment authority to the Tustin Community Redevelopment Agency over the portion of MCAS Tustin located within the City of Irvine. The environmental analysis of the proposed redevelopment project is being conducted on the MCAS Tustin portion of the site only at this time. A subsequent tiered environmental document will be prepared to address any additional land area outside of the MCAS Tustin project.

Environmental Consequences

The environmental consequences of DON disposal and the three reuse alternatives, plus No Action are described in ES-9. In many cases, the Implementing Actions would merely allow for, and carefully guide, the development evaluated in more general terms as Alternative 1. Mitigation measures would be incorporated by reference, as appropriate. Therefore, the impact analysis in Chapter 7 focused on the Implementing Actions that would have a physical change not previously identified under Alternative 1, or where the Specific Plan and other Implementing Actions would modify the impact conclusion reached under Alternative 1. Table ES-4 provides a comparison between Alternative 1 impacts and those associated with the Implementing Actions to identify where additional mitigation measures would be warranted or where previously identified mitigation

Table ES-4
Alternative 1 and LRA Reuse Alternative Implementing Actions Comparison of Potentially Significant Environmental Consequences and Mitigation Measures

Alternative 1	LRA Reuse Alternative Implementing Actions
Land Use	
Impacts. Proposed land use categories would not be consistent with the *City of Tustin General Plan*, the Tustin zoning ordinance, the *City of Irvine General Plan*, and the Irvine zoning ordinance. Planned development may have compatibility impacts between land uses. **Mitigation.** LU-1 and LU-2 in Table ES-3.	**Impact.** No significant impact because the Implementing Actions include general plan amendments, amendments to the zoning code, and site design measures to ensure compatibility. These measures are the items required in LU-1 and LU-2. **Mitigation.** None required.
Population and Housing	
No significant impacts are expected; no mitigation measures are required.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation.** No additional mitigation.
Utilities	
No significant impacts are expected; no mitigation measures are required.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation.** No additional mitigation.
Public Services and Facilities	
No significant impacts are expected; no mitigation measures are required.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation.** No additional mitigation.
Aesthetics	
Impact. There is the potential for visual impacts if landscaping and urban design do not fully address aesthetic considerations, i.e., do not maintain view corridors, provide screening or incorporate landscaping. **Mitigation.** Vis-1 as described in Table ES-3.	**Impact.** No significant impacts because the Implementing Actions include adoption of a Specific Plan with an urban design plan. **Mitigation.** None required.
Cultural and Paleontological Resources	
Impacts. Grading in the four-acre parcel that has not been surveyed may result in impacts to archaeological resources, if they are present. Grading in the reuse plan area may uncover buried archaeological resources. **Impacts.** All of the two discontinuous historic districts would be eliminated. The land use plan provides for retention of both hangars if financially feasible, but one or both of the blimp hangars could be eliminated.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation.** No additional mitigation.

Table ES-4. Continued

Alternative 1	LRA Reuse Alternative Implementing Actions
Cultural and Paleontological Resources Continued Earthwork activities may destroy geological deposits within which unique paleontological resources are buried. Mitigation. Measures Arch-1, Arch-2, Hist-1, Hist-2, Hist-3, Hist-4, Hist-5, Paleo-1 and Paleo-2 as listed in Table ES-3.	
Biological Resources	
Impacts. Approximately ~~16.5~~ 12.8 acres of jurisdictional waters would be indirectly impacted in channel improvements by Orange County Flood Control District. Direct reuse impacts would occur to ~~3.65~~ 2.4 acres of vegetated/seasonal wetlands (within 16.2 acres of jurisdictional waters). Southwestern pond turtle habitat would be impacted. **Mitigation.** Measures Bio-1, Bio-2, Bio-3, and Bio-4 as listed in Table ES-3.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation**. No additional mitigation.
Agricultural Resources	
Impact. Existing farmland would no longer be cultivated and Prime Farmland and Farmland of Statewide Importance would be eliminated. There would be a significant, unmitigable impact. **Mitigation.** There is no feasible mitigation.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation**. There is no feasible mitigation.
Soils and Geology	
No significant impacts are expected; no mitigation measures are required.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation**. No additional mitigation.
Water Resources	
No significant impacts are expected; no mitigation measures are required.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation**. No additional mitigation.
Hazardous Wastes, Substances and Materials	
No significant impacts are expected; no mitigation measures are required.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation**. No additional mitigation.
Traffic/Circulation	
Impact. Traffic generated would result in significant impacts to local intersections. **Mitigation.** Measures T/C-1 through T/C-~~78~~ as listed in Table ES-3.	**Impact**. If circulation system improvements are not phased concurrently with need, then a significant impact would occur. **Mitigation**. Implementation measures IA-1 through IA-~~610~~ in ~~Section~~ Chapter 7.

Table ES-4. Continued

Alternative 1	LRA Reuse Alternative Implementing Actions
Air Quality	
Impacts. Construction activities would result in PM_{10} and ROC emissions that would be significant and unmitigable. Operational air quality impacts would be significant and unmitigable. **Mitigation.** Measures AQ-1, AQ-2, AQ-3 and AQ-4 as identified in Table ES-3.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation.** No additional mitigation.
Noise	
Impact. The proposed extension of Tustin Ranch Road could expose existing residences to noise levels greater than 65 dB CNEL. Some existing on-site housing units planned for reuse would experience noise levels greater than 65 dB CNEL. **Mitigation.** Measures N-1, N-2, ~~and~~ N-3, and N-4 in Table ES-3.	**Impact.** No additional impacts beyond those identified for Alternative 1. **Mitigation.** No additional mitigation.

measures would not apply. (Only population and housing are addressed because other socioeconomic issues are not required by CEQA.) Generally, physical impacts would be identical and no new mitigation measures would be necessary. Traffic/circulation measures that are pbasing and implementation triggers tied to the detailed Specific Plan are provided in addition to those previously identified for Alternative 1. In the case of land use and aesthetics, previously identified mitigation measures would be enacted by the Implementing Actions, therefore significant impacts would be avoided.

ES-13 AGENCY COORDINATION

Federal, state, and local agencies were consulted prior to and during the preparation of this revised EIS/EIR. Agencies were notified of plans for closure and disposal activities by mailings; by scheduled public meetings associated with the reuse planning process; by publication of an NOI/NOP announcing preparation of a Draft EIS/EIR, as required by NEPA and CEQA; by publication of a second NOP related to the LAMBRA application; by a public scoping meeting; and by public hearing on the initial Draft EIS/EIR. The agencies' viewpoints were solicited with regard to activities within their jurisdiction.

CHAPTER 1.0
PURPOSE AND NEED

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CHAPTER 1.0
PURPOSE AND NEED

This joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) addresses the disposal, by the Department of the Navy (DON), of federal properties within the Marine Corps Air Station (MCAS) Tustin, and the subsequent reuse of those federal properties and adjacent privately owned properties. This document has been prepared jointly by DON (federal lead agency) and the City of Tustin (local lead agency) in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. § 4332 (1994)); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 C.F.R. §§ 1500-1508); DON regulations implementing NEPA (32 C.F.R. Part 775); U.S. Marine Corps Environmental Compliance and Protection Manual (Order P5090.2); and the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, § 21000 et seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, § 15000 et seq. (1998)).

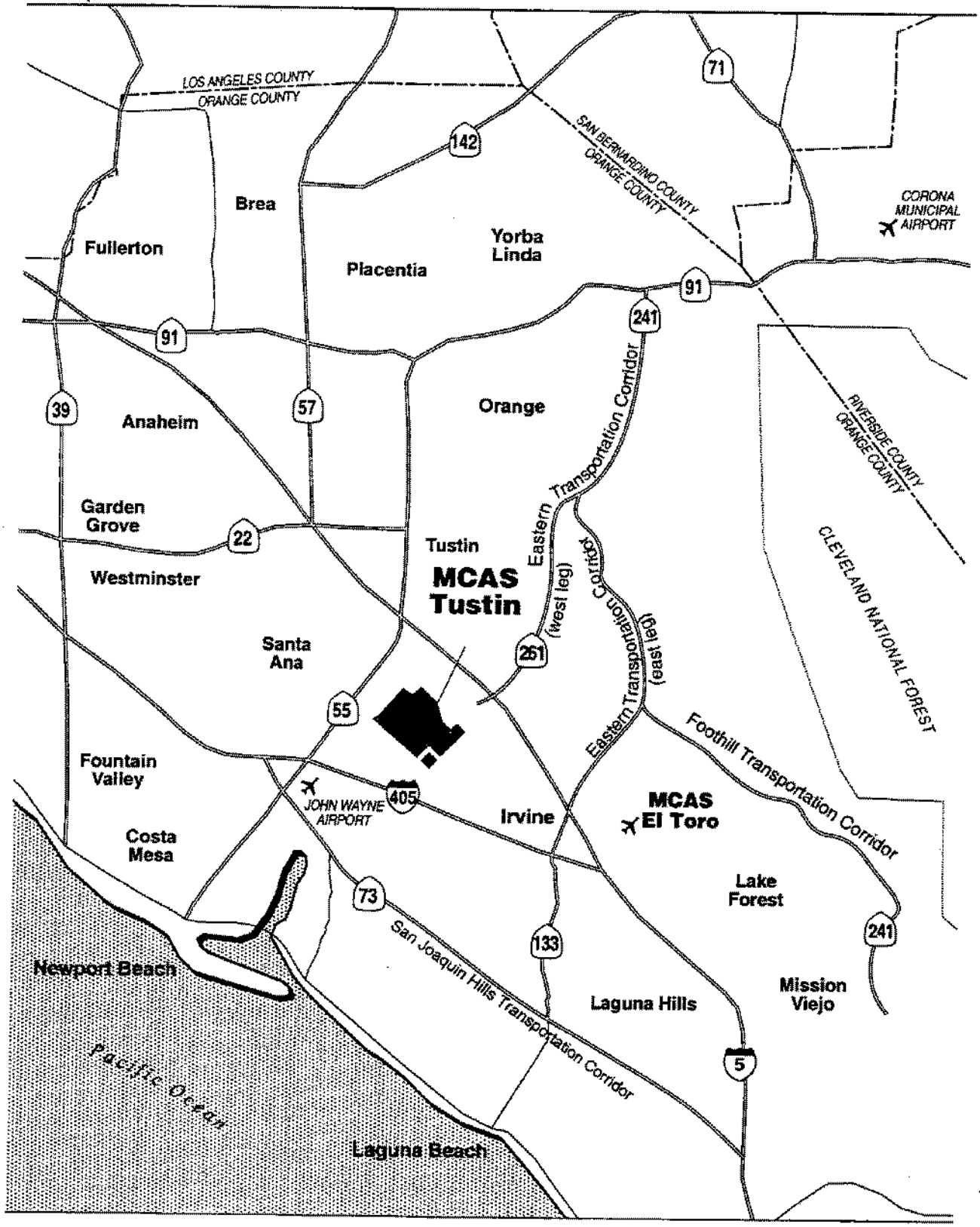
1.1 FEDERAL ACTION

DON is one of the military departments within the Department of Defense (DoD). The Marine Corps is a service within DON. Therefore, while MCAS Tustin is a Marine Corps facility, the Assistant Secretary of the Navy will take the action, via a Record of Decision (ROD), regarding disposal of the MCAS Tustin surplus property.

1.1.1 Purpose and Need

In accordance with the Defense Base Closure and Realignment Act (DBCRA) (10 U.S.C. § 2687 note), Congress has directed DoD to reduce and realign U.S. military operations as deemed appropriate and necessary. Consequently, MCAS Tustin will close in July 1999, and DON is in the process disposing of the property in accordance with applicable laws and regulations. The location of MCAS Tustin is shown in Figures 1-1 and 1-2.

The purpose of the proposed federal action is to dispose of surplus federal property at MCAS Tustin for subsequent reuse. DBCRA has established procedures for closing and realigning military installations. Requirements related to disposal of surplus property include:



No Scale

Figure 1-1
Regional Map

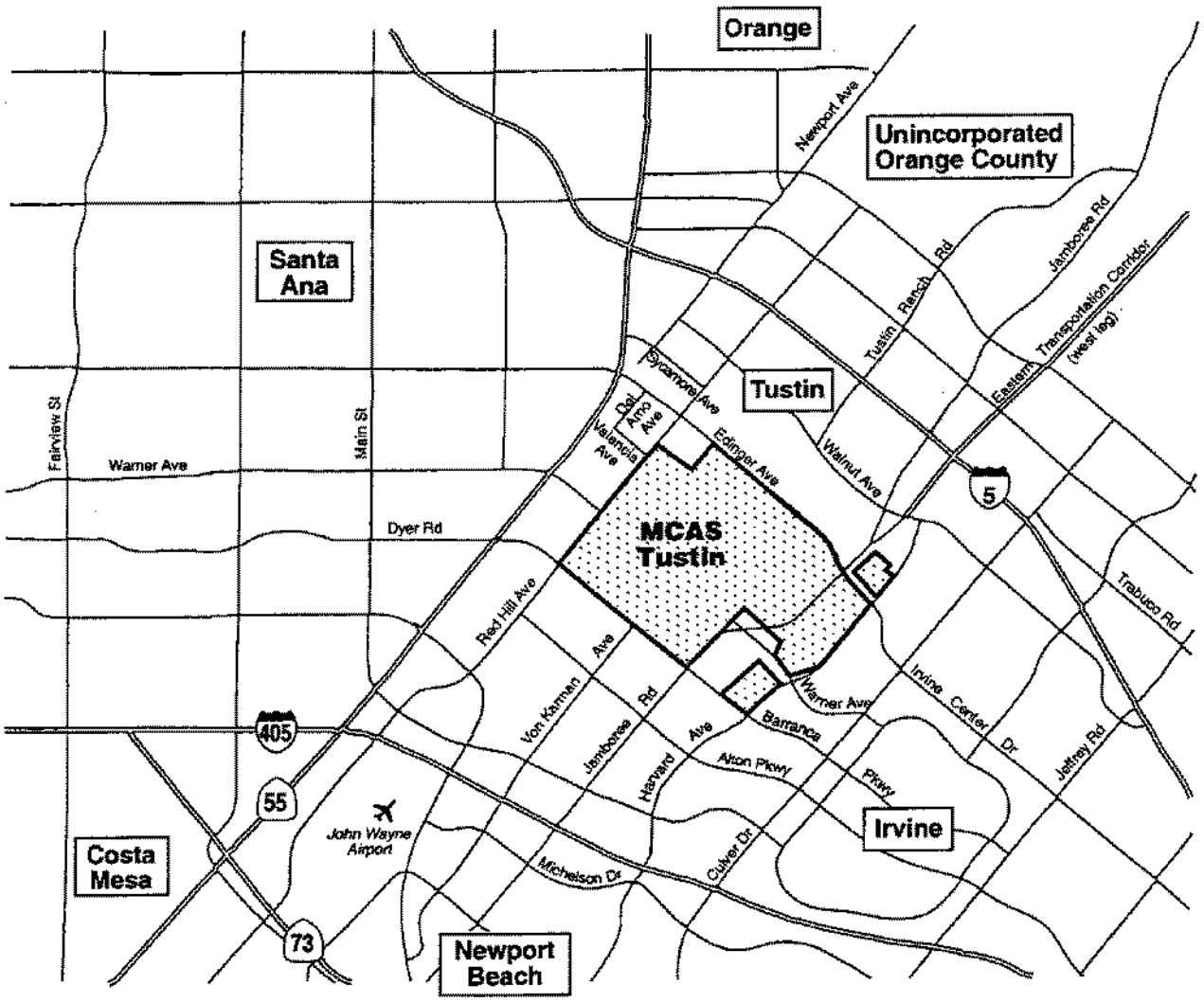


Figure 1-2
Vicinity Map

- compliance with NEPA;
- environmental restoration of the property as soon as possible, with funds made available for such restoration;
- consideration of the community's reuse plan prior to disposal of the property by DON; and
- compliance with specific federal property disposal laws and regulations.

1.1.2 Marine Corps Properties

MCAS Tustin, totaling approximately 1,602 acres of real property, is comprised of three separate properties (Figure 1-3). The main station southwest of Edinger Avenue, is developed with operations, maintenance, and support facilities for helicopters; military housing; recreational facilities; administration and support facilities; and agricultural operations. A discontiguous area of military housing is located north of the Harvard Avenue/Barranca Parkway intersection. Finally, an undeveloped site originally planned for military housing is located northeast of Edinger Avenue, adjacent to Harvard Avenue. Of the total acreage, approximately 1,585 acres have been determined to be surplus to the needs of the federal government. Excluded from the determination of surplus property is an approximately 17-acre area adjacent to Barranca Parkway that will remain in federal ownership for continued use as an Army Reserve Center (Figure 1-3). Therefore, the federal action is disposal of approximately 1,585 acres of MCAS Tustin.

MCAS Tustin is located within the boundaries of two local jurisdictions (Figure 1-3). The majority, or approximately 1,507 acres, is located within the City of Tustin. The balance, or approximately 95 acres, is situated within the City of Irvine. A portion of the northwest boundary of MCAS Tustin is adjacent to the City of Santa Ana.

1.2 LOCAL ACTION

The City of Tustin is the local lead agency under CEQA, and the Tustin City Council may certify the EIS/EIR. The Tustin City Council may use the certified EIS/EIR to implement a civilian reuse plan, i.e., amend the City of Tustin General Plan, amend its zoning ordinance, and adopt a Specific Plan, and to amend the County of Orange Master Plan of Arterial Highways, as well as other discretionary actions. The City of Irvine, whose jurisdiction encompasses a portion of MCAS Tustin, supports the City of Tustin acting as the sole local lead agency. (Appendix E contains a copy of the May 1994 letter from Irvine to Tustin formalizing this agreement.) Under CEQA statute, the City of Irvine is considered a responsible agency (Cal. Code Regs., Title 14, § 15381). As a responsible agency, the City of Irvine would implement the project in the 95-acre portion within its jurisdiction and would

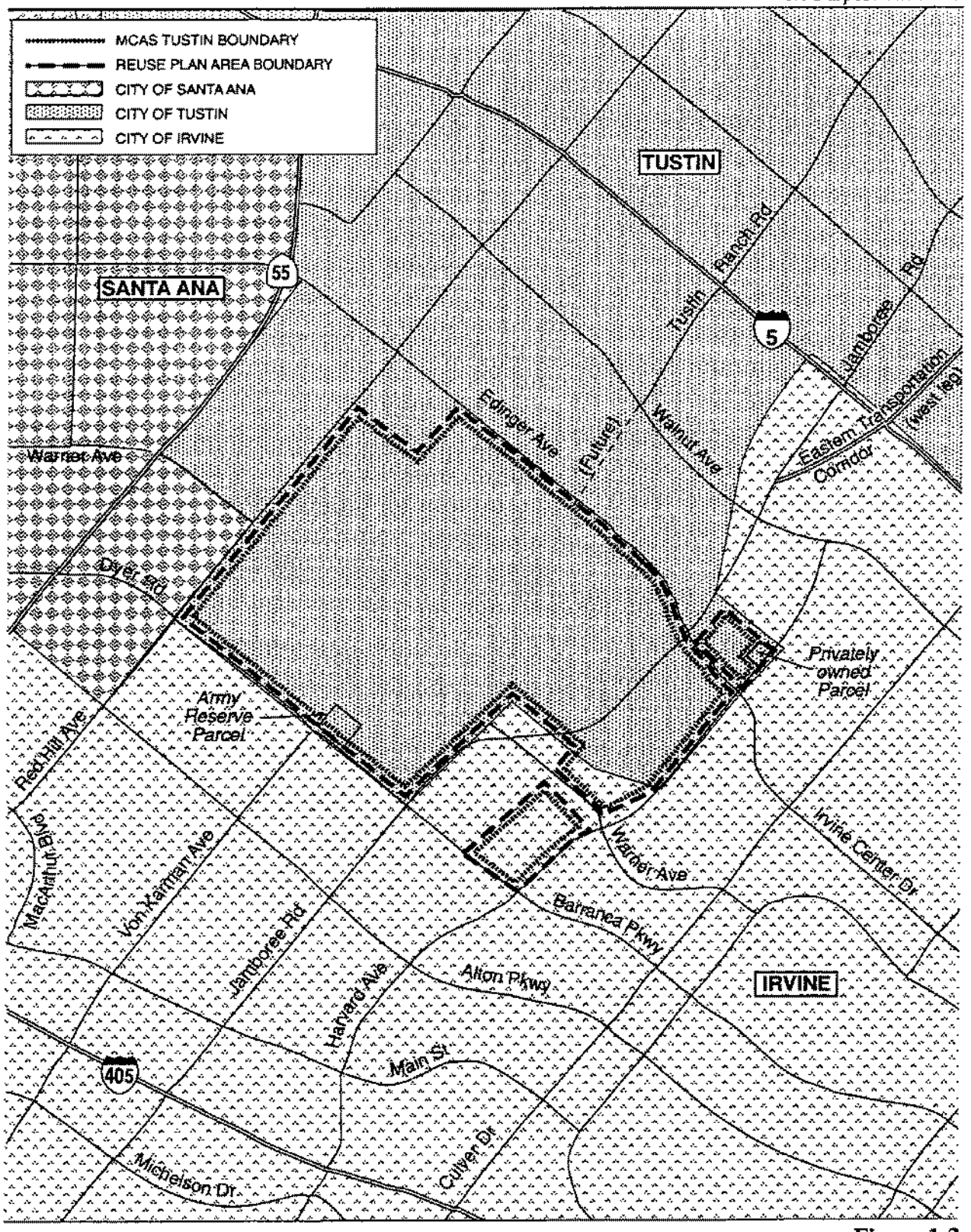


Figure 1-3
Reuse Plan Area

No Scale

need to certify the EIS/EIR for any discretionary actions to implement the civilian reuse plan (Cal. Code Regs., Title 14, § 15096). Implementing the project would include amending the City of Irvine General Plan and adopting a Specific Plan, as well as other discretionary actions.

The purpose of and need for the local action is to reuse MCAS Tustin surplus property to offset the negative socioeconomic effects caused by Base Realignment and Closure (BRAC), and to reuse these properties under an economically viable and balanced reuse plan that will provide housing and employment opportunities, solve existing community circulation and recreation parkland deficiencies, and generate sufficient revenue (property tax, sales tax or others) to support the investment in infrastructure required to improve the site for civilian purposes.

To maximize efficiency of the reuse planning process, the City incorporated two other parcels into the MCAS Tustin Reuse Plan. The Army Reserve parcel, although not part of the disposal action, was incorporated into the Reuse Plan to provide zoning and general plan designations for this parcel should it become available for disposal in the future. A privately owned, approximately four-acre parcel, bounded by the Tustin city limits and MCAS Tustin in the vicinity of Harvard Avenue and Edinger Avenue, has also been included. Incorporating this otherwise "isolated parcel" was a logical extension of the reuse planning process. Figure 1-3 illustrates the boundaries of MCAS Tustin and the slightly larger reuse plan area.

For purposes of this EIS/EIR, the MCAS Tustin reuse plan area is defined as the entire Marine Corps property (surplus land and Army Reserve parcel) plus the privately owned, adjacent parcel. The acreage of the reuse plan area is shown in Table 1-1. The reuse planning process and the Reuse Plan itself are detailed in a document prepared by the City of Tustin entitled *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and the *MCAS Tustin Specific Plan/Reuse Plan Errata (Errata)* (City of Tustin 1998).

The Housing Element of the Tustin General Plan (City of Tustin 1994) identifies a near-term growth need of 2,085 dwelling units in Tustin. More long-term projections are contained in *Orange County Projections 1996* (OCP-96 Modified). This document projects a growth need of more than 6,300 dwelling units in Tustin by the year 2020. OCP-96 Modified for Irvine identifies a projected need of more than 12,300 units by 2020.

Table 1-1
Reuse Plan Area Approximate Acreage by Jurisdiction

Property	City of Tustin	City of Irvine
MCAS Tustin Surplus Property	1,490	95
Army Reserve Parcel	17	n/a
Privately owned Parcel	4	n/a
Total by Jurisdiction	1,511	95
Grand Total	1,606	

Note: All acreage figures are estimates only. Figures in the text and table are rounded for discussion purposes. More detailed numbers (tenths of an acre) are provided in the *MCAS Tustin SpecificPlan/Reuse Plan* (1996b) and *Errata* (1998).

The Tustin General Plan Land Use Element also contains specific goals reinforcing the need to balance land uses to accommodate housing, commercial and industrial land, open space, and community facilities and services; provide for new development that is compatible with surrounding land uses; and promote economic prosperity.

Real estate market studies of future demand for housing and nonresidential uses (employment opportunities) for the MCAS Tustin reuse plan area were prepared as background documents during the reuse planning process. The resulting report is entitled *Market Demand Forecasts for Reuse of the Tustin Marine Corps Air Station Properties* (City of Tustin 1993c). The primary market area was defined as a five-city area comprised of Tustin, Irvine, Santa Ana, Orange, and Costa Mesa. (Irvine, Santa Ana, and Orange are contiguous with Tustin, and Costa Mesa is contiguous with Irvine and Santa Ana.) Based on forecasts of growing population and higher technological economic activity, the market analysis suggested a strong demand for residential development with supporting commercial development. It also identified demand for commercial office space, more research and development space (instead of traditional industrial space), and some visitor accommodations (e.g., hotels) if linked to a strong business, educational, or medical service facility or a recreation amenity such as a golf course. Additionally, the market demand study identified an area termed an "Orange County Triangle" (roughly bounded by John Wayne Airport, MCAS Tustin, and MCAS El Toro) as an area potentially advantageous for concentrating business and educational activities that would experience higher economic activity for the next 15 or 20 years.

Local traffic engineering and planning consultants have identified circulation deficiencies in the existing transportation system (City of Tustin 1993a). Specifically, MCAS Tustin creates a discontinuity with respect to north-south and east-west roads. Without the Air Station, it is likely that

connections would have been made between Tustin Ranch Road and Von Karman Avenue, Valencia Avenue and Moffett Avenue (this actually exists as an on-Station roadway link), and the southeast and northwest sections of Warner Avenue. Without these links, traffic is forced to utilize adjacent roads such as Red Hill Avenue and Jamboree Road. Red Hill Avenue, southwest of Irvine Boulevard, currently operates below an acceptable level of service (LOS).

The Tustin General Plan (1994) contains a Conservation/Open Space/Recreation Element that, among other things, identifies the need for planned park and recreation facilities to support the recreational needs of Tustin's population. The City's standard for parks is three acres of parkland per 1,000 persons (City of Tustin 1994a). Based on that standard there was a 109-acre shortfall identified in the 1994 General Plan. While parkland continues to increase due to ongoing development, population has increased as well. At present, the city still has a parkland shortfall in excess of 100 acres (City of Tustin 1997a). The City of Irvine's Parks and Recreation Element also guides the development and maintenance of a network of recreational facilities in conjunction with development to ensure adequate facilities for the population (City of Irvine 1995a). The element does not identify a parks shortage in the City of Irvine.

1.3 OVERVIEW OF MCAS TUSTIN

1.3.1 Location and History

DON property provided facilities and support for blimps and helicopters since World War II. With the urbanization of Orange County over the past 50 years, the Air Station has become an island of military land use within a highly urbanized location. MCAS Tustin is generally bounded by single-family residential uses and a business park to the northeast, light industrial and research/ development uses to the northwest, light industrial and commercial uses to the southwest, and a combination of single-family and multi-family residential uses to the southeast.

Location

MCAS Tustin is located in southern California near the center of Orange County. The Air Station is located within two municipal jurisdictions (Tustin and Irvine) and is adjacent to a third municipal jurisdiction (Santa Ana) (Figure 1-3). The Air Station is located in an area bounded by four freeways: State Route 55 (SR-55), Interstate 5 (I-5), State Route 133 (SR-133), and Interstate 405 (I-405). The major roadways bordering the site include Red Hill Avenue on the northwest, Edinger Avenue/ Irvine Center Drive on the northeast, Harvard Avenue on the southeast, and Barranca

Parkway on the southwest. Jamboree Road bisects the base at the southeastern edge. The western leg of the Eastern Transportation Corridor (ETC) State Route 261 (SR-261) extends northeasterly from Jamboree Road, from a point just north of the MCAS Tustin site. This segment opened in February 1999. The eastern leg of the ETC, located southeast of MCAS Tustin, opened to traffic in October 1998.

John Wayne Airport is located about two miles to the southwest. A planned Metrolink Commuter Rail station that will provide daily passenger service to employment centers in Orange, Los Angeles, Riverside, and San Diego counties is under construction immediately northeast of the Air Station.

History

MCAS Tustin was originally commissioned in 1942 as a Navy lighter-than-air (LTA) base to support Navy reconnaissance blimps that protected the southern California coast during World War II. The LTA base was decommissioned in June 1949. In 1951, the base was reactivated as a Marine Corps Air Facility for helicopters and has operated continuously since that time. Designated as MCAS Tustin in April 1985, the Air Station was the main West Coast facility for training and operations involving medium- and heavy-lift capable helicopters.

The majority of MCAS Tustin was recommended for realignment and closure by the 1991 BRAC Commission. Family housing and related personnel support facilities were to be retained in support of MCAS El Toro. President Bush subsequently approved and the One Hundred First Congress accepted the BRAC Commission recommendation. The 1993 BRAC Commission reconsidered and eventually reconfirmed its earlier recommendation but modified relocation facilities for helicopters and also recommended closure of MCAS El Toro. This action resulted in the addition of the remainder of MCAS Tustin to the closure recommendation. President Clinton approved and the One Hundred Third Congress accepted the recommendation. The 1995 BRAC Commission again modified realignment locations. President Clinton and the One Hundred Fifth Congress accepted the recommendations. The 1995 BRAC Commission again modified realignment locations.

In July 1992, DoD, Office of Economic Adjustment (OEA) approved the City of Tustin, as the Local Redevelopment Authority (LRA) for MCAS Tustin. The LRA is responsible for preparing a Reuse Plan for submittal to DON and to the U.S. Department of Housing and Urban Development (HUD). Although the 1993 BRAC action enlarged the closure area to encompass the entire Air Station, including previously excluded portions within the City of Irvine, the designated LRA remained unchanged. The City of Tustin had been working with the City of Irvine in the reuse planning

process since the 1991 BRAC action. The present Reuse Plan includes the LRA's recommended use of the property to be disposed. As discussed previously, the Reuse Plan submitted to DON and HUD includes not only reuse of surplus federal properties, but also the Army Reserve Center, and an approximately four-acre, privately owned parcel.

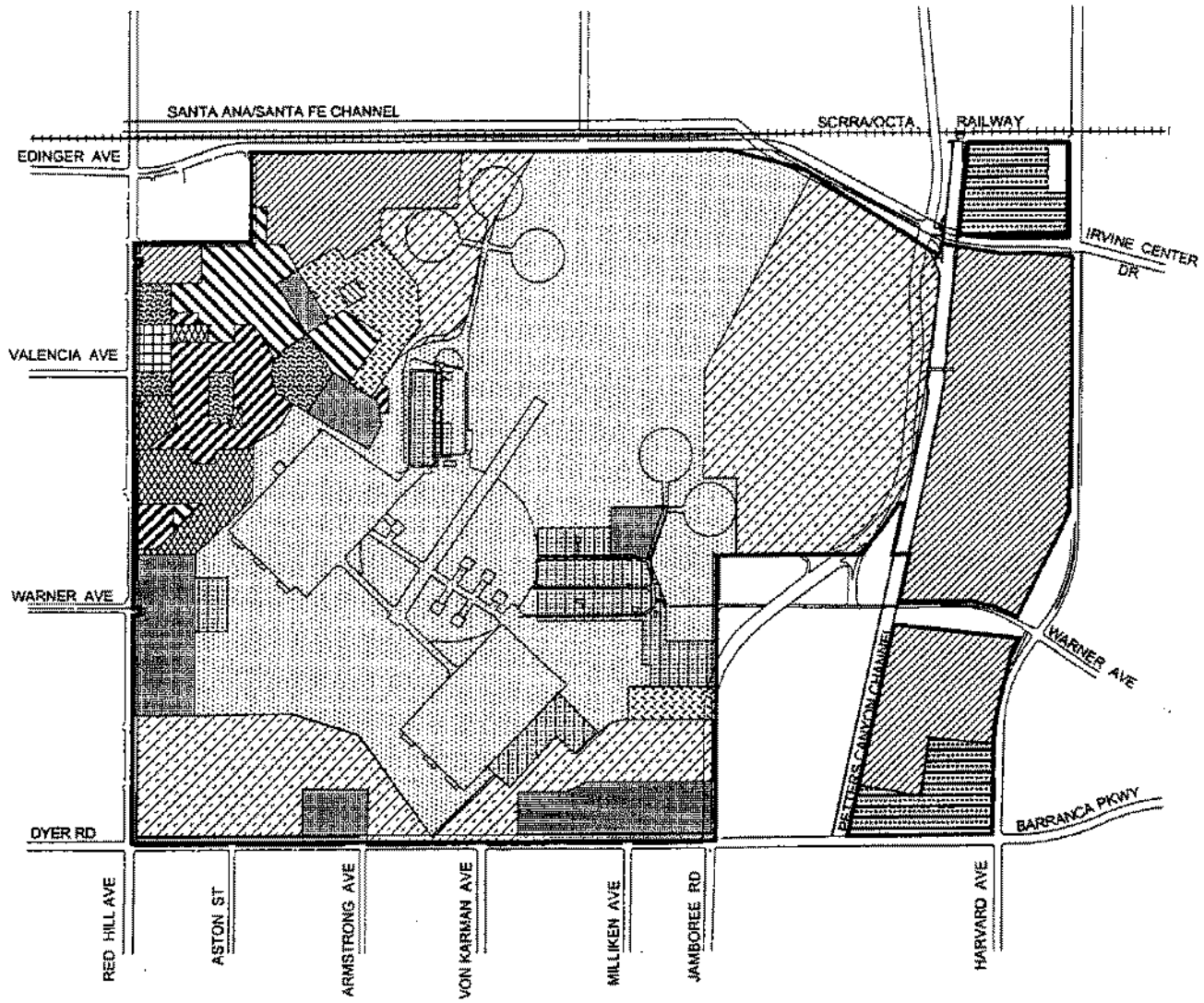
1.3.2 Disposal of Marine Corps Properties

The disposal process encompasses several sequential actions, further described below. The federal government is responsible for environmental cleanup and disposal of the property.

Description of Properties Subject to Disposal

There are three separate properties subject to disposal. The largest is the area within the fenced main station, with the exception of the approximately 17-acre Army Reserve Center. The other two areas are the existing housing area located between Barranca Parkway and Warner Avenue at Harvard Avenue, and the undeveloped area located at Edinger Avenue and Harvard Avenue. The four-acre privately owned area is contiguous with the latter area. The main station of MCAS Tustin includes airfields, training grounds, maintenance and storage facilities, medical/ dental facilities, administrative facilities, housing, community support facilities, recreation facilities, and agricultural fields (see Figure 1-4 and Section 3.1, Land Use). There are more than 250 military structures and facilities (excluding housing) on the Air Station. The two largest single structures are the blimp hangars, which are over 175 feet high and over 1,000 feet long. These wood-frame structures were built in 1942 and are listed on the National Register of Historic Places. The airfields include circular concrete pads for blimp and helicopter use, and a linear runway for helicopters to practice tactical maneuvers. There are no fixed-wing aircraft at MCAS Tustin and runway facilities are not adequate for use by traditional fixed-wing aircraft.

Housing consists of 1,537 attached family housing units in two clusters, and 966 barrack units. The majority of family housing (over 80 percent) is located at the southeastern edge of the Air Station between Jamboree Road and Harvard Avenue. This housing area is separated from the primary administrative, recreation, and support facilities by the airfield and by Jamboree Road, which bisects MCAS Tustin. The remaining family housing is located in the northwestern corner, adjacent to Edinger Avenue, and adjacent to recreation and other support facilities. Bachelor housing is clustered northwest of the airfield, and is interspersed with the supporting administrative, recreation, community and medical/dental structures just east of Red Hill Avenue. The grounds of the main station are landscaped (except for the airfield) and numerous streets provide internal access through



Source: MCAS Tustin Masterplan, Figure 5-4, June 1989; Aerial Photograph 1994.
Base map: HNTB 1999
Note: The cultivated fields do not coincide directly with the land uses shown in the Masterplan.

500 0 1000 2000 ft

Figure 1-4
Existing Facilities

the station. The parcel located northeast of Edinger Avenue was originally planned for military housing but is currently undeveloped due to this BRAC action.

Predisposal Actions

The Marine Corps' predisposal actions include caretaker activities and site cleanup operations.

Caretaker Activities

MCAS Tustin is currently in caretaker status (inactive status under DON control). Approximately 10 workers are assigned to perform caretaker activities. Specific caretaker activities include the following:

- Assume command responsibility for the closed Air Station.
- Maintain structures and equipment to assure they are weather tight and to facilitate planned reuse.
- Assure fire protection and police services are maintained.
- Manage physical security services.
- Manage facility maintenance programs.
- Administer requirements for caretaker contracts, memorandums of understanding, inter-service agreements, or cooperative agreements.
- Manage personal property and control of all keys.
- Monitor adherence to lease and license requirements.
- Provide official interface with the LRA, the local community, and onboard lessees.
- Manage caretaker safety services.
- Maintain utility systems and services at a minimal level as necessary to provide support as required for caretaker and lessee operations.

Cleanup of Contaminated Sites

DON is in the process of completing environmental cleanup activities in response to past releases of hazardous substances, pollutants, contaminants, or hazardous solid wastes posing a threat to human health and the environment. DON cleanup efforts are in support of the transfer and reuse of the parcels discussed in this EIS/EIR in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. § 9601 et seq.).

Lease Activities

DON currently leases out approximately 530 acres of MCAS Tustin for agricultural use. Of this land, approximately 360 acres are farmed with irrigated row crops. Historically, approximately 170 acres located to the north, east, and south edges of the airfield have been operationally constrained due to noise and crash hazard potential. This acreage is currently leased for weed control; there is no history of agricultural use of this area while under military control.

Disposal Process Requirements

This section briefly highlights some of the key laws and regulations that guide BRAC disposal and reuse. An expanded discussion is provided in Appendix B.

The Federal Property and Administrative Services Act of 1949 (40 U.S.C. 471 et seq.) establishes methods for the disposal of federal property and are implemented by the Federal Property Management Regulations (FPMR) (41 C.F.R. Part 101-47). FPMR require that DON notify other military departments and DoD entities, as well as other federal agencies, that a property or facility is "excess." Any division of DoD or other federal agencies that express an interest in the site would be given consideration before the property was determined to be "surplus." Once property transfer has occurred, federal restriction on reuse can only be imposed where it is authorized by statute.

On December 6, 1991, DON issued a Notice of Availability (NOA) for the majority of MCAS Tustin to 38 DoD entities indicating that the property was excess to the needs of DON. On October 30, 1992, an NOA was issued to 197 federal agencies. A request from the Department of the Army for a parcel to be utilized for an Army Reserve Center was recommended for approval by the LRA and was later approved. Two other responses were received from other federal agencies and both were subsequently withdrawn.

On October 13, 1993, a second NOA was issued to 31 DoD entities and 124 federal agencies, indicating that the remaining property was also excess to the needs of DON. Only one response was received and it was withdrawn. DON declared the entire MCAS Tustin property surplus to the needs of the United States on December 31, 1997.

1.4 OVERVIEW OF LOCAL JURISDICTIONS

1.4.1 Location

City of Tustin

The City of Tustin encompasses approximately 11 square miles and is located in the central portion of Orange County (Figures 1-1 and 1-2). The city is bounded by the City of Santa Ana to the west, the City of Irvine to the south and southwest, an unincorporated portion of the County of Orange to the northwest and northeast, and the City of Orange to the extreme north. MCAS Tustin is located in the southwestern portion of the City of Tustin. The City of Tustin is bisected by two major freeways: SR-55, which generally runs north and south, and I-5, which runs northwest to southeast.

City of Irvine

The City of Irvine lies to tbe south of the City of Tustin within the central area of Orange County (Figures 1-1 and 1-2). The city covers approximately 46 square miles and is surrounded by the City of Santa Ana to the northwest, the City of Costa Mesa to the west, the City of Newport Beach to the southwest, an unincorporated area of the County of Orange to the south and northeast, and the City of Lake Forest to the east. The approximately 95-acre portion of MCAS Tustin within Irvine is located in the central-western section of the City of Irvine. The City of Irvine is traversed by ~~four~~ numerous freeways: SR-55, SR-73, SR-133, SR-261, I-5, and I-405.

1.4.2 History and Background

City of Tustin

The City of Tustin was incorporated in 1927, making it the third oldest city in Orange County. At the time of incorporation, it had a population of approximately 900 residents. Originally, the city was primarily an agricultural community with several successful core businesses; a bank, a lumber company, a hardware store, a feed store, a juice company, and several citrus packing houses. Development was slow until 1942, when the U.S. Navy built an LTA base to protect the west coast during World War II. By the 1960s, agricultural production had diminished and there was a pusb for urban development in the area. During this period, the size of the city increased through annexations and the population climbed dramatically (from 2,000 in 1960 to 21,000 in 1970). Urban development replaced agricultural fields and agricultural businesses with a mixture of land uses. The

City of Tustin is now developed except for portions of Tustin Ranch. Tustin Ranch is a 1,746-acre planned community at the eastern boundary of the City of Tustin and includes a mixture of residential, commercial, and public uses. Approximately 75 percent of that project has been developed.

City of Irvine

The City of Irvine, located partially within what is known as the Irvine Ranch, was incorporated in 1971 and was historically (prior to 1894) used for sheep grazing, and then for agricultural production. Generally, crops have since given way to urban development, with numerous bedroom communities, the University of California Irvine, industrial parks (including the Irvine Business Complex and Spectrum Industrial Park), and supporting retail and services. There are large areas, particularly to the south, that are hilly and have not been fully developed. The San Joaquin Hills Transportation Corridor State Route 73 (SR-73) was completed in 1998 and defines a portion of the city's southern boundary.

1.4.3 Reuse Process

In light of the recognized need for housing and employment opportunities, the need to correct existing circulation and recreation deficiencies, and the need to generate sufficient revenue to support the investment in infrastructure, the City of Tustin, acting as the LRA, formulated a proposed Reuse Plan for the MCAS Tustin reuse plan area. This reuse plan area is the LRA Reuse Alternative. The City of Tustin is the majority jurisdiction and has taken the lead role in reuse planing. Tustin's role as the LRA was confirmed by DoD in July 1992. The City of Irvine, whose jurisdiction encompasses approximately six percent of the reuse plan area, has a representative on the Base Closure Task Force established by the LRA.

The Reuse Plan proposes reuse with Residential uses; Transitional/Emergency Housing; an employment center; a Learning Village for education, training, and social service assistance; a regional commercial center; local commercial facilities near residential neighborhoods; recreation facilities including an Urban Regional Park, Community Park, two Neighborhood Parks, and a Golf Village; and a Community Core. The Community Core would occur in the central portion of the site and would maintain flexibility for future large-scale, mixed-use development.

Additionally, the City of Tustin prepared a proposed Specific Plan with detailed planning, policies, regulations, implementation strategies, and procedures to guide future development within the reuse

plan area into the next century, assuming selection of the LRA Reuse Alternative. A joint planning document has been prepared entitled *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998). The Reuse Plan that was submitted to DON and HUD is comprised of Chapters 1, 2 (excluding 2.17), and 5. The Reuse Plan is a document related to the federal action on disposal and is the subject of the NEPA evaluation. The entire document of five chapters is considered the Specific Plan. Adoption of the proposed Specific Plan would necessitate amendments to the general plan and zoning ordinance. These legislative actions would be necessary for both the City of Tustin and City of Irvine because the reuse plan area and proposed Specific Plan pertain to both jurisdictions. The Specific Plan is the subject of CEQA evaluation only because it is a local, not federal, implementing action.

1.5 USE OF AN INTEGRATED DOCUMENT

The purpose of this integrated EIS/EIR is to assess the potential significant environmental impacts of disposal of the federal property, MCAS Tustin, and the subsequent reuse of that federal property and a small parcel of adjacent, privately owned property. Decisions regarding which bases to close, relocate, or realign are exempt from NEPA documentation requirements under the DBCRA (10 U.S.C. § 2687 note). However, once the decision has been made to close, relocate, or realign a specified base, DON is required to prepare appropriate NEPA documentation evaluating the environmental effects of the disposal and subsequent reuse of the property. The City of Tustin, as the local lead agency, is required under CEQA to evaluate the environmental effects of implementing reuse plans. In this case, the City of Tustin could also take action on adoption of ~~an implementing~~ a series of actions to implement the proposed LRA Reuse Alternative, including a specific plan, which is subject to CEQA only. Section 1.5.1 addresses the agency uses of the joint NEPA/CEQA analysis of the reuse plan and Section 1.5.2 discusses the agency uses of the CEQA-only analysis of the ~~specific plan~~ implementing actions.

Implementation of the LRA Reuse Alternative would be accomplished through the adoption of the proposed Specific Plan, amendments of the Tustin and Irvine general plans and zoning ordinances, amendment of the County of Orange Master Plan of Arterial Highways, designation for MCAS Tustin by the California Trade & Commerce Agency under the LAMBRA Act, and designation of the reuse plan area as a redevelopment project. Because the Specific Plan is directly related to local implementation of one reuse alternative and is not related to the federal action of disposal, the CEQA analysis of potential direct and indirect impacts associated with the Specific Plan are contained in a separate chapter within this EIS/EIR (Chapter 7).

1.5.1 Reuse Plan (NEPA/CEQA Analysis)

DON will use this EIS/EIR in its consideration of disposal options of Marine Corps property at MCAS Tustin. As required under CEQ Regulations (40 C.F.R. § 1502.14 (e)), a preferred alternative is identified in Chapter 2. For purposes of the NEPA analysis, direct environmental consequences or impacts are those associated with DON's disposal action and the No Action Alternative; indirect environmental impacts are associated with the City of Tustin's reuse of federal property; and cumulative environmental impacts are associated with the City of Tustin's use of federal and private property in the reuse plan area, as well as with other projects in the area.

DON will consider all environmental impacts identified in Chapters 4 and 5 and Sections 6.1, 6.2, 6.3, 6.6, and 6.7 of this EIS/EIR in its decision process before issuing a ROD. Following disposal, no additional NEPA review by DON will be required.

The City of Tustin, acting as the LRA, will use this EIS/EIR in its consideration of reuse alternatives for the reuse plan area. The City of Tustin and City of Irvine may certify this EIS/EIR and use the document to select and implement a civilian reuse within each of their respective jurisdictions. As required under CEQA, (Cal. Code Regs., Title 14, § 15126.6 (e)(2), 1999) an environmentally superior alternative is identified in Chapter 2. For purposes of the CEQA analysis, direct and indirect environmental impacts are those associated with the reuse alternatives and the No Action Alternative, and cumulative environmental impacts are those associated with other past, current, and probable future projects in the area. Should implementation of an alternative include significant unavoidable environmental impacts, the implementing agency will be required to adopt a statement of overriding considerations (Cal. Code Regs., Title 14 § 15093). A mitigation monitoring and reporting program will be required for reporting or monitoring mitigation measures that are adopted and become conditions of project approval.

1.5.2 Specific Plan Implementing Actions for LRA Reuse Alternative (CEQA-only Analysis)

This document also serves as a Program EIR for the ~~Specific Plan~~ series of actions that would implement the LRA Reuse Alternative as defined by CEQA (Cal. Code Regs., Title 14, § 15168). As such, it is intended to be used as the CEQA compliance document for the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996) and *Errata* (City of Tustin 1998), all necessary general plan and zoning ordinance amendments in the City of Tustin and the City of Irvine, and for all public and private actions taken pursuant to, or in furtherance of, the Specific Plan, which will be deemed a single project. These actions are described in Chapter 7. Additional future CEQA analysis beyond

this program EIR shall be conducted, however, if one or more of the following events occurs as listed in Cal. Pub. Res. Code § 21166:

> (a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report;
>
> (b) Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report; or
>
> (c) New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available.

CEQA environmental review conducted for future individual development projects that implement the *MCAS Tustin Specific Plan/Reuse Plan* will be tiered to the program EIR to the extent this analysis remains adequate for such purposes. CEQA Guidelines (Cal. Code Regs., Title 14, § 15152 (d)) establishes:

> Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or a negative declaration on the later project to effects which:
>
> (1) Were not examined as significant effects on the environment in the prior EIR; or
>
> (2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means.

1.6 DOCUMENT ORGANIZATION

This EIS/EIR bas an Executive Summary and 11 chapters. The title and contents of each chapter are provided below.

The Executive Summary, provides an introduction to the proposed action and includes a background of the federal and local requirements and the environmental process. The section has a brief discussion of the three reuse alternatives and highlights the potential significant environmental consequences of each, as well as the Specific Plan. The summary also addresses cumulative impacts and discusses other NEPA and CEQA considerations.

Chapter 1, Purpose and Need, provides an overview of the reasons for the disposal of federal property and the subsequent reuse. It includes a description of the EIS/EIR contents and approach, a description of the decision process for disposal of federal property, an overview of the reuse planning process, and the public involvement process used to solicit input on the potentially significant environmental impacts.

Chapter 2, Alternatives Considered, provides a description of the various alternative federal disposals actions considered, together with a summary of the planning process leading to development of the MCAS Tustin Reuse Plan. This chapter describes in detail each of the alternatives. The following alternatives are evaluated in this EIS/EIR:

- DON Disposal/Alternative 1 (which is the LRA Reuse Alternative);
- DON Disposal/Alternative 2;
- DON Disposal/Alternative 3; and
- No Action/No Project Alternative.

Chapter 3, Affected Environment, presents a description of the baseline environmental and socioeconomic conditions that may be affected by the proposed action. The discussion also includes an identification of the region of influence applicable to each resource area.

Chapter 4, Environmental Consequences, describes the potential significant environmental consequences, or impacts, of the disposal of DON property and reuse of MCAS Tustin and adjacent properties (reuse plan area). For NEPA purposes, direct impacts of disposal and indirect impacts of reuse are evaluated, and for CEQA purposes, direct and indirect impacts of disposal and reuse are evaluated. Mitigation measures are identified for any impact determined to be significant. The purpose of this chapter is to provide the public, interested agencies, and decision-makers with a clear understanding of the environmental impacts of disposing (or not disposing) or adopting (or not adopting) any of the reuse alternatives.

Chapter 5, Cumulative Projects and Impacts, addresses the impacts that would result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions causing related impacts. Pursuant to recent changes in CEQA, cumulative impacts "which do not result in part from the project evaluated" are not considered cumulatively significant (Cal. Code Regs., Title 14, § 15130). Because NEPA does not have a similar approach, the NEPA/CEQA cumulative analyses are clearly separated in this chapter.

Chapter 6, Other Considerations Required by NEPA/CEQA, addresses five topics required by federal and/or state environmental law. These are: (1) identification of any unavoidable adverse impacts to the environment (NEPA/CEQA), (2) short-term uses and long-term productivity (NEPA), (3) identification of irreversible and irretrievable commitments of resources (NEPA/CEQA), (4) analysis of growth-inducing impacts (CEQA), and (5) effects found not to be significant (CEQA). Two pertinent Executive Orders are addressed as well: (1) Executive Order 12898, Environmental Justice in Minority and Low-income Populations (59 Fed. Reg. 7629 (1994)) (NEPA), which requires evaluation of any potential disproportionate adverse impacts on low-income and minority populations; and (2) Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (62 Fed. Reg. 19885 (1997)) (NEPA), which requires assessment of child-specific environmental health risk and safety risk issues, is also addressed.

Chapter 7, LRA Reuse Alternative Implementing Actions, contains four primary subsections: (1) description of the implementing actions, (2) environmental analysis of the effects associated with implementation, (3) analysis of cumulative impacts under CEQA, and (4) evaluation of other considerations required by CEQA. The implementing actions include general plan and zoning code and map amendments for the cities of Tustin and Irvine as well as the County of Orange; adoption of a Specific Plan, designation of MCAS Tustin as a redevelopment project, and designation as a Local Agency Military Base Recovery Area (LAMBRA) by the California Trade and Commerce Agency. The elements of the proposed Specific Plan are described in some detail, including urban design guidelines, land use and development regulations, and neighborhoods. The second subsection provides CEQA impact analysis for the 14 issue areas evaluated in Chapter 4, identifying direct and indirect impacts plus mitigation, as appropriate. The evaluation of socioeconomics is limited to population and housing as they are the only two items required by CEQA. The cumulative analysis and analyses of other CEQA sections are identical in scope to Chapters 5 and 6, but tailored to this CEQA only evaluation. The purpose of this chapter is to provide in-depth environmental analysis of the various actions that would be undertaken to implement the LRA Reuse Alternative. This analysis is not required for the federal lead agency decision regarding disposal, but is required for

the local lead agency to implement their proposed reuse alternative. This is a program-level analysis, and may be used to tier subsequent CEQA analysis.

Chapters 8 through 11 provide background information on consultation with interested and responsible agencies, a list of references, a list of preparers, and a distribution list for the EIS/EIR. Supporting appendices are also provided in this document and in a separate volume of technical appendices.

A Mitigation Monitoring and Reporting Program will be prepared for consideration and adoption by the City of Tustin and other appropriate local agencies at the time actions are taken to implement the selected reuse alternative (Cal. Code Regs., Title 14, § 15097). The Program will ensure compliance with mitigation measures recommended in the EIS/EIR during project implementation.

1.7 RELATED STUDIES

Several other project-related studies have been or are being undertaken in conjunction with ongoing activities at MCAS Tustin. The major planning and restoration programs are summarized below, including a conditions assessment for the blimp hangars, an Environmental Baseline Survey (EBS), an Installation Restoration Program (IRP), and a BRAC Cleanup Plan (BCP).

The two blimp hangars at MCAS Tustin are listed on the National Register of Historic Places and, along with their landing mats, are eligible for listing as an historic district with two discontiguous elements. The condition of the hangars, possible options for adaptive use, and conceptual estimates of the magnitude of costs associated with rehabilitation for continued long-term use, as well as costs for prudent short-term maintenance, have been evaluated in a report entitled *Condition Assessment and Economic Analysis for Reuse of the Historic Blimp Hangars MCAF Tustin* (U.S. Marine Corps 1998).

Known areas of contamination have been identified in EBS reports for MCAS Tustin in 1994, 1997, and 1998. Two major environmental restoration programs (IRP and the Compliance Program) have been established in response to releases of hazardous substances, pollutants, contaminants, petroleum hydrocarbons, and hazardous solid waste at MCAS Tustin. The IRP identifies, assesses, characterizes, and cleans up or controls contaminants from past hazardous waste disposal operations and hazardous material spills. The Compliance Program addresses solid and infectious waste management, surface water/groundwater discharge, underground storage tanks (USTs), aboveground storage tanks (ASTs), oil/water separators (OWS), wasb areas/grease racks, fuel line closure, well

abandonment, asbestos, polychlorinated byphenyls (PCBs), radon, and lead-based paint. A Remedial Investigation (RI) report was prepared for MCAS Tustin in November 1997, describing past and current land use and hazardous substance/waste management practices. In March 1998, a BCP was completed by DON, providing information concerning the status of, and strategies for, the cleanup of MCAS Tustin. In June 1998, a Draft EBS was released by DON, describing the current status of the IRP and Compliance Program as well as the environmental condition of Air Station property relative to the presence of hazardous substances and petroleum products.

1.8 PUBLIC INVOLVEMENT PROCESS

The EIS/EIR process is designed to involve the public in federal and local decision-making. Opportunities to comment on, and participate in, the process were provided during preparation of the initial Draft EIS/EIR in 1998, as outlined in the following sections. Comments from agencies and the public were solicited to help identify the primary issues associated with the federal disposal and proposed reuse of MCAS Tustin. The City of Tustin conducted public meetings and workshops as part of the reuse planning process. The public was encouraged to comment on the various reuse alternatives and to identify the most favorable elements. The public's input, as well as feedback from applicable resource and permitting agencies, will be used to evaluate the alternatives and environmental impacts prior to final decisions.

1.8.1 Scoping Process

The purpose of scoping is to identify potential environmental issues and concerns regarding the disposal and subsequent reuse in the MCAS Tustin reuse plan area. The scoping process for this EIS/EIR included public notification via the *Federal Register*, newspaper ads, direct mail, and a public meeting. The Marine Corps and the City of Tustin considered comments received during the scoping process in determining the range of issues to be evaluated in the EIS/EIR.

In accordance with NEPA requirements, a Notice of Intent (NOI) to prepare a joint EIS/EIR was published in the *Federal Register* on July 5, 1994. A copy of the NOI appears in Appendix C of this document. On June 30, 1994, the NOI was mailed directly to regulatory agencies, local jurisdictions, elected officials, public service providers, school districts, and organizations.

In accordance with requirements under CEQA, a Notice of Preparation (NOP) to prepare a joint EIS/EIR was distributed on June 30, 1994 to regulatory agencies, local jurisdictions, elected officials,

and public service providers, among others. A copy of the NOP appears in Appendix C of this document.

On Marcb 9, 1995, a supplement to the NOP was sent to all previously notified parties to inform them of the City of Tustin's intent to also utilize the joint EIS/EIR for its application to pursue a LAMBRA designation with the California Trade and Commerce Agency. A LAMBRA designation, similar to an Enterprise Zone, allows communities to extend California tax credits to companies locating at a closing military base. A copy of the supplemental NOP is included in Appendix C of this document.

As part of this EIS/EIR scoping process, the Marine Corps and City of Tustin beld a public meeting designed to inform the public about disposal and reuse alternatives and to solicit the public's participation and comments. The scoping meeting was held on July 20, 1994 at the Clifton Miller Community Center in the Tustin Civic Center. The meeting was advertised in the *Irvine World News*, *Tustin News*, and *Orange County Register* on June 30 and July 7, 1994. At the meeting, representatives of the Marines Corps and the City explained the meeting format and discussed the responsibilities of the different agencies and consultants in preparing the EIS/EIR. An overview of the proposed action and environmental review process was provided. These presentations were followed by an opportunity for public oral or written comment. Two representatives from the public provided oral comments at the scoping meeting. All oral comments were related to homeless assistance provider interest; no one in attendance offered oral or written comments related to environmental issues or alternatives.

Additionally, 26 written comments were received in response to the 1994 NOI/NOP. These written comments addressed a variety of concerns including traffic circulation, possible alternative transportation modes, roadway improvements, and transportation management programs; regional trails; water drainage and water quality; availability and cost of utilities; land use compatibility; transport and cleanup of hazardous wastes and materials; impacts and financing of schools and libraries; affordable and transitional housing; air quality; traffic noise; liquefaction; and retention of the blimp hangars. A more detailed summary of the written scoping comments is included in Chapter 8. No written comments were received on the 1995 supplemental NOP. All issues raised during scoping regarding environmental topics have been addressed in this EIS/EIR.

The Marine Corps also held a public meeting in April 1997 regarding the blimp hangars pursuant to Section 106 of the National Historic Preservation Act (NHPA). The meeting was held onsite at a blimp hangar and attended by approximately 120 persons. The purpose of tbe meeting was to

describe the Section 106 process and the role of the State Historic Preservation Officer (SHPO) as it relates to the proposed reuse plan and to receive comments for consideration during consultation with SHPO and the Advisory Council on Historic Preservation (ACHP).

1.8.2 Public Review

The initial Draft EIS/EIR was made available for public review January 16, 1998. Affected agencies, organizations, and persons who may bave bad an interest in the disposal of MCAS Tustin and the Reuse Plan were provided with copies of the document for review and comment. The NOA for the initial Draft EIS/EIR was published in the *Federal Register* on January 16, 1998. Notices were also published in the *Irvine World News*, *Orange County Register*, and *Tustin News* on January 9, 1998. A 45-day public review period was provided for review of the draft document.

Comments received on the Draft EIS/EIR indicated the need to expand the traffic circulation study and to provide supplementary analysis for the issues of regional growth, schools, biology, water quality, air quality, utilities, noise, public services, and hazardous materials. This revised Draft EIS/EIR incorporates supplemental and new analysis. A 45-day public review period ~~is~~ was provided for the review ~~this document~~ of the revised Draft EIS/EIR. Agencies and the interested public ~~are~~ were invited to comment on the environmental analysis provided. Responses to all public review comments received are included in Volume 2 of this Final EIS/EIR.

Consistent with CEQA implementing guidelines (Cal. Code Regs., Title 14, § 15088.5), this document does not include responses to comments on the initial Draft EIS/EIR. Instead, a summary of revisions to the initial Draft EIS/EIR as they relate to this revised Draft EIS/EIR is provided in Appendix D. NEPA does not have any guidelines regarding re-circulation.

Interested parties are requested to submit new comments on this ~~revised~~ Final EIS/EIR. Pursuant to NEPA, an additional 30-day period is provided for review of this Final EIS/EIR. Comments should be sent to the following address:

Dana Ogdon, Senior Project Manager
City of Tustin
300 Centennial Way
Tustin, CA 92680
Fax: (714) 573-3113

CHAPTER 2.0
ALTERNATIVES CONSIDERED

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CHAPTER 2.0
ALTERNATIVES CONSIDERED

This section discusses alternatives for the proposed action and considers the DON *disposal* alternatives and the City of Tustin *reuse* alternatives.

NEPA and CEQA require that an EIS/EIR objectively evaluate a "reasonable" range of alternatives. Under NEPA, reasonable alternatives are those that are practical or feasible from a technical and economic perspective, and based on common sense (46 Fed. Reg. 18026, as amended, 51 Fed. Reg 15618). According to the CEQA Guidelines, "...an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (Cal. Code Regs., Title 14, § 15126.6(a)). Under CEQA, the factors that can determine feasibility are site suitability, economic limitations, availability of infrastructure, General Plan consistency, other plan or regulatory limitations, and jurisdictional boundaries. An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

This chapter of the EIS/EIR is organized into seven primary sections. Section 2.1 discusses the DON disposal alternatives. Section 2.2 describes the generation of reuse alternatives by the LRA. Alternatives eliminated from review in this EIS/EIR, and the reasons for their elimination are addressed in Section 2.3. Section 2.4 provides detailed descriptions of the alternatives evaluated in this EIS/EIR. Section 2.5 identifies the environmentally preferable/environmentally superior (NEPA/CEQA) alternative and Section 2.6 provides a list of permits and approvals required for disposal and subsequent reuse of MCAS Tustin. Finally, a summary comparison of the potential impacts and corresponding mitigation for each alternative is provided in Section 2.7.

2.1 DISPOSAL ALTERNATIVES

DON can either retain MCAS Tustin surplus property in federal ownership (No Action Alternative) or dispose of the property for subsequent reuse (Disposal Alternative). The description of retaining MCAS Tustin in federal ownership is included in the No Action Alternative (Section 2.4.4).

DON disposal is the federal action evaluated to determine potential environmental impacts associated with disposal of Marine Corps property from federal ownership. Under this proposed

action, approximately 1,585 acres of surplus real property would be disposed. The other 17 acres is being transferred to the Department of the Army in a federal-to-federal transfer.

2.2 REUSE ALTERNATIVES

2.2.1 Overview

As part of the MCAS Tustin reuse planning process numerous alternatives were proposed and then evaluated using the goals established by the LRA. During 1992 and 1993, the LRA's Base Closure Task Force considered a variety of technical information, market studies, and public input to generate three reuse alternatives. In 1994, the Base Closure Community Redevelopment and Homeless Assistance Act of 1994 ("Redevelopment Act," Pub. L. 103-421), modified the federal process for accommodating the needs of the homeless. Accordingly, elements of the solicitation process for reuse alternatives and the evaluation of those proposals were repeated in 1995. The LRA Reuse Plan was forwarded by the LRA to the DoD and HUD on October 21, 1996 and approved by HUD on March 30, 1998. The reuse planning process is described in detail in the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998) and summarized below.

2.2.2 LRA Reuse Planning Process Under Pre-1994 Base Closure Law

The LRA formed the Base Closure Task Force (Task Force) in February 1992 to conduct background briefings, fact-finding visits, public meetings, and to solicit reuse requests. The 19-member Task Force was comprised of representatives from the cities of Irvine, Santa Ana, and Tustin; the County of Orange; the City of Tustin Chamber of Commerce; the local business community; local homeowner's associations; the Marine Corps; and, the general public. The overall goal of the Task Force was to build consensus and generate a reuse plan that would: (1) create economically viable and balanced development; (2) provide housing and employment opportunities; (3) solve existing traffic circulation and recreation deficiencies; and, (4) generate sufficient revenue to support the necessary investment in infrastructure. The Task Force assumed responsibility for reuse planning of the entire reuse plan area (1,606 acres) although the initial base closure excluded family housing and part of the Air Station was later retained for Army use (see Section 1.3).

One early accomplishment of the Task Force was generation of a Vision Statement (Vision) to identify the most desirable qualities for ultimate reuse of the site. The Vision consisted of a central goal and 12 supporting goals. The central goal was to generate a reuse plan "that translates

community values into the most important quality or characteristics of the future uses and overall design; seeking to create results that are very special, worthy of the site's present and historical importance to the City of Tustin and the region." The supporting goals are listed below. For a detailed discussion of the goals and planning principles envisioned by the Task Force, refer to the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b).

- Good Neighbor
- Coherent Setting
- Self-Sufficient
- Fiscally Sound
- Distinct Design
- Valued Heritage
- Forward-Looking
- Balanced Local and Regional Responsiveness
- Sustainable Environment
- Civilian Transition
- Foster Economic Development
- Strategic Phasing of Development

In November 1992, a survey of approximately 30,000 households and businesses was conducted to gauge public opinion, solicit input about reuse in general, and gather specific ideas for reuse of the MCAS Tustin site. Based on the survey, the five issues of highest concern to the community, the five land uses most supported by the community, and the five land uses most opposed by the community were identified, as summarized in Table 2-1. A complete analysis of survey results is provided in *MCAS Tustin Community Opinion Survey Results Summary* (City of Tustin 1993f).

Table 2-1
Summary of Results from November 1992 Community Opinion Survey

Issues of Highest Concern	Land Uses Most Supported	Land Uses Most Opposed
Clean-up of hazardous waste on site	Regional park/active open space	Landfill
Maintain the character and identity of Tustin	Recreation facilities	Jail
Need for adequate roadway system to support traffic	Museum	Low-security correctional facility
Need to create a positive financial impact	College/other educational facility	Heavy industrial/manufacturing
Mitigation of noise on residential areas	Senior citizen housing	Heliport/airport

Based on the Vision, results of the survey, and community involvement via public workshops, the Task Force formulated three possible orientations for the planning effort. These orientations were intended to guide the initial planning effort and consisted of:

- *Self-Contained Orientation* - Under this orientation, the reuse planning area would be developed as a closed system. It would focus internally to create a balanced community within its boundaries. The new community would create a distinct and separate identity, and would not connect with adjoining communities.

- *Integrated Orientation* - Given this orientation, the reuse planning area would be developed by extending existing development and land use patterns from adjacent areas onto the site. Thus, the reuse plan area would be woven into the existing fabric of the community as if it had never existed.

- *Market-Driven Orientation* - With this orientation, development of the reuse planning area would be driven entirely by market forces. The site would be developed piecemeal, through a series of proposals as they were individually submitted.

By April 1993, a variety of information regarding the physical resources of the site was made available to the Task Force. Likely market demand for various types of development was considered. A preliminary market demand report was submitted in April, revised in August, and finalized in November 1993. The *Market Demand Forecasts for Reuse of the Tustin Marine Corps Air Station Property* report is available at the City of Tustin. A general overview of housing conditions was provided orally in April 1993 and a final housing report was provided in March 1994. A memorandum and exhibits regarding opportunities and constraints were provided to the Task Force, as well as a list of "driving issues" (City of Tustin 1993j).

On April 24, 1993 the Task Force sponsored a community workshop to relate site opportunities and constraints, as well as obtain public input for continued planning. Available physical, environmental, and market information was presented to participants. Based on that information and their preferences, attendees provided ranking/priorities for various land use categories and patterns. The results of the workshop were forwarded to the Task Force.

Throughout this process of data collection, public surveys, and community workshops, the Task Force received numerous proposals. On December 7, 1993, the Task Force met to formally consider the reuse proposals. The 31 suggested reuses are listed in Table 2-2, which also identifies the Task Force action taken on each proposed reuse. As shown, some general potential uses, such as "hangar reuse for ancillary commercial retail," were carried forward for further consideration. In other instances, specific reuse proposals (i.e., University of California Irvine) were eliminated, but the general type of use (i.e., education) was retained for future consideration.

Table 2-2
Proposals for Reuse of MCAS Tustin Acted Upon By the Task Force in December 1993

Potential Reuses	Task Force Recommendation
Institutional Uses	
California Department of Transportation (Caltrans) - 29 acres with 287,000 sq. ft. of office space, warehouse, equipment shop	Eliminated - Would not be responsive to Vision Statement, and could be accommodated in any industrial or R and D setting countywide.
County of Orange - 20 acres for control center transportation facilities; people mover, urban rail/fixed guideway	Eliminated - Urban rail/fixed guideway considered infeasible. Alternative modes of transportation could be accommodated in reuse alternatives.
County of Orange - Law enforcement training facility, residential health treatment center, social services, children's shelter	Health and social services carried forward for further consideration. Concern expressed about law enforcement training, as proposed, not being compatible with surrounding uses or the Vision Statement.
County of Orange - 2 acres for flood control improvements along Peters Canyon Channel	Carried forward for further consideration.
County of Orange - Correctional facility	Eliminated - Community survey indicated opposition to any jail facility.
City of Tustin - "Placeholder" for other entities to work with the city to provide transportation improvements, parkland, schools, health and social services, etc.	Carried forward for further consideration.
Museum	
Smithsonian National Air and Space Museum	Eliminated - Task Force queries to Smithsonian Museum indicated that such a use would not be supported by the Smithsonian Museum. However, museums uses were carried forward as a reuse concept for further consideration.
School/Education	
University of California, Irvine - Undetermined use	Request was incomplete so no recommendation was made. However, educational facilities were carried forward for further consideration.
Orange County Department of Education - Educational facilities and housing for handicapped and non-handicapped	Request was too broad, educational facilities and housing were carried forward for further consideration.
Rancho Santiago College Education Coalition - 1,230 acres and 176 buildings for training centers for professional fire fighters, law enforcement and health care workers; international business training center; homeless support and training	While firefighting and law enforcement facilities were rejected, as proposed, as inconsistent with the Vision Statement, the Task Force carried forward educational and homeless facility uses for further consideration indicating that approximately 100 acres could be supported for the college education coalition.
Santa Ana Unified School District (SAUSD) - 75 acres for a high school	Eliminated - No direct student generation would be expected in the SAUSD and the proposal is inconsistent with the Vision Statement, which needs to balance local and regional responsiveness. SAUSD is also a participant with Rancho Santago Educational Coalition, providing an opportunity for coordinating programs that would benefit SAUSD.
Tustin Unified School District - 40 acres for one middle school and two elementary schools	Carried forward for further consideration.
Reuse of hangars as schools for re-education of veterans	Schools not a viable adaptive reuse for the hangar due to the State Architect's standards for schools.
Asian management training facility and senior housing	Educational facilities and senior housing as a reuse concept, not specific uses, were carried forward for further consideration.
Recreational	
Indoor ski facility in one or both hangars	Eliminated - Proposal incomplete. Broader recreation use concept carried forward for further review.
Multi-Use Park (similar to Golden Gate in San Francisco or Balboa Park in San Diego)	Parks as a reuse concept were carried forward for further consideration.

Table 2-2. Continued

Potential Reuses	Task Force Recommendation
Recreational (Continued)	
Amusement Theme Park - 125 acres for a theme park dedicated to American history	Eliminated - Proponent had no financial backing or experience operating theme parks. However, commercial recreation was carried forward for further consideration.
County of Orange - 180 acres for Regional Park based around the blimp hangars	Carried forward for further consideration. Likely that 80 to 100 acres may be more appropriate size.
Native American Cultural Center (similar to Polynesian Cultural Center in Hawaii)	Eliminated - Reuse is considered to have low economic viability. However, commercial recreation was carried forward for further consideration.
Polish Village - Commercial uses	Eliminated - Reuse is considered to have a low economic viability and is not consistent with the Vision Statement. However, commercial uses and commercial recreation were carried forward for further consideration.
World Folk Village Amusement Park - 900 to 1,000 acres for a multi-national showcase	Eliminated - Committee identified negative impacts with the surrounding existing development and inconsistency with the Vision Statement. However, commercial recreation concept was carried forward for further consideration.
Commercial	
Reuse of hangars as motion picture studio	Carried forward for further consideration, although additional market testing is needed. Task Force is uncertain that a major studio would relocate.
Reuse of hangars for discount, specialty, and volume retail	Carried forward for further consideration.
Mini Las Vegas	Eliminated - Committee identified negative impacts with the surrounding existing development and inconsistency with the Vision Statement. However, commercial recreation concept was carried forward for further consideration.
Aviation	
General aviation airport[1]	Eliminated - Fixed-wing aircraft operations would conflict with John Wayne Airport flight patterns; existing runways are not constructed to fixed-wing standards; MCAS Tustin is too small to accommodate runways long enough for fixed-wing operations, and a commercial airport dedicated to helicopter operations is not economically viable. Finally, the community survey indicated strong opposition to reuse as an airport.
Model aircraft operations	This proposal presents a concern about negative impacts on surrounding development and inconsistency with the Vision Statement, but the concept was carried forward for further consideration with regional recreation proposals.
Lighter-than-air maintenance facility	Eliminated - The community survey indicated strong opposition to any airport use.
Miscellaneous	
Wind Generator Project - Place wind-powered generators under helium balloons	Eliminated - Not considered to be economically feasible. Additionally, aesthetic and safety concerns associated with the helium balloons appeared to conflict with Vision Statement.
Reuse of hangars as private botanical garden and conservatory	Eliminated - Proposal incomplete.
Swap of wetlands in Huntington Beach for entire MCAS Tustin site	Eliminated - DoD indicated to the Task Force that a land swap could not be considered.
Peppertree Homeowner's Association - Requested reuses as park, residential, museum, commercial, school, golf course, etc.	Carried forward for further consideration.

[1] Federal Aviation Administration (FAA) 1992

Source: City of Tustin 1993d and 1993h

The Task Force identified the proposals from Table 2-2 that were consistent with the Vision Statement and utilized the beneficial characteristics of the three planning orientations to develop various reuse scenarios. These beneficial characteristics included:

- inclusion of market-driven characteristics into broad planning categories that would allow for flexible response to future market conditions;
- integration with surrounding development by requiring land uses compatible with adjacent surrounding development and provision of roadway improvements that would complete the area-wide circulation system; and
- inclusion of a distinct identity for the reuse planning area and a mix of uses that would result in sufficient revenue that would provide for infrastructure and make the community self-sufficient.

In December 1993, three potential alternative reuse scenarios were presented to the Task Force by the planning consultant. Those scenarios were:

Scenario 1: Arterial Loop Pattern/Large Community Core/Medium Residential
Scenario 2: Arterial Grid Pattern/No Core/High Residential
Scenario 3: Arterial Loop Pattern/Low Residential

Each of the scenarios represented a long-range plan for development of the approximately 1,606-acre reuse planning area, and included a variety of residential, commercial, recreation, public open space, community facilities, and other uses to be developed over a 20-year plus time frame. Each scenario represented a different configuration and pattern of land use within the reuse planning area, as well as different intensities of future development. Two design approaches to arterial roadways were included. Under the loop roadway system, both of the two existing historic blimp hangars could be retained if economically feasible and consistent with the land use plan. Under the arterial grip pattern road system, the southern blimp hangar would be demolished.

In preparing these three scenarios, the three orientations previously formulated were considered: self-contained, integration, and market-driven. Each of the three scenarios incorporated elements of the orientations. To the extent that existing residential areas on the Air Station that are adjacent to other existing residential areas would be retained, the scenarios are integrated. To the extent that housing and employment opportunities are provided together with schools, parks, and shopping opportunities, the scenarios are self-contained. Finally, the central portion of the reuse plan area would be retained for market-driven development under two of the three scenarios.

On December 11, 1993, the Task Force held a puhlic workshop to consider the three reuse scenarios. At that meeting, Scenario 1 was selected as preferred.

LRA Reuse Planning Process Under Post-1994 Base Closure Law

Federal base closure law and regulations were changed during the period of reuse planning for MCAS Tustin. Because MCAS Tustin was closed in two rounds of BRAC actions (1991 and 1993), federal screening was originally initiated under pre-1994 federal law and regulation as described in Section 1.3.2 and Appendix B. Under the Stewart B. McKinney Homeless Assistance Act of 1987 (Pub. L. 100-77) (Appendix B), HUD and the U.S. Department of Health and Human Services (HHS) originally worked directly with homeless services providers to review and either approve or deny an application. With limited exceptions, once an application had been approved by HHS, the holding agency (e.g., DON) must assign that property for conveyance to the approved applicant as part of the reuse planning process. Under post-1994 Base Closure Law, the screening process for homeless service providers was not initiated for MCAS Tustin. The 1994 Redevelopment Act revised the federal process for accommodating the needs of the homeless in connection with disposal of military installations. This Act provides the affected local community greater opportunity to participate in the disposal decision. In November 1994, the LRA notified DON of its intent to conduct a second screening process for the entire reuse plan area. The DoD approved this action in December 15, 1994.

The Task Force conducted an extensive solicitation process throughout 1995, which involved mailing formal notices to state and local agencies; publication of notices in regional and local newspapers; consultation with HUD representatives and homeless providers; an outreach workshop for representatives of state and local agencies and homeless providers; and a 30-day comment period for the homeless providers regarding the draft application requirements and review criteria.

The LRA mailed public notices soliciting Notices of Interest on August 3, 1995. Those entities which had previously submitted reuse proposals that were considered by the Task Force in December 1993 (Table 2-2) were also required to formally submit a Notice of Interest. The LRA received 33 notices. These were evaluated by the Task Force in the context of: how they would fit with the purpose and need for reuse (economically viable, provide housing and employment, solve traffic circulation and recreation deficiencies, and generate revenue); how they would fit with the Vision Statement and 12 supporting goals; how they incorporated elements of the three planning scenarios; and how they reflected public considerations. Sixteen of the Notice of Interests were eliminated and the remaining 17 were incorporated, either entirely or in part, into the Reuse Plan for MCAS Tustin.

Table 2-3 lists the 17 Notice of Interests that were incorporated, including the identity of the proposing entity, the type of reuse, and acreage. A complete list of the Notice of Interests received and the Task Force recommendation is provided in Appendix B of the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b).

Table 2-3
Notice of Interests Incorporated into Reuse Plan

Recommended Recipient	Element Incorporated into Reuse Plan	Acreage
City of Irvine	Community park (with access roadway) on Marble Mountain Road	8.8
City of Tustin	Public right-of-way use	157.6
City of Tustin	Storm drain facilities	1.8
City of Tustin	Community park (and existing buildings). Two neighborhood parks	24.1 5 each
City of Tustin	Day care/educational facilities	4.3
County of Orange Environmental Management Agency	Urban regional park Animal Control Facility	84.5 4[1]
County of Orange Social Services Department	60-bed immediate care facility for abused children	4.0
County of Orange Flood Control District	Transfer of deed to existing flood control easements and 40- to 50-foot additional right-of-way.	26.7
County of Orange Sheriff's Department	Small educational facilities (in existing buildings) and additional area for Sheriff's Department training	10.0
Irvine Unified School District	Elementary school (K-8)	20.0
South Orange County Community College District	Community college and other educational opportunities	99.7
Tustin Unified School District or LRA	Two elementary school sites One high school site	10 each 40
LRA/Dove Housing	6 emergency transitional housing units	TBD
LRA/Families Forward (Irvine Temporary Housing)	14 transitiunal housing units	TBD
LRA/Orange Coast Interfaith Shelter	6 family units of transitional housing	TBD
LRA/Salvation Army	24 emergency transitional housing units	TBD
LRA/Orange County Rescue Mission	Emergency housing needs of single men and women (two existing 3-story barracks structures).	5.1

Note: All acreage figures are estimated only. Figures in the text are rounded for discussion purposes. More detailed numbers and actual parcel identification are provided in the *MCAS Tustin Specific Plan/Reuse Plan* (1996b) and *Errata* (1998).
[1] Four acres within Regional Park, also existing buildings on Regional Park site for Sheriff's training.
TBD - To be determined

The resulting Reuse Plan for MCAS Tustin incorporates specific users and types of uses from the second screening process and refines the preferred reuse scenarios developed in December 1993. The LRA approved the Reuse Plan and submitted the document to DON and HUD on October 21, 1996. The Reuse Plan was approved by HUD on March 30, 1998. Subsequently, an *Errata* to the

Reuse Plan was prepared by the LRA and submitted to DON. Because the *Errata* was merely a refinement of the original plan and did not include changes to the Homeless Assistance Submission, it was not submitted to HUD.

The proposed LRA Reuse Alternative is described in Section 2.4.1 (Alternative 1). The two other reuse scenarios considered by the Task Force are described in Section 2.4.2 (Alternative 2) and 2.4.3 (Alternative 3). All three alternatives are evaluated at an equal level of detail in Chapter 4 of this EIS/EIR, as required by NEPA.

2.3 ALTERNATIVES ELIMINATED FROM DETAILED REVIEW

Based on the reuse planning process described in Section 2.2, many proposals were brought forward for consideration. Reuse proposals included both uses of specific facilities (such as blimp hangars) and reuse of the entire Air Station (such as a multi-use park). Table 2-2 lists the reuse proposals acted upon by the Task Force and Table 2-3 lists the NOIs incorporated into the Reuse Plan. From these proposals, a screening process was initiated to determine if there were other alternatives appropriate for this environmental document. Those proposals were screened to determine if they would (1) use a substantial portion of the site, (2) attain the objectives of the LRA, (3) avoid or substantially lessen environmental effects of the projects, (4) be technically feasible, or (5) be economically feasible. Such practical and feasible alternatives are required to objectively evaluate a "reasonable range of alternatives." Three reuse alternatives were reconsidered as part of the environmental process and subsequently eliminated from analysis in this EIS/EIR as described below.

Additionally, the CEQA Guidelines (Cal. Code Regs., Title 14, § 15126.6(f)(2)(B) (1998)) require an examination of alternate locations, not just alternate projects, when appropriate. Selecting an alternate location for the reuse of MCAS Tustin is not appropriate because the project is, by definition, reuse of the Air Station. Consequently, alternative reuses are tied to that location. Therefore, the Alternate Location alternative was eliminated from further review in this document.

2.3.1 Rancho Santiago College Education Coalition

This alternative proposed to utilize over 1,200 acres and 175 buildings of the reuse plan area for regional training centers for professional fire fighters, law enforcement professionals, and health care occupations; a regional occupational education center; a regional international business training center; and a regional homeless support services and training center. Generally all of the reuse plan

area, excluding housing, was proposed to be devoted to educational and training services. This alternative would have generated jobs and probably could have accommodated circulation improvements to correct the identified deficiency. It would have resulted in the transfer of existing military housing and parkland into public usage, but it would not have generated enough housing units and park acreage to meet the project goal. Because educational/training uses do not typically generate high sales tax or property tax revenues this alternative would not support the necessary infrastructure improvements estimated at over $90 million over 20+ years (City of Tustin 1993c). Because this alternative would not meet the project purpose and need, it was eliminated from further consideration.

2.3.2 Multi-use Park

Under this alternative, it was proposed that the reuse plan area be reused as a multi-use park similar to Balboa Park in San Diego or Golden Gate Park in San Francisco. These large urban parks are prime tourist attractions and important features in those cities. Both Balboa Park and Golden Gate Park are over 1,100 acres in size. Features include museums, restaurants, recreation facilities, open grassy areas, and more "natural" open space. In the reuse plan area, such a park would necessitate use of almost the entire Air Station, excluding housing. This alternative would likely be able to accommodate needed circulation improvements and eliminate the deficiency in parkland (which are two of the project goals). Additionally, it could likely be designed to avoid impacts to wetlands and historic resources. However, it would not create an economically viable and balanced development, because the vast majority of the Air Station would be utilized for passive recreation, which would generate only a limited number of jobs when compared to retail-commercial or visitor-serving uses. Additionally, the high cost of infrastructure (over $90 million over 20+ years), would not be matched by limited sales tax and property tax revenue if the majority of the site were retained as parkland/open space. For these reasons, this alternative was eliminated from further consideration.

2.3.3 Civilian Accommodation of Existing Facilities

This alternative proposed to retain and reuse the facilities and land at MCAS Tustin identical to their use under military ownership, but under private ownership instead. Under this proposal the existing housing would be retained and reused for housing. Park and recreation facilities would also be retained for civilian use and existing administration and support buildings would be retained for some type of institutional uses. The areas around the hangars would be reused for industrial uses or research and development type uses. All existing agricultural operations would remain in place. The hangars, air fields, and air support facilities would be reused for some type of civilian airport.

This alternative would: eliminate or reduce impacts to wetlands, prime farmlands, and historic resources; provide some housing and employment opportunities; and partially address existing deficiencies in parkland. It could solve existing circulation problems if roads were to be extended across the agriculture fields and around the hangar. Improvements in infrastructure would continue to be necessary becanse they do not currently meet state or local standards. The high cost of infrastructure improvements may not be off-set by the sales tax and property tax revenue, as much of the property would remain in agricultural production. More importantly, the air strip and existing runway configuration would not accommodate fixed-wing aircraft; thus, the FAA would not support an airport at this site (FAA 1992). In addition, the community is strongly opposed to reuse as an airport. Therefore, this alternative was eliminated from further consideration.

2.4 DETAILED DESCRIPTION OF REUSE ALTERNATIVES

As part of the reuse planning process, two other alternatives in addition to the LRA Reuse Plan were formulated (Section 2.2). These two other alternatives represent a range of possible development scenarios from providing the most housing to creating the most jobs. Tbese two alternatives represent different densities of development and circulation design, include various major components, incorporate differing strategies of adaptive use of the blimp hangars, provide varying focuses of development, and satisfy the four reuse criteria described in Section 2.2.

This section presents a detailed description of the three reuse alternatives: Alternative 1, which is the LRA Reuse Plan; Alternative 2, whicb is a reuse plan based on an arterial grid pattern with no Community Core and a high residential component; and Alternative 3, which is a reuse plan based on an arterial loop pattern with a low residential component. Each alternative is described and subsequently analyzed within this EIS/EIR under the maximum achievable level of development.

Each alternative is a broad conceptual plan for developing the large, 1,606-acre reuse plan area in a variety of residential, commercial, and public uses over a 20+ year period. As such, each bas general land use planning designations (residential, commercial, recreation, institutional, etc.) that allow for a range of different types of land use and intensity of development. For example, residential uses for the three alternatives range from 4,340 to 6,205 housing units with a variety of housing types and densities, while recreation uses range from a combination of regional, community, and neighborhood parks on approximately 127 acres to a combination of community and neighborbood parks on approximately 60 acres.

Given the number of components being considered under each alternative, Table 2-4 has been prepared to help define the essential characteristics of each alternative. None of the alternatives include all of the listed components. In addition, Table 2-5 has been developed to provide a summary comparison of land use development and buildout characteristics of the three alternatives. These tables are intended to help the reader identify key characteristics of the specific differences between the three alternatives.

Table 2-4
Major Components of Alternatives

Component	Included in Alternative 1?	Included in Alternative 2?	Included in Alternative 3?
Low Density Residential (1-7 DU/Acre)	✔	✔	✔
Medium Density Residential (8-15 DU/Acre)	✔	✔	✔
Medium High Density Residential (16-25 DU/Acre)[2]	✔		
High Density Residential (16-25 DU/Acre)[3]		✔	✔
Transitional/Emergency Housing	✔		
Commercial/Business	✔	✔	✔
Commercial	✔	✔	✔
Village Services	✔		
Village Mixed-Use		✔	✔
Golf Village/Commercial	✔	✔	✔
Golf Course	✔	✔	✔
Community Core[4]	✔		
Reserve Area[4]			✔
Learning Village	✔		
Public Institutional/Commercial		✔	✔
Community Park	✔	✔	✔
Urban Regional Park	✔		
Cultural Center		✔	✔
Possible Adaptive Use of Blimp Hangars - one or both hangars [1]	✔		
Possible Adaptive Use of Blimp Hangars - northern hangar only [1]		✔	✔

[1] If financially feasible
[2] Includes dwelling units in Community Core, residential density consistent with Irvine General Plan Category.
[3] Includes dwelling units in Village Mixed-Use, residential density consistent with Tustin General Plan Category.
[4] Future phase mixed urban uses.

Table 2-5
Summary Comparison of Land Development and Buildout Characteristics of Alternatives

Characteristic	Alternative 1	Alternative 2	Alternative 3
Residential (number of dwelling units [DU])			
Low Density Residential (1-7 DU/Acre)	1,421[1]	1,729	1,460
Medium Density Residential (8-15 DU/Acre)	1,701[1]	2,132	1,865 [2]
Medium to High Density Residential (16-25 DU/Acre)	1,479[3]		
High Density Residential (16-25 DU/Acre)		2,344[4]	1,015 [4]
Total Dwelling Units	**4,601**	**6,205**	**4,340**
Commercial/Institutional/Recreational (square footage)			
Transitional/Emergency Housing	133,294	0	0
Commercial/Business	4,305,251	5,623,867	5,142,528
Commercial	713,412	1,258,884	1,219,593
Commercial/Recreation	0	437,560	437,560
Village Services	315,592	0	0
Village Mixed-Use	0	929,420	712,467
Community Core	3,630,726	0	0
Reserve Area	0	0	1,702,464
Golf Village (includes hotel)	280,526	0	0
Hotel	0	339,768	283,140
Learning Village	1,412,651	0	0
Institutional/Commercial	0	351,268	467,037
Cultural Center	0	570,636	557,568
Community Park	40,531	312,543	394,218
Urban Regional Park	574,992	0	0
Total Square Feet of Building Floor Area	**11,406,975**	**9,214,585**	**10,916,575**
Area (acreage)[5] and Percentage of Development			
Residential	445 (28%)	558 (35%)	368 (23%)
Commercial/Business	738 (46%)	739 (46%)	915 (57%)
Institutional/Recreational	238 (15%)	131 (8%)	139 (8%)
Roadways/Drainage	186 (12%)	178 (11%)	184 (11%)
Total Acreage	**1,606**	**1,606**	**1,606**
Approximate On-site Population	12,514	16,408	11,986
Approximate Employment[6]	77,401	67,723	66,454
Approximate Average Daily Vehicle Trips	215,093	268,130	294,887

[1] Includes dwelling units in Golf Village.
[2] Includes dwelling units in Reserve Area.
[3] Includes dwelling units in Community Core, residential density consistent with Irvine General Plan Category.
[4] Includes dwelling units in Village Mixed-Use, residential density consistent with Tustin General Plan Category.
[5] Rounded to the nearest acre.
[6] Includes direct, indirect/induced, and construction.
Note: All acreage figures are estimates only. Figures in the text and the tables are included for discussion purposes. More detailed numbers (tenth of an acre) are provided in the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)

The discussion of each alternative is generally organized under the following topics:

- *Land Use and Development Potential* - The intended uses that characterize each major component and the buildout characteristics, including the anticipated level of employment, number of housing units, number of vehicle trips, etc. for each component.
- *Buildout Characteristics* - A summary table characterizing the proposed buildout by major component.
- *Circulation* - A discussion of the primary characteristics of the proposed street network.
- *Development Phasing* - The anticipated phasing for construction of the components and associated infrastructure.

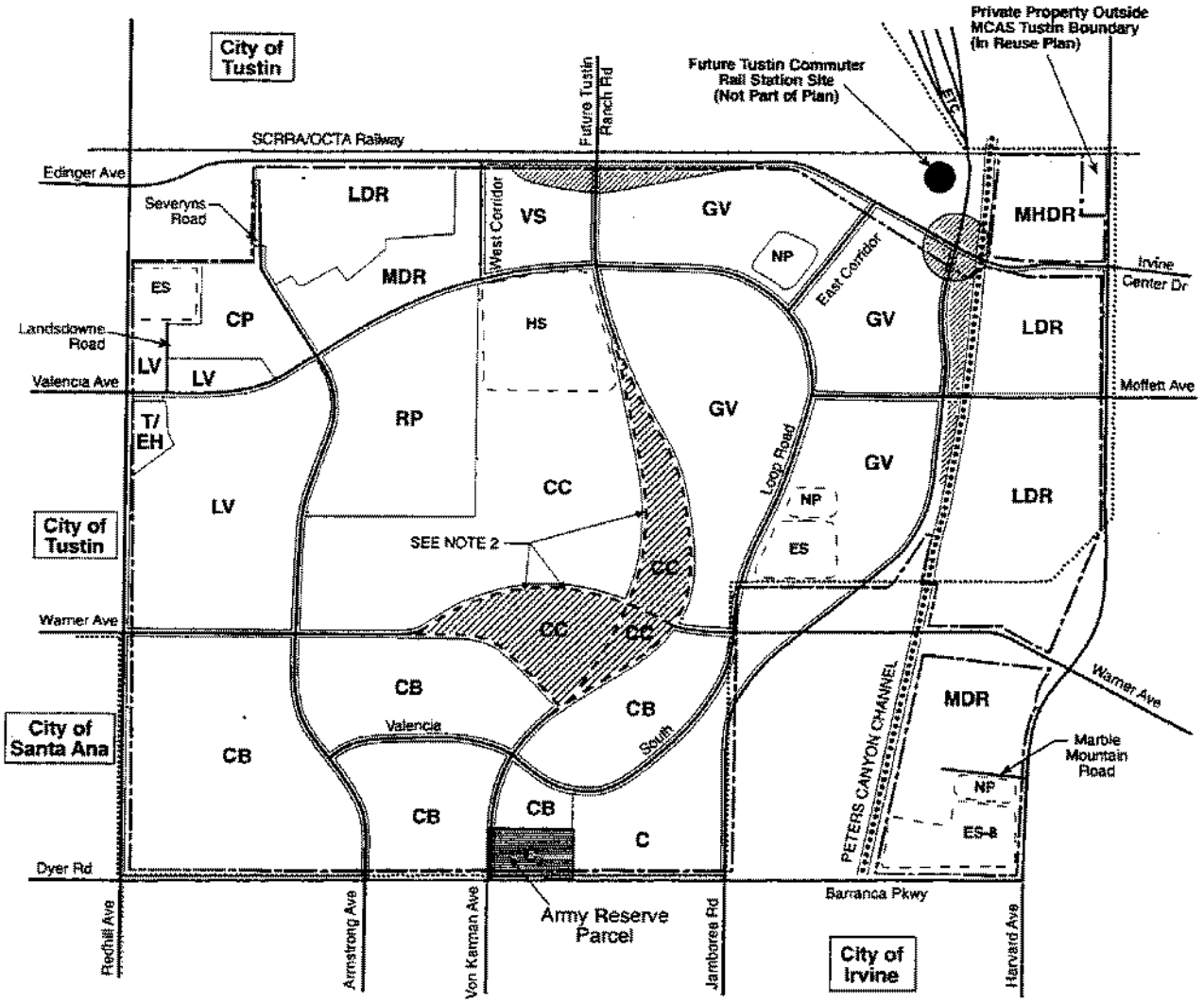
Also included in this section is a description of the No Action Alternative (Section 2.4.4).

2.4.1 Alternative 1

Alternative 1 is the alternative submitted by the LRA to DON and HUD and the one that the City of Tustin believes would best meet the community objectives of the reuse planning process. This alternative would result in development of the reuse plan area as described below. The specific uses and acreage for each are summarized in Table 2-6, and the location of uses is illustrated in Figure 2-1.

Land Use and Development Potential

This alternative proposes a variety of housing, employment, recreation, educational, and community support uses designed to complement the existing urban character of the surrounding area and strengthen the economic base of Tustin and nearby cities. The development of this alternative would result in the most building space, parkland, and educational uses. Among the three action alternatives, only this alternative would result in: Transitional/Emergency Housing for the homeless; a Regional Park developed around the northern blimp hangar (which would be reused if financially feasible); a large Community Core developed with mixed uses; and specialized educational, social service, and law enforcement facilities within a Learning Village campus (see descriptions below).



LDR	LOW DENSITY RESIDENTIAL (I-7 DU/ACRE)
MDR	MEDIUM DENSITY RESIDENTIAL (8-15 DU/ACRE)*
MHDR	MEDIUM HIGH DENSITY RESIDENTIAL (16-25 DU/ACRE)
T/EH	TRANSITIONAL/EMERGENCY HOUSING
GV	GOLF VILLAGE
C	COMMERCIAL
CB	COMMERCIAL BUSINESS
VS	VILLAGE SERVICES
CC	COMMUNITY CORE
LV	LEARNING VILLAGE
CP	COMMUNITY PARK
RP	URBAN REGIONAL PARK
NP	NEIGHBORHOOD PARK
ES	ELEMENTARY SCHOOL (K-6)
ES-8	ELEMENTARY SCHOOL (K-8)
HS	HIGH SCHOOL
.....	REGIONAL RIDING AND HIKING TRAIL
— — —	MCAS TUSTIN BOUNDARY
.....	IRVINE/TUSTIN/SANTA ANA BOUNDARY
	MILITARY (FEDERAL PROPERTY)
	ADDITIONAL ROAD RIGHT-OF-WAY

Notes:

1. Roadway alignments are conceptual.
2. Shaded areas represent conceptual alternative roadway alignment areas and interchange locations.
3. DU= Dwelling Units
4. Roads shown indicate road right-of-way.
5. Within the City of Irvine, the density within the Medium Density Residential designation will not exceed 12.5 dwelling units per acre.

0 2000 Feet

Figure 2-1
Alternative 1
LRA Reuse Alternative

Table 2-6
Alternative 1 Buildout Potential

Land Use	Gross Acres	Non-residential Uses		Residential Uses		
		Floor Area Ratio	Total Floor Area (Sq. Ft)	Existing DU	Potential New DU	Total DU
Residential [1]						
Low Density (1-7 DU/Acre)	181.3	–	–	1,135	30	1,165
Medium Density (8-15 DU/Acre)	125.1	–	–	402	621	1,023
Medium to High Density (16-25 DU/Acre) [2]	29.4	–	–	–	588	588
Golf Village Low Density (1-7 DU/Acre)	48.5	–	–	–	256	256
Golf Village Medium Density (8-15 DU/Acre)	55.2	–	–	–	678	678
Community Core (16-25 DU/Acre) [3]	–	–	–	–	891	891
Transitional/Emergency Housing	5.1	–	133,294	–	–	–
Subtotal	**444.6**	–	**133,294**	**1,537**	**3,064**	**4,601**
Commercial/Business						
Commercial/Business	265.2	0.35-0.54	4,305,251	–	–	–
Commercial [4]	55.3	0.32-0.50	713,412	–	–	–
Village Services	20.7	0.35	315,592	–	–	–
Commercial/Golf Village (Hotel)	12.4	0.50-0.60	280,526	–	–	–
Golf Course	159.3	–	–	–	–	–
Community Core	225.2	0.50	3,630,726	–	–	–
Subtotal	**738.1**	–	**9,245,507**	–	–	–
Institutional/Recreational						
Learning Village	128.0	0.30	1,412,651	–	–	–
Community Park	24.1	0.10	40,531	–	–	–
Urban Regional Park	84.5	0.16	574,992	–	–	–
Subtotal	**236.6**	–	**2,028,174**	–	–	–
Right-of-way						
Arterial Roadways	158.4	–	–	–	–	–
Drainage Facilities	28.5	–	–	–	–	–
Subtotal	**186.9**	–	–	–	–	–
Totals for Reuse Plan Area	**1,606.2**	–	**11,406,975**	**1,537**	**3,064**	**4,601**
Less Federal Transfer Property	16.7	–	173,804	–	–	–
Less Private Property	4.1	–	–	–	82	82
Total Surplus Disposal Acreage	1,585.4	–	11,233,171	–	2,982	4,519

[1] Includes three neighborhood parks with a total of 18 acres.
[2] 82 units are located on privately owned property.
[3] Includes approximately 35 acres of medium high density residential uses.
[4] Includes 16.7-acre Army Reserve Center parcel.
Notes: All acreage figures are estimates only. Figures in the text are rounded for discussion purposes.
Source: *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)

This alternative would permit reuse of some of the existing military structures and facilities, including recreational facilities such as baseball, softball, volleyball, football, and soccer fields plus basketball and tennis courts. In addition, the two blimp hangars, which contain 660,416 square feet of floor area, would be adaptively used if financially feasible. The northern blimp hangar could support regional recreational activities in the form of special events center, sports center, museum, and historical aircraft restorations. The southern hangar could be used for film production, warehouse facilities, or light industrial uses permitted by the plan. Including the hangars, approximately 1.8 million square feet of structures, plus 1,537 housing units, could be reused under this alternative. Key components of the land use plan under this alternative (see Figure 2-1) include the following:

Residential (LDR, MDR, MHDR)

Residential development with 4,601 units are proposed in the northern and southeastern portions of the reuse plan area, adjacent to existing neighborhoods. This could include rehabilitation or redevelopment of the existing 1,537 attached military family housing units, if economically feasible. An additional 3,064 units could also be constructed. These units could include a variety of housing types at varying densities, including: low density (1-7 units per acre) and medium density (8-15 units per acre) housing in the Golf Village; low density detached single family units, duplexes, or other attached dwellings at 1-7 units per acre (LDR); medium density attached and detached single family and multi-family dwellings at 8-15 units per acre (MDR); and medium high density multi-family dwellings at 16-25 units per acre (MHDR). A total of 256 low density and 678 medium density residential units are proposed within the Golf Village (discussed below). A total of 891 medium high density residential units are proposed within the Community Core. Two elementary schools (one 10 acres and one 20 acres) and an eight-acre neighborhood park (in the City of Irvine) would be developed concurrently to serve the residential neighborhoods.

Transitional/Emergency Housing (T/EH)

Existing military barracks housing (133,294 square feet) would be reused as a 192-bed Transitional/Emergency Housing facility for the homeless. The existing barracks units are located on a 5.1-acre site in the northwestern portion of the reuse plan area immediately adjacent to Red Hill Avenue. In addition, a total of 50 family housing units for the homeless would be accommodated, dispersed, and integrated into residential communities located between Peters Canyon Channel and Harvard Avenue.

Commercial/Business (CB)

Employment would be generated by Commercial/Business activities consisting of high-tech research and development, professional office, retail, and other specialized employment/merchandising uses. These uses would be concentrated in the southwestern portion of the reuse plan area on approximately 265 acres of land, between future Warner Avenue and Barranca Parkway just southeast of Red Hill Avenue and would be adjacent to similar existing urban development to the west.

Commercial (C)

A regionally oriented commercial district (approximately 55 acres) would be developed in the triangular area within the southern portion of the reuse plan area, south of the future Valencia South Loop Road and northwest of Jamboree Road. The commercial district would include regional commercial and retail uses, specialty merchandising, wholesale, and discount businesses. Commercial activity would provide support for commercial wholesale uses in the Irvine industrial area to the southwest. The commercial district includes the approximately 17-acre Army Reserve Center parcel, which would be designated as Commercial.

Village Services (VS)

Local commercial retail and service uses would be provided in the northeasterly portion of the reuse plan area, just northwest of the future Tustin Ranch Road extension and adjacent to existing and new residential neighborhoods. The 21-acre district would serve surrounding residences and would provide both pedestrian and vehicular accessibility.

Community Core (CC)

The central portion of the reuse plan area would be a Community Core (approximately 225 acres), offering the opportunity to maintain flexibility for future large-scale, mixed-use development to offset high infrastructure and demolition costs. The Community Core would develop as a later or final phase because of the need to remove existing runways and complete hazardous materials cleanup. Opportunities for Residential, and Commercial/Business and Industrial uses in either separate or integrated projects would exist in this area, along with institutional uses, such as a 40-acre high school. Of the total 4,601 dwelling units that could be contained in the reuse plan area, 891 residential units could be built in the Community Core. The southern blimp bangar within this

area could be preserved, if financially feasible, for adaptive use such as a warehouse (including potential uses such as offices and supporting facilities), a film production facility, or other light industrial uses.

Golf Village (GV)

The Golf Village, to be located in the eastern portion of the reuse plan area, would include a 500-room hotel and ancillary commercial retail support services (i.e., restaurants, shops, etc.) in conjunction with the hotel, an 18-hole golf course, and residential development. Although the golf course would be privately owned, it would be open to the general public. The golf course would be surrounded by low density and medium density residential development and anchored by a resort hotel or time shares, accessory retail, service commercial, and restaurant uses. Other uses would include two neighborhood parks consisting of five acres each with play fields, tot lots, and other facilities, as well as an elementary school.

Learning Village (LV)

The 128-acre Learning Village, adjacent to the northwestern boundary of the site, would provide a specialized educational environment with a variety of public-serving uses in a campus setting in the western portion of the reuse plan area. Education and training would be its primary functions. The Learning Village would also include an elementary school. The majority of existing buildings and facilities within the Learning Village area could be reused.

Community Park (CP)

A Community Park would be developed in the northern portion of the reuse plan area. Located between the Learning Village and residential areas, this approximately 24-acre park would provide both a buffer and a link between the activities of both areas. The existing volleyball and basketball courts, a softball diamond, and soccer and football fields would be reused for the park facilities. The park would also contain picnic areas, community center buildings, multi-purpose rooms, and supporting uses.

Urban Regional Park (RP)

The Urban Regional Park (approximately 85 acres), located in the north-central portion of the reuse plan area, would establish a major urban recreation complex of community and county-wide importance. The northern blimp hangar is located within this area and is expected to be preserved for adaptive use, if financially feasible. The reuse could be for different recreational functions including an interpretive ~~special events~~ center (sports events, cultural events, ~~large~~ concerts, ~~conferences, conventions,~~ etc), a sports center, a museum, ~~restaurants~~, picnic areas, a video arcade, or an historic collections facility. The Urban Regional Park would serve a number of functions, including open space conservation, historic preservation, recreation, community recreation programs, training, educational and interpretive programs, and supporting uses.

Boildout Characteristics

Alternative 1 buildout characteristics, including the anticipated number of housing units and associated population, level of employment, and number of vehicle trips generated by major components, are summarized in Table 2-7.

Table 2-7
Alternative 1 Buildout Characteristics

Component	Development Characteristics[1]	Residential Population	Direct Jobs	Indirect and Induced Jobs	Average Daily Vehicle Trips
Residential	4,601 DU	12,514	35[2]	10	36,348
Transitional/Emergency Housing	192 Beds	–	45	13	941
Commercial/Business	4.30 MSF	–	10,960	7,475	90,169
Commercial	0.70 MSF	–	1,117	362	3,114
Village Services	0.30 MSF	–	524	170	14,273
Community Core	3.60 MSF	–	10,317	6,467	43,944
Golf Village	0.28 MSF	–	437	147	10,328
Learning Village	1.40 MSF	–	395	112	11,512
Community Park	0.04 MSF	–	67	19	121
Urban Regional Park	0.57 MSF	–	955	306	4,343

Notes: All figures are approximations only. Figures in text are rounded for discussion purposes.
[1] MSF = million square feet of floor area
[2] School employees
Source: City of Tustin 1993, 1999h

Circulation

A street network would be created to serve the reuse plan area and would create through connections that would partially address regional circulation issues. This system (see Figure 2-1) would be oriented around Valencia South Loop Road, which would extend from Valencia Avenue on the northwest, Moffett Avenue on the east, Warner Avenue on the southeast, and Armstrong Avenue on both the west and the north. Armstrong Avenue would be extended northeasterly to connect to Valencia South Loop Road. Tustin Ranch Road would be extended southwesterly to bisect the area created by Valencia South Loop Road and connect to Von Karman Avenue. Warner Avenue, which is currently cut off by MCAS Tustin, would be extended and would bisect the area created by Valencia South Loop Road; however, Warner Avenue would still be discontinuous if the southern blimp hangar is retained. Alternate alignments for Tustin Ranch Road and Warner Avenue are also shown in this alternative. Right-of-way and/or design improvements would also be made to Red Hill Avenue, Barranca Parkway, Harvard Avenue, Jamboree Road, and Edinger Avenue/Irvine Center Drive. Other streets in the reuse plan area (Severyns Road, Landsdowne Road, improved Marble Mountain Road, etc.) would connect to the arterial street network and be oriented to efficiently serve on-site neighborhoods and districts.

Development Phasing

Future development based on this alternative would occur incrementally over a 20+ year time frame. The level of development within any given phase would be tied to the availability of the infrastructure necessary to support such development. Table 2-8 shows the approximate anticipated timing of development. Future market demand for uses within the reuse plan area, along with the complexity and timing of environmental cleanup efforts, could be the primary factors influencing this schedule.

Development required under this alternative would also include a variety of infrastructure improvements, such as roadways and utilities. Infrastructure improvements required under this alternative would generally occur in a phased manner as needed to accommodate development. In conjunction with development within any phase, additional activities such as demolition; environmental mitigation; grading; construction of roadways, parking facilities, and structures; and installation of utilities would also occur.

Table 2-8
Alternative 1 Anticipated Development Phasing

Land Uses	Year					Total
	By 2005 [1]	2006-2010	2011-2015	2016-2020	2020+	
Residential (DU unless otherwise noted)						
Low Density (1-7 DU/acre)	1,165	–	–	–	–	1,165
Medium Density (8-15 DU/acre)	1,023	–	–	–	–	1,023
Medium to High Density (16-25 DU/acre)	588	–	–	–	–	588
Golf Village (1-15 DU/acre)	375	559	–	–	–	934
Community Core (16-25 DU/acre)	–	–	891	–	–	891
Transitional/Emergency Housing (Sq. Ft.)	133,294	–	–	–	–	133,294
Subtotal DU:	**3,151**	**559**	**891**	**–**	**–**	**4,601**
Sq. Ft.:	**133,294**	**–**	**–**	**–**	**–**	**133,294**
Commercial/Business (Sq. Ft. unless otherwise noted)						
Commercial/Business	1,654,408	910,130	1,504,896	235,817	–	4,305,251
Commercial	390,846	322,566	–	–	–	713,412
Village Services	100,000	189,688	25,904	–	–	315,592
Community Core	–	–	150,000	875,000	2,605,726	3,630,726
Golf Village	–	217,800	62,726	–	–	280,526
Golf Course (Acres)	159.3	–	–	–	–	159.3
Subtotal [2] Sq. Ft. :	**2,145,254**	**1,640,184**	**1,743,526**	**1,110,817**	**2,605,726**	**9,245,507**
Institutional/Recreational (Sq. Ft.)						
Learning Village	1,412,651	–	–	–	–	1,412,651
Community Park	40,531	–	–	–	–	40,531
Urban Regional Park	574,992	–	–	–	–	574,992
Subtotal Sq. Ft.:	**2,028,174**	**–**	**–**	**–**	**–**	**2,028,174**
Total DU:	**3,151**	**559**	**891**	**–**	**–**	**4,601**
Sq. Ft.:	**4,871,456**	**1,640,184**	**1,744,417**	**1,110,817**	**2,605,726**	**11,406,975**

[1] Includes existing military housing and other military recreation and support facilities.
[2] Not including the 159.3-acre Golf Course.
Notes: All figures are estimates. Figures in text are rounded for discussion purposes.
Source: *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)

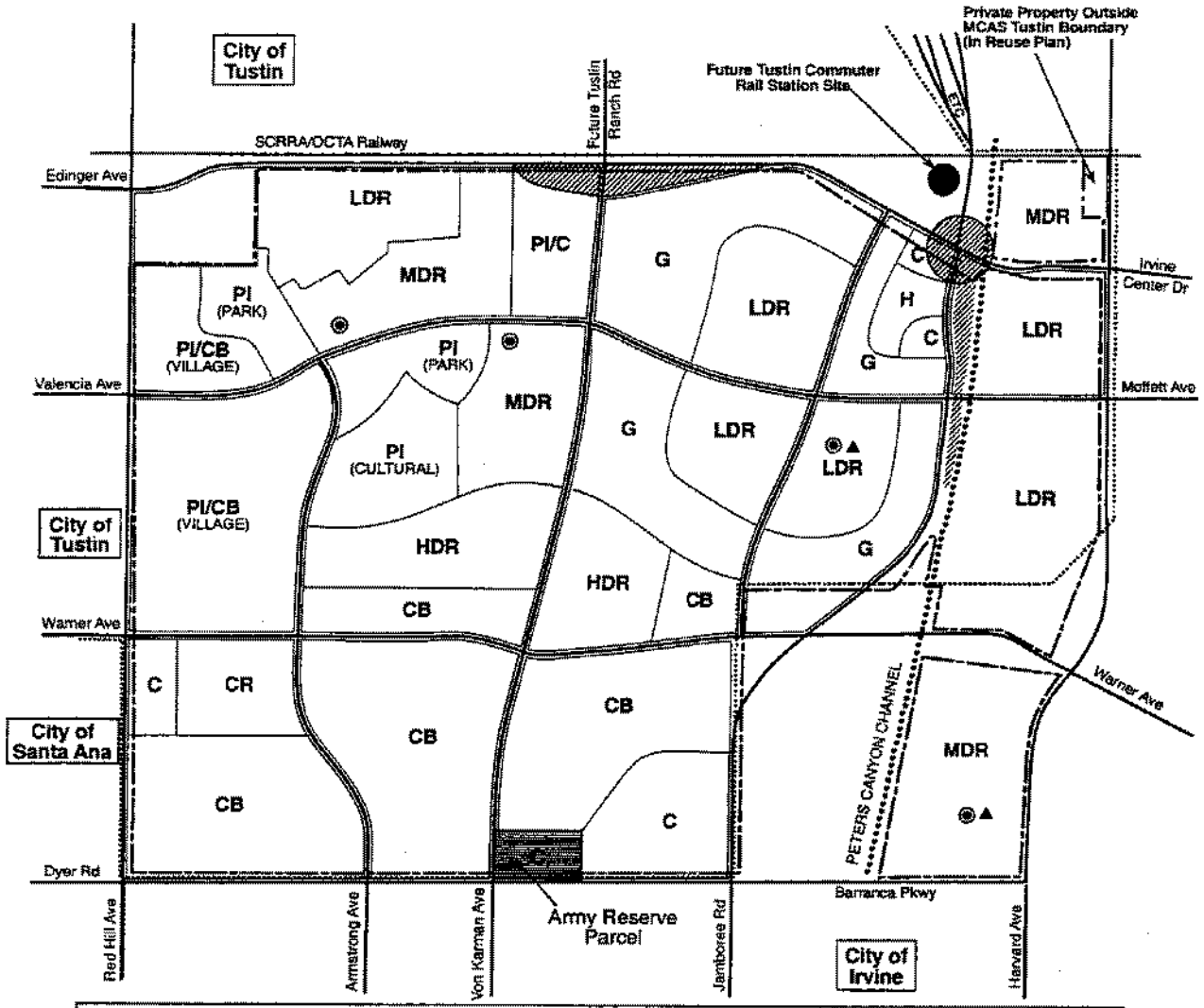
2.4.2 Alternative 2

Alternative 2 would result in development of the reuse plan area as described below. The specific uses and acreage for each are summarized in Table 2-9 and the location of uses is illustrated in Figure 2-2.

Table 2-9
Alternative 2 Buildout Potential

Land Use	Gross Acres	Non-residential Uses		Residential Uses		
		Floor Area Ratio	Total Floor Area (Sq. Ft.)	Existing DU	Potential New DU	Total DU[1]
Residential[1]						
Low Density (1-7 DU/Acre)	279.8	–	–	1,135	594	1,729
Medium Density (8-15 DU/Acre)[2]	191.5	–	–	402	1,730	2,132
High Density (16-25 DU/Acre)	87.0	–	–	0	1,309	1,309
Village Mixed-Use (16-25 DU/acre)	–	–	–	0	1,035	1,035
Subtotal	**558.3**	–	–	**1,537**	**4,668**	**6,205**
Commercial/Business						
Commercial/Business	309.8	0.35-0.54	5,623,867	–	–	–
Commercial[2]	78.4	0.32-0.50	1,258,884	–	–	–
Commercial/Recreation	22.9	0.35-0.50	437,560	–	–	–
Village Mixed-Use[3]	139.2	0.25-0.35	929,421	–	–	–
Hotel	12.1	0.40-0.65	339,768	–	–	–
Golf Course	177.0	–	–	–	–	–
Subtotal	**739.4**	–	**8,589,500**	–	–	–
Institutional/Recreational						
Institutional/Commercial	28.0	–	351,268	–	–	–
Cultural Center	55.8	0.15-0.25	570,636	–	–	–
Community Park	46.7	0.15-0.25	312,543	–	–	–
Subtotal	**130.5**	–	**1,234,447**	–	–	–
Right-of-Way						
Arterial Roadways	149.5	–	–	–	–	–
Drainage Facilities	28.5	–	–	–	–	–
Subtotal	**178.0**	–	–	–	–	–
Totals for Reuse Plan Area	**1,606.2**	–	**9,823,947**	**1,537**	**4,668**	**6,205**
Less Federal Transfer Property	16.7	–	173,804	1,537	–	–
Less Private Property	4.1	–	–	–	82	82
Total Surplus Disposal Acreage	1,585.4	–	9,650,143	–	4,586	6,123

[1] Residential densities may change within planning areas, but total number of dwelling units would not exceed 6,205. Includes two neighborhood parks and four schools.
[2] Includes 16.7-acre Army Reserve Center parcel.
[3] Includes approximately 41 acres of high density residential uses.
Notes: All acreage figures are estimates only. Figures in the text are rounded for discussion purposes.
Source: *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)



LDR	LOW DENSITY RESIDENTIAL (1-7 DU/ACRE)
MDR	MEDIUM DENSITY RESIDENTIAL (8-15 DU/ACRE)
HDR	HIGH DENSITY RESIDENTIAL (16-25 DU/ACRE)
C	COMMERCIAL
CB	COMMERCIAL BUSINESS
CR	COMMERCIAL RECREATION
PI/CB	VILLAGE MIXED USE/PUBLIC INSTITUTIONAL COMMERCIAL BUSINESS RESIDENTIAL MIXED USE
PI/C	PUBLIC INSTITUTIONAL/COMMERCIAL
$PI_{(PARK)}$	COMMUNITY PARK
$PI_{(CULTURAL)}$	CULTURAL CENTER
G	GOLF
H	HOTEL
◉	FUTURE SCHOOL SITE
▲	FUTURE NEIGHBORHOOD PARK SITE
•••••••••	REGIONAL RIDING AND HIKING TRAIL
—•—	MCAS TUSTIN BOUNDARY
·····•	IRVINE/TUSTIN/SANTA ANA BOUNDARY
	MILITARY (FEDERAL PROPERTY)
	ADDITIONAL ROAD RIGHT-OF-WAY

Notes:
1. Roadway alignments are conceptual.
2. Shaded areas represent conceptual alternative roadway alignment areas and interchange locations.
3. DU= Dwelling Units
4. Roads shown indicate road right-of-way.
5. The future school and neighborhood park sites are identified by general location only.
6. Within the City of Irvine, the density within the Medium Density Residential designation will not exceed 12.5 dwelling units per acre.
7. Previously identified as Alternative 1 in Draft EIS/EIR released in January 1998.

0 2000 Feet

Figure 2-2
Alternative 2
Arterial Grid Pattern/No Core/High Residential

Land Use and Development Potential

This alternative proposes a variety of urban uses with a focus on enhancing housing and cultural opportunities for the residents of Tustin, Irvine, and nearby communities.

The development of this alternative (see Table 2-9) would result in the most housing, the least non-residential floor area, the smallest amount of parkland, and would not contain a Community Core land use designation. A large Cultural Center would be developed under this alternative, and the northern blimp hangar would be incorporated, if financially feasible.

This alternative would permit reuse of some existing military structures and facilities. The northern blimp hangar could be reused to support regional cultural activities in the form of a special events center, museum, or other permitted uses. The southern blimp hangar would be demolished under this alternative.

Key components of the land use plan (see Figure 2-2) under this alternative include the following:

Residential (LDR, MDR, HDR)

A total of 6,205 residential units would be located in the southeast (adjacent to existing neighborhoods), in the east, in the northeast, and in the central portion of the reuse plan area. This total could include both reuse of existing military housing and construction of new housing, including low density dwellings at 1-7 units per acre (LDR); medium density single family and multi-family dwellings at 8-15 units per acre (MDR); and high density, multi-family dwellings at 16-25 units per acre (HDR). Of the total number of residential units planned under this alternative, 1,035 of the HDR dwelling units would be located within the Village Mixed-Use area (discussed below). Two eight-acre neighborhood parks and four schools serving the residents would be developed in parallel with the residential development (see Figure 2-2).

Commercial/Business (CB)

Employment would be generated by Commercial/Business activities consisting of high-tech, research and development, professional office, retail, and specialized employment and merchandising uses. These uses would be concentrated on approximately 310 acres in the southwestern portion of the reuse plan area, adjacent to similar existing urban development.

Commercial (C)

Employment would be generated by commercial activities consisting of regionally oriented retail and service commercial uses. These uses would be located in the southern portion of the reuse plan area (approximately 78 aeres), adjacent to similar existing urban development. Commercial development would also be permitted adjacent to the Hotel and Golf Course (described below). This includes the approximately 17-acre Army Reserve Center parcel, whicb would be developed as Commercial if DON disposes of the property in the future.

Commercial/Recreation (CR)

A Commercial/Recreation site would be created west of the intersection of Armstrong Avenue and Warner Avenue. This approximately 23-acre site could be developed as an entertainment park, sports facility, and/or other such attraction.

Village Mixed-Use (PI-CB (Village))

A mix of uses, consisting of Public Institutional and Commercial/Business (approximately 310 acres) and Residential uses (1,035 dwelling units), would be provided in the northwesterly portion of the reuse plan area near the Cultural Center and the Community Park, and near commercial, industrial, and residential districts. These uses would be accessible to surrounding residents. The majority of existing military structures and facilities identified for possible reuse are located within this area and would be incorporated into the Village Mixed-Use development.

Hotel (H)

A 500-room hotel and associated commercial uses would be developed in the eastern portion of the reuse plan area (approximately 12 acres) adjacent to the Golf Course and Commercial areas.

Golf Course (G)

A 177-acre, 18-hole golf course encircling low density residential development would be developed in the northeastern portion of the reuse plan area. The Golf Course would be privately owned, but also open to the general public.

Public Institutional/Commercial (PI/C)

A Public Institutional/Commercial district (approximately 28 acres) would be created on the eastern edge of the reuse plan area, northwest of the future extension of Tustin Ranch Road. A variety of institutional and commercial uses in the district would serve surrounding residential neighborhoods.

Park (PI (Park))

Approximately 47 acres of parkland would be located in the northern portion of the reuse plan area. Located between the Village Mixed-Use area, the Cultural Center, and Residential areas, this park would provide both a buffer and a link between the activities of these areas. The existing volleyball and basketball courts, a softball diamond, and soccer and football fields would be reused for the Park. The Park would also contain picnic areas, community center buildings, multi-purpose rooms, and supporting uses.

Cultural Center (PI (Cultural))

A Cultural Center encompassing 56 acres would be located in the center of the northern portion of the reuse plan area. The northern blimp hangar is located within this site. If financially feasible, the hangar would be incorporated into the center through adaptive use as a special events center (for sports events, cultural events, large concerts, conferences, conventions, etc), a sports center, a museum, restaurants, picnic areas, a video arcade, or an historic collections facility. The Cultural Center could contain a museum amusement-type rides and/or facilities, interpretive centers, and other similar uses. This multi-purpose facility would have year-round attractions and generate more employment than an urban regional park.

Buildout Characteristics

The Alternative 2 buildout characteristics, including the anticipated number of housing units and population, level of employment, and number of vehicle trips generated by major components, are summarized in Table 2-10.

Circulation

A street network would be created to serve the reuse plan area and would create through connections that would partially address regional circulation issues. This system (see Figure 2-2) would be designed in a grid pattern to maximize network efficiency (for both local traffic and through traffic).

Table 2-10
Alternative 2 Buildout Characteristics

Component	Development Characteristics [1]	Residential Population	Direct Jobs	Indirect and Induced Jobs	Average Daily Vehicle Trips
Residential	6,205 DU	16,408	35[2]	10	49,144
Commercial/Business	5.3 MSF	–	14,524	9,062	90,939
Commercial	1.6 MSF	–	1,802	584	52,116
Commercial/Recreation	0.4 MSF	–	727	235	10,939
Village Mixed-Use	0.9 MSF	–	1,726	506	30,169
Hotel	0.3 MSF	–	471	145	4,115
Golf Course	177 Acres	–	45	49	1,416
Public Institutional/Commercial	0.4 MSF	–	583	171	14,792
Park	0.3 MSF	–	519	166	234
Cultural Center	0.6 MSF	–	948	209	14,266

Notes: All figures are estimates only. Figures in the text are rounded for discussion purposes.
[1] MSF = million square feet of floor area
[2] School employees
Source: City of Tustin 1999e, 1999h

Valencia Avenue would be connected to Moffett Avenue, Warner Avenue would be extended directly through the reuse plan area (unlike in Alternative 1), Armstrong Avenue would be extended to Valencia Avenue, and Tustin Ranch Road would be connected to Von Karman Avenue. An as-yet unnamed road would connect Edinger Avenue/Irvine Center Drive to Warner Avenue between Jamboree Road and Tustin Ranch Road. Right-of-way and design improvements would be made to Red Hill Avenue, Barranca Parkway, Harvard Avenue, Jamboree Road, and Edinger Avenue/Irvine Center Drive. Other streets in the reuse plan area would connect to the arterial grid street network and be oriented to efficiently serve on-site neighborhoods and districts (Severyns Road, Landsdowne Road, improved Marble Mountain Road, etc.).

Development Phasing

Future development under Alternative 2 would occur incrementally over a 20+ year time frame. The level of development within any given phase would be tied to the availability of the infrastructure necessary to support such development. Table 2-11 shows the approximate anticipated timing of development. The future market demand forecasted for uses in the reuse plan area and the complexity and timing of environmental cleanup efforts would be the primary factors influencing this schedule.

Table 2-11
Alternative 2 Anticipated Development Pbasing

Land Uses	Year					Total
	By 2005 [1]	2006-2010	2011-2015	2016-2020	2020+	
Residential (DU)						
Low Density (1-7 DU/acre)	1,135	594	–	–	–	1,729
Medium Density (8-15 DU/acre)	1,125	865	142	–	–	2,132
High Density (16-25 DU/acre)	–	356	420	533	–	1,309
Village Mixed-Use (16-25 DU/acre)	–	–	1,035	–	–	1,035
Subtotal DU:	**2,260**	**1,815**	**1,597**	**533**	–	**6,205**
Commercial/Business (Sq. Ft. unless otherwise noted)						
Commercial/Business	2,066,330	1,600,200	1,750,000	207,337	–	5,623,867
Commercial	549,220	261,610	137,300	68,900	241,854	1,258,884
Commercial/Recreation	437,560	–	–	–	–	437,560
Village Mixed-Use	650,600	185,880	92,940	–	–	929,420
Hotel	–	339,768	–	–	–	339,768
Golf Course (Acres)	177.0	–	–	–	–	177
Subtotal Sq. Ft.:	**3,703,710**	**2,387,458**	**1,980,240**	**276,237**	**241,854**	**8,589,499**
Institutional/Recreational (Sq. Ft.)						
Public Institutional/Commercial	315,590	–	35,678	–	–	351,268
Cultural Center	570,636	–	–	–	–	570,636
Park	312,543	–	–	–	–	312,543
Subtotal Sq. Ft.:	**1,198,769**	–	**35,678**	–	–	**1,234,447**
Total DU:	**2,260**	**1,815**	**1,597**	**533**	–	**6,205**
Sq. Ft.:	**4,902,479**	**2,387,458**	**2,015,918**	**276,237**	**241,854**	**9,823,946**

[1] Includes existing military housing units and other military recreation and support facilities.
Notes: All figures are estimates only. Figures in the text are rounded for discussion purposes.
Source: *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)

Development required under this alternative would also include a variety of infrastructure improvements, such as roadways and utilities. Infrastructure improvements required under this alternative would generally occur in a phased manner, as needed to accommodate development. In conjunction with development within any phase, additional activities such as demolition; environmental mitigation; grading; construction of roadways, parking facilities, and structures; and installation of utilities would also occur.

2.4.3 Alternative 3

Alternative 3 would result in development of the reuse plan area as described below. The specific uses and acreage for each are summarized in Table 2-12 and the location of uses is illustrated in Figure 2-3.

Land Use and Development Potential

Alternative 3 proposes a variety of urban uses with a focus on enhancing employment and cultural opportunities for the residents of Tustin, Irvine, and nearby communities. The development of this alternative (see Table 2-12) would result in the least housing and the most commercial development.

A large Cultural Center on 87 acres would be developed under this alternative and would incorporate the northern blimp hangar, if financially feasible. This alternative also would include a small, 179-acre mixed-use Reserve Area similar to the Community Core, in Alternatives 1 and 2 and the largest Golf Course (187 acres) of the three reuse alternatives.

This alternative could include reuse of some existing military structures and facilities. The northern blimp hangar could be adaptively reused for activities related to the Cultural Center. The southern blimp hangar would be demolished.

Key components of the land use plan (see Figure 2-3) under this alternative include the following:

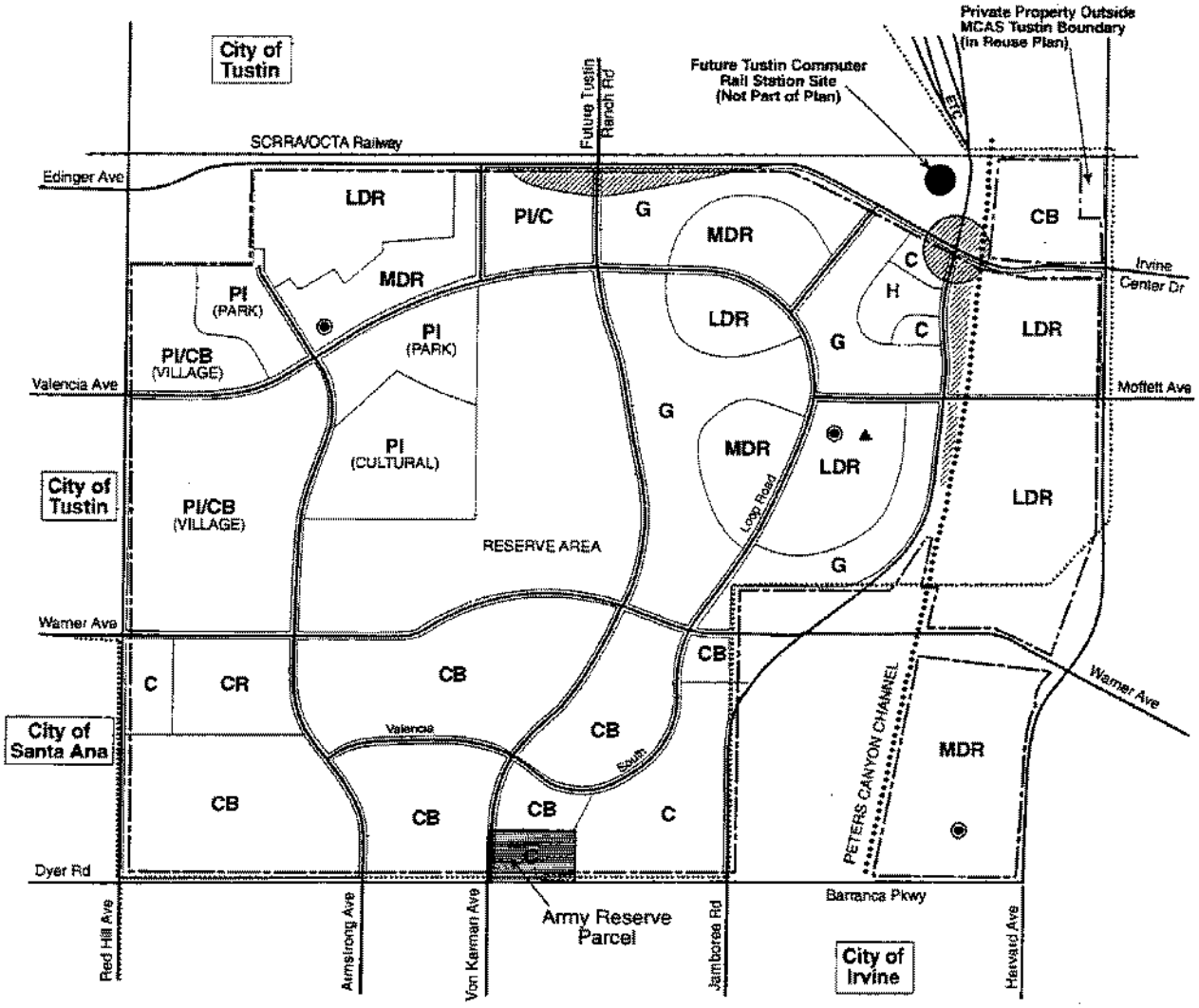
Residential (LDR, MDR)

A total of 4,340 residential units would be developed in the southeastern portion of the reuse plan area, adjacent to existing housing areas; in two pockets surrounded by the golf course; and in the northeastern portion of the site. This development would include both reuse of existing military housing and a variety of new housing types and densities, including low density dwellings at 1-7 units per acre (LDR) and medium density single-family and multi-family dwellings at 8-15 units per acre (MDR). Residential units would also be developed in the Reserve Area (630 medium density residential units) and in the Village Mixed-Use area (1,015 medium high density residential units). Two eight-acre neighborhood parks and two schools would be developed in conjunction with the residential development that they would serve (see Figure 2-3).

Table 2-12
Alternative 3 Buildout Potential

Land Use	Gross Acres	Non-residential Uses		Residential Uses		
		Floor Area Ratio	Total Floor Area (Sq. Ft.)	Existing DU	Potential New DU	Total DU [1]
Residential [1]						
Low Density (1-7 DU/acre)	231.8	–	–	1,135	325	1,460
Medium Density (8-15 DU/acre)	136.7	–	–	402	833	1,235
Reserve Area (8-15 DU/acre)	–	–	–	–	630	630
Village Mixed-Use (16-25 DU/acre)	–	–	–	–	1,015	1,015
Subtotal	**368.5**	–	–	**1,537**	**2,803**	**4,340**
Commercial/Business						
Commercial/Business	309.6	0.35-0.65	5,142,528	–	–	–
Commercial [2]	68.3	0.32-0.50	1,219,593	–	–	–
Commercial/Recreation	22.9	0.32-0.50	437,560	–	–	–
Village Mixed-Use [3]	136.6	0.25-0.35	712,467	–	–	–
Hotel	12.5	0.40-0.60	283,140	–	–	–
Reserve Area [4]	178.8	0.25-0.35	1,702,464	–	–	–
Golf Course	186.9	–	–	–	–	–
Subtotal	**915.5**	–	**9,497,752**	–	–	–
Institutional/Recreational						
Public Institutional/Commercial	36.1	0.33	467,037	–	–	–
Cultural Center	51.2	0.15-0.25	557,568	–	–	–
Park	51.3	0.15-0.25	394,218	–	–	–
Subtotal	**138.6**	–	**1,418,823**	–	–	–
Right-of-Way						
Arterial Roadways	155.1	–	–	–	–	–
Drainage Facilities	28.5	–	–	–	–	–
Subtotal	**183.6**	–	–	–	–	–
Totals for Reuse Plan Area	**1,606.2**	–	**10,916,575**	**1,537**	**2,803**	**4,340**
Less Federal Transfer Property	16.7	–	173,804	–	–	–
Less Private Property	4.1	–	–	–	82	82
Total Surplus Disposal Acreage	1,585.4	–	10,742,771	–	2,721	4,258

[1] Residential densities may change within planning areas, but total number of dwelling units would not exceed 4,340 units. Includes two neighborhood parks and three schools.
[2] Includes 16.7-acre Army Reserve Center parcel.
[3] Includes approximately 40 acres of high density residential.
[4] Includes approximately 42 acres of medium density residential.
Notes: All acreage figures are estimates only. Figures in the text are rounded for discussion purposes.
Source: *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)



LDR	LOW DENSITY RESIDENTIAL (1-7 DU/ACRE)
MDR	MEDIUM DENSITY RESIDENTIAL (8-15 DU/ACRE)
C	COMMERCIAL
CB	COMMERCIAL BUSINESS
CR	COMMERCIAL RECREATION
PI/CB	VILLAGE MIXED USE/PUBLIC INSTITUTIONAL COMMERCIAL BUSINESS RESIDENTIAL MIXED USE
PI/C	PUBLIC INSTITUTIONAL/COMMERCIAL
PI(PARK)	COMMUNITY PARK
PI(CULTURAL)	CULTURAL CENTER
G	GOLF
H	HOTEL
◉	FUTURE SCHOOL SITE
▲	FUTURE NEIGHBORHOOD PARK SITE

•••••••••	REGIONAL RIDING AND HIKING TRAIL
—— - ——	MCAS TUSTIN BOUNDARY
·····-·····	IRVINE/TUSTIN/SANTA ANA BOUNDARY
	MILITARY (FEDERAL PROPERTY)
	ADDITIONAL ROAD RIGHT-OF-WAY

Notes:
1. Roadway alignments are conceptual.
2. Shaded areas represent conceptual alternative roadway alignment areas and interchange locations.
3. DU= Dwelling Units
4. Roads shown indicate road right-of-way.
5. The future school and neighborhood park sites are identified by general location only.
6. Within the City of Irvine, the density within the Medium Density Residential designation will not exceed 12.5 dwelling units per acre.
7. Previously identified as Alternative 2 in Draft EIS/EIR released in January1998.

NORTH

0 2000 Feet

Figure 2-3
Alternative 3
Arterial Loop Pattern/Reserve Area/Low Residential

Commercial/Business (CB)

Employment would be generated by Commercial/Business activities consisting of industrial, research and development, professional office, retail, and specialized employment and merchandising uses. These uses would be concentrated in the western portion of the reuse plan area, adjacent to similar existing urban development.

Commercial (C)

Employment would be generated by commercial activities consisting of regionally oriented retail and service commercial uses. These uses would also be concentrated in the southwestern and southeastern portions of the reuse plan area, adjacent to similar existing urban development.

Commercial/Recreation (CR)

A 23-acre Commercial/Recreation site would be created at the western corner of Armstrong Avenue and Warner Avenue. This site would be developed as a theme park, sports facility, or similar attraction.

Village Mixed Use (PI/CB)

A mix of uses consisting of Public Institutional and Commercial/Business and Residential uses (1,015 dwelling units) would be provided in the northwesterly portion of the reuse plan area adjacent to the Cultural Center, Community Park, and Commercial and Residential districts.

Reserve Area

The central portion of the site is proposed for a 179-acre Reserve Area offering the opportunity to maintain flexibility for future large-scale, mixed-use development to offset high infrastructure and demolition costs. The Reserve Area is expected to develop later because of the need to remove existing runways and complete hazardous materials cleanup. Opportunities for both Residential and Commercial/Business uses in either separate or integrated projects would exist in this area, along with Institutional uses if desired.

Hotel (H)

A 500-room hotel and associated commercial uses would be developed in the eastern portion of the reuse plan area, adjacent to the golf course.

Golf Course (G)

An 187-acre, 18-hole golf course encircling low and medium density residential development would be located adjacent to the hotel in the southeastern portion of the reuse plan area. The golf course would be a privately-owned recreation facility that would also be open to the general public.

Public Institutional/Commercial (PI/C)

A mixed-use Public Institutional/Commercial area would be created on the northeastern edge of the reuse plan area. Uses in this area would include a variety of institutional and commercial uses serving surrounding residential areas.

Park (PI (Park))

A 51-acre Community Park would be developed in the northern portion of the site at the intersection of Valencia Avenue and Armstrong Avenue. Located between the Village Mixed-Use area, the Cultural Center, the Reserve Area, and Residential areas, this park would provide both a buffer and a link between the activities of these areas. Existing volleyball and basketball courts, a softball diamond, and soccer and football fields would be reused for the park facilities. The park would also contain picnic areas, community center buildings, multi-purpose rooms, and supporting uses.

Cultural Center (PI (Cultural))

A Cultural Center encompassing 51 acres would be located in the center of the northern portion of the site between the Community Park, Village Mixed-Use, and the Reserve Area. The northern blimp hangar is located within this site. If financially feasible, the hangar would be incorporated into the Cultural Center through adaptive use as a special events center (for sports events, cultural events, large concerts, conferences, conventions, etc.), a sports center, a museum, restaurants, picnic areas, a video arcade, or an historic collections facility. The Cultural Center could contain a museum, amusement-type rides and/or facilities, interpretive centers, and other similar uses. This multi-purpose facility would have year-round attractions and generate more employment than an urban regional park.

Buildout Characteristics

The Alternative 3 buildout characteristics, including the anticipated number of housing units and population, level of employment, and number of vehicle trips generated by major components, are summarized in Table 2-13.

Table 2-13
Alternative 3 Buildout Characteristics

Component	Development Characteristics [1]	Residential Population	Direct Jobs	Indirect and Induced Jobs	Average Daily Vehicle Trips
Residential	4,340 DU	11,898	35[2]	10	34,758
Commercial/Business	5.1 MSF	–	11,436	6,839	128,179
Commercial	1.2 MSF	–	2,753	891	31,139
Commercial/Recreation	0.4 MSF	–	727	235	10,939
Village Mixed-Use	0.7 MSF	–	1,322	474	20,051
Hotel	0.3 MSF	–	354	110	4,115
Golf Course	187 Acres	–	30	33	1,495
Public Institutional/Commercial	0.5 MSF	–	776	235	18,244
Reserve Area	1.7 MSF	–	3,747	2,255	31,771
Park	0.4 MSF	–	655	210	257
Cultural Center	0.6 MSF	–	926	204	13,939

Notes: All figures are estimates only. Figures in the text are rounded for discussion purposes.
[1] MSF = million square feet of floor area
[2] School employees
Source: City of Tustin 1999e, 1999h

Circulation

A street network would be created to serve the reuse plan area and would create through connections that would partially address regional circulation issues. This system (see Figure 2-3) would consist of a central loop pattern. A new road, identified here as Valencia South Loop Road, would create a central area and would provide direct access to Valencia Avenue, Moffett Avenue, Warner Avenue, Von Karman Avenue, Tustin Ranch Road, and Edinger Avenue/Irvine Center Drive via a connector road. Armstrong Avenue would be extended to Valencia Avenue. Warner Avenue would be made continuous through the reuse plan area. Moffett Avenue would be extended to Valencia South Loop Road. Tustin Ranch Road would be extended to Von Karman Avenue. Right-of-way and design improvements would also be made to Red Hill Avenue, Barranca Parkway, Harvard Avenue, Jamboree Road, and Edinger Avenue/ Irvine Center Drive. Existing streets within the

reuse plan area (Landsdowne Road, Severyns Road, Marble Mountain Road, etc.) would connect to the arterial street network and be oriented to efficiently serve on-site neighborhoods and districts.

Development Phasing

Future development based on Alternative 3 would occur incrementally over a 20+ year time frame. The level of development within any given phase would be tied to the availability of the infrastructure necessary to support such development. Table 2-14 shows the approximate anticipated timing of development. The future market demand forecasted for uses in the reuse plan area and the complexity and timing of environmental cleanup efforts would be the primary factors influencing this schedule.

Table 2-14
Alternative 3 Anticipated Development Phasing

Land Uses	Years					Total
	By 2005[1]	2006-2010	2011-2015	2016-2020	2020+	
Residential (DU)						
Low Density (1-7 DU/acre)	1,135	325	–	–	–	1,460
Medium Density (8-15 DU/acre)	220	1,015	–	–	–	1,235
Reserve Area (8-15 DU/acre)	–	–	630	–	–	630
Village Mixed-Use (16-25DU/acre)	–	475	540	–	–	1,015
Subtotal Sq. Ft.:	**1,355**	**1,815**	**1,170**	**–**	**–**	**4,340**
Commercial/Business (Sq. Ft. unless otherwise noted)						
Commercial/Business	1,993,060	1,245,000	1,645,000	259,468	–	5,142,528
Commercial	420,000	200,000	176,630	130,680	292,283	1,219,593
Commercial/Recreation	–	437,560	–	–	–	437,560
Village Mixed-Use	569,970	142,497	–	–	–	712,467
Commercial/Hotel	–	283,140	–	–	–	283,140
Reserve Area	–	–	100,000	1,602,464	–	1,702,464
Golf Course (acres)	186.90	–	–	–	–	186.90
Subtotal Sq. Ft.:	**2,983,030**	**2,308,197**	**1,921,630**	**1,992,612**	**292,283**	**9,497,752**
Institutional/Recreational (Sq. Ft.)						
Public Institutional/Commercial	467,037	–	–	–	–	467,037
Cultural Center	557,568	–	–	–	–	557,568
Park	394,218	–	–	–	–	394,218
Subtotal Sq. Ft.:	**1,418,823**	**–**	**–**	**–**	**–**	**1,418,823**
Total DU:	**1,355**	**1,815**	**1,170**	**–**	**–**	**4,340**
Sq. Ft.:	**4,401,853**	**2,308,197**	**1,921,630**	**1,992,612**	**292,283**	**10,916,575**

[1] Includes existing military housing units and other military recreation and support facilities.
Notes: All figures are estimates only. Figures in the text are rounded for discussion purposes.
Source: *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and *Errata* (City of Tustin 1998)

Development required under this alternative would also include a variety of infrastructure improvements, such as roadways and utilities. Infrastructure improvements required under this alternative would generally occur in a phased manner to accommodate development. In conjunction with development within any phase, additional activities such as demolition; environmental mitigation; grading; construction of roadways, parking facilities, and structures; and installation of utilities would also occur.

2.4.4 Alternative 4: No Action Alternative

The No Action Alternative evaluated in this EIS/EIR is in compliance with NEPA (40 C.F.R. § 1502.14(d)). No Action may be defined as the continuation of an existing plan, policy, or procedure, or as failure to implement an action. In any case, the No Action Alternative provides a benchmark to compare the magnitude of the environmental effects of the various alternatives. CEQA also requires a No Project Alternative (Cal. Code Regs., Title 14, § 15126.6(e) (1998)). The No Action Alternative and the No Project Alternative are equivalent in the context of this analysis, and will be considered together as the "No Action Alternative" in this document.

Under the No Action Alternative, the Marine Corps would retain ownership of approximately 1,585 acres of surplus real property. Except for the existing agricultural and building leases, all buildings would remain vacant and all other facilities would remain in place but would be unused. The Marine Corps property would remain under caretaker status as discussed in Chapter 1. The area would be fenced off, the unleased buildings would be boarded up, and a military security and maintenance staff of approximately ten persons would be present. The grounds, infrastructure, and buildings would be maintained and repaired as necessary to prevent deterioration. Site environmental cleanup would continue and be completed. No new construction would occur under this alternative except as allowed by existing lease authorization. Approximately 17 acres of property would be transferred to the Army Reserve.

2.5 ENVIRONMENTALLY PREFERABLE/ENVIRONMENTALLY SUPERIOR ALTERNATIVE

NEPA requires that a preferred alternative be identified; likewise, CEQA requires that an environmentally superior alternative be identified.

The No Action Alternative would have no significant unmitigable impacts and for the purposes of NEPA would be the "environmentally preferable" alternative. However, the No Action Alternative would be inconsistent with the basic premise of DBCRA, which is to reduce costs for installation operations and

maintenance. In addition, it would not allow the LRA to achieve its purpose of reusing DON property to offset the negative socioeconomic effects caused by BRAC with an economically viable and balanced reuse plan that would provide housing and employment opportunities, address existing community circulation and recreation deficiencies, and generate sufficient revenue to support the necessary investment in infrastructure. The No Action Alternative would result in continued caretaker activities and possibly continued lease operations. Furthermore, socioeconomic gains in terms of new jobs and increased revenue in the regions would not be realized.

To satisfy the purpose and need for the project under CEQA, the three reuse alternatives were compared. The comparative analysis (described in Sections 2.5.1, 2.5.2, and 2.5.3, below) was undertaken to determine the relative degree to which each alternative would avoid or substantially lessen the environmental effects of the proposed action and still meet the stated purpose and need. The alternative exhibiting the least overall impact was judged to be "environmentally superior."

2.5.1 Framework for Analysis

In order to identify an environmentally superior alternative, the environmental impacts analyzed in Chapter 4 (Environmental Consequences) were reviewed to determine the degree of impact exhibited by each alternative for each environmental issue area. In some instances, very little or no environmental impact was projected to occur; in other instances, significant, unmitigable impacts were anticipated. The comparative analysis was structured to focus on key differentiating factors — instances where the severity of an impact would be appreciably different among the alternatives. In doing so, it was determined that in several environmental issue areas the impacts were either very minor, or were in essence similar for all three reuse alternatives. These issues included:

- Land Use
- Utilities
- Biological Resources
- Agricultural Resources
- Soils and Geology
- Water Resources
- Hazardous Wastes, Substances and Materials
- Noise
- Cumulative Impacts
- Short-term Use and Long-term Productivity
- Growth-inducing Impacts

- Environmental Justice
- Environmental Health and Safety Risks to Children

In as much as these issues did not contribute to the process of comparing and differentiating between alternatives, they were eliminated from the comparative analysis.

2.5.2 Comparative Analysis of Alternatives

Through the process of elimination described in Section 2.5.1, above, the analysis was able to focus on key differentiating impacts from the following issue areas:

- Socioeconomics
- Aesthetics
- Public Facilities and Services
- Cultural and Paleontological Resources
- Traffic/Circulation
- Air Quality

It should be noted that, even within these six key issue areas, the focus was on only those specific impacts that served to distinguish among the three reuse alternatives. Following the guidance provided in the *Guidelines for the Implementation of CEQA* (Cal. Code Regs., Title 14, § 15126.6(d) (1998)), a matrix (Table 2-15) has been developed to display and compare specific discriminating impacts for each of the alternatives.

Drawing on information presented in Table 2-15, the discussion summarizes the comparison process for each of the six issue areas. There would be benefits associated with Socioeconomics and Public Facilities and Services (parkland only); the other issue areas are discussed in terms of adverse impacts.

Socioeconomics

Employment is considered a socioeconomic benefit as opposed to an environmental impact and because housing has been identified as a purpose of reuse by the LRA, provision of housing is regarded as a benefit as well. Alternative 2 would generate the most housing units, with more than 1,500 units than Alternative 1. Alternative 1 would generate 77,401 total jobs consisting of construction jobs, direct jobs in the reuse plan area and indirect/induced jobs (excluding

Table 2-15
Key Differentiating Factors Between Alternatives

Issue	Unit	Alternative 1	Alternative 2	Alternative 3
SOCIOECONOMIC BENEFITS				
Housing				
	DU	4,601	6,205	4,340
Employment				
Construction (Direct)	Jobs	37,468	35,208	33,100
Direct (Project)	Jobs	24,852	21,380	22,080
Indirect/Induced (non-construction)	Jobs	15,081	11,137	11,274
Total	Jobs	77,401	67,723	66,454
ENVIRONMENTAL IMPACTS				
Aesthetics				
Impacts to Prominent Visual Features	Blimp Hangars	If both features retained, no significant impact. Loss of one feature, not significant; loss of both features significant and unmitigable.	Loss of one feature, not significant; loss of both features significant and unmitigable.	Loss of one feature, not significant; loss of both features significant and unmitigable.
Cultural and Paleontological Resources				
Impacts to Historic Buildings	Blimp Hangars	Retain both features, no significant impact. But loss of one feature, not significant; loss of both features significant and unmitigable.	Loss of one hangar considered significant and unmitigable; loss of both features greater relative impact.	Loss of one hangar considered significant and unmitigable; loss of both features greater relative impact.
Public Services and Facilities				
Reduce Existing 107 ac. Parkland Deficit	Acres Created	85	56	51
	% of Need	79	52	48
Indirect Impacts to SAUSD[1]	No. of Students Generated	82/509	67/437	68/452
Traffic/Circulation				
Number of Significant, Unmitigable Intersections	Year 2005	0	1	0
Number of Significant, Unmitigable Intersections	Year 2020	1	4	3
Air Quality[2]				
CO	Pounds/day	12,795	17,317	17,773
ROC	Pounds/day	702	1,087	1,138
NO_X	Pounds/day	3,066	3,841	3,890
PM_{10}	Pounds/day	(37)	(18)	(17)
SO_X	Pounds/day	222	276	277

DU = Dwelling Units

[1] Figures represent low/high estimates based on two methods of estimating indirect/induced jobs generated in SAUSD.

[2] At buildout, operations emissions, net from baseline, including mitigation measures. All but PM_{10} would exceed SCAQMD thresholds.

construction). This number is almost 10,000 higher than the next closest alternative (Alternative 2). Given that the primary LRA goal is to create a reuse that would generate jobs and revenue to allow for other important goals (housing, parkland etc.), the alternative which best maximizes socioeconomic benefits would be Alternative 1.

Aesthetics

Possihle distinguishing impacts to aesthetics are related to the blimp hangars which are prominent visual features. Under Alternative 1, one or both of the hangars may be retained if financially feasible. Under Alternatives 2 and 3, the southern blimp hangar would be eliminated and the northern hangar would be retained, if feasible. While there would be a noticeable visual contrast with the loss of one hangar, the remaining hangar would continue to serve as a landmark and the visual impact would be less than significant. The loss of both hangars, however, would result in significant, unmitigable visual impacts. Therefore, from a visual perspective Alternative I may be preferred if at least one of the hangars is retained and if both hangars are eliminated under the other two alternatives. It should be noted that the financial feasibility of retaining the bangars is uncertain, even under Alternative 1, and the impacts may be identical under each.

Cultural and Paleoutulogical Resources

As with aesthetics, the key factors under this topic are the historic hangars because the eligible discontiguous historic districts would be eliminated under all three alternatives. Under one or Alternative 1, both hangars may be retained if financially feasible. This would avoid impacts to these historic features. Under Alternatives 2 and 3 the southern hangar would be eliminated which is a significant and unmitigable impact. If both hangars were to be eliminated there would be a greater relative impact. Therefore, Alternative 1 may have least relative impact to historic resources, but only if both hangars were to be retained. It is possible that it would not be financially feasible to retain either of the hangars under this alternative. If this is the case, there would be irreversible significant impacts to the hangars under each of the alternatives.

Public Facilities and Services

There are two items of distinction under this issue: parkland and the indirect impact of students generated in the Santa Ana Unified Scbool District (SAUSD). The LRA has identified an existing 107 acre parkland deficit in the City of Tustin. All three reuse alternatives would generate parkland, both a large-scale regional-serving park and several smaller neighborhood and community parks.

The community and neighborhood parks would generally serve the population associated with the reuse plan area. For comparison purposes, this analysis focuses on the more regional component only. Alternative 1 would create the largest urban regional park (85 acres) and Alternative 3 would have the smallest (51 acres). While all three alternatives would contribute a substantial amount (over 45 percent) to reduce the existing parkland deficit, Alternative 1 would involve the greatest percentage (almost 80 percent).

All three alternatives could indirectly induce students into the over-capacity SAUSD because employment could result in some new families locating within the district boundaries. There is no single method to calculate the amount of induced growth in the district, so a low and high range is provided in this analysis. The greatest number of students indirectly generated would be under Alternative 1. Given the wide range of possible fiscal impacts and funding services, should a funding deficit occur, it is anticipated that the SAUSD would not be negatively financially impacted under even Alternative 1. The need for new facilities is not confirmed and there is no facility design or location to be analyzed for physical impact in this document. The determination of physical impacts, and mitigation as appropriate, would be the responsibility of the SAUSD.

Traffic/Circulation

Traffic would be generated under all three alternatives that would impact the surrounding circulation system. Various mitigation measures are recommended at specific intersections to increase the flow of traffic and reduce or eliminate identified impacts. Even with mitigation, some intersections under all three alternatives would operate below acceptable levels of service. The greatest number of intersections considered unmitigable would be under Alternatives 2 and 3 which would each have three unmitigable intersections in year 2020 build-out. Alternative 1 would have the least relative traffic impact because it would have two significant unmitigable impacts at the build-out conditions.

Air Quality

As shown in Table 2-15, buildout operations air emissions under all three alternatives would exceed South Coast Air Quality Management District (SCAQMD) thresholds, for all analyzed pollutants except PM_{10}. The relative emission rates pounds/day illustrate that Alternative 1 would have the lowest net emissions and therefore the least impact.

2.5.3 Summary of Comparison

Alternative 1 would result in the greatest number of jobs and greatest amount of parkland which are two of the purposes of the reuse project. Further, it would have the least relative impact to aesthetics, traffic/circulation, and air quality. Financial feasibility may preclude the retention of either blimp hangar; however, under Alternative 1, the land use plan provides for incorporation of both features while under Alternatives 2 and 3 only the northern hangar is incorporated. While it may indirectly generate the greatest number of students to the SAUSD, the eventual impact to the district is uncertain at this time. On balance, Alternative 1 would result in the least overall adverse environmental impact and is therefore identified as the environmentally superior reuse alternative.

2.6 PERMIT REQUIREMENTS AND RELATED COORDINATION

Approvals and permits would be required for disposal and subsequent reuse of MCAS Tustin. Table 2-16 lists the federal, state, and local permits, policies, and actions that may be required, and lists the agencies that may use the information presented in the EIS/EIR to make decisions regarding issuance of permits or approvals.

2.7 COMPARISON OF ALTERNATIVES IMPACTS AND MITIGATION

NEPA and CEQA require that the EIS/EIR include a presentation of the alternatives in comparative form to define the issues and to provide a clear basis for choice among options by decision-makers and the public. Table 2-17 lists potential significant impacts, and corresponding mitigation measures for each alternative.

Table 2-16
Permits or Actions Potentially Required

Permit or Action	Requirement	Issuing Agency
City of Tustin General Plan and Zoning Amendments	Amendments required to accommodate proposed reuse development.	City of Tustin
City of Irvine General Plan and Zoning Amendments	Amendments required to accommodate proposed reuse development.	City of Irvine
Orange County Master Plan of Arterial Highways Amendment	Amendments required to accommodate various proposed improvements to the regional circulation system.	County of Orange
Clean Water Act (Section 404, 33 U.S.C. § 1251 et seq.)	Permit for dredging and disposal in jurisdictional wetlands.	Department of Interior - U.S. Fish and Wildlife Services; U.S. Environmental Protection Agency; U.S. Army Corps of Engineers; California Environmental Protection Agency; Regional Water Quality Control Board
Industrial Waste Discharge Permit	Required to discharge to the sewer system.	Orange County Sanitation District (No. 7)
Safe Drinking Water Act as amended, (42 U.S.C. § 300f to § 300j-26)	Required for public drinking water systems.	Irvine Ranch Water District; Regional Water Quality Control Board; County of Orange Health Department
Executive Order 11988 (Floodplain Management)	Required in construction or alteration of floodplain.	U.S. Army Corps of Engineers
Various Air Emissions Permits	Depending on future operations, individual permits may be necessary.	Air Resources Board; South Coast Air Quality Management District (SCAQMD)
Various City Permits	Temporary encroachment, use, and other permits required for infrastructure and other public works and improvements. Entitlement permits for certain uses.	City of Tustin Public Works Department and Community Development Department; City of Irvine
Various County Permits	Temporary encroachment, use, and other permits required for infrastructure and other public works and improvements. Eating establishments, swimming pools, solid waste facilities, and facilities that may generate hazardous materials.	County of Orange Public Works Department, Environmental Health Department, and various other departments
National Pollutant Discharge Elimination System (NPDES) Permit (Section 402, 33 U.S.C. § 1251 et seq.)	Required for discharge of pollutants from any point source into Waters of the U.S., and for stormwater discharges associated with industrial activity and from large and medium municipal storm sewer systems. Permits are not issued for individual projects. U.S. Environmental Protection Agency must approve any individual NPDES permit issued by the Regional Water Quality Control Board. Renewal of expired permits may be necessary. The specific permit required would depend on which reuse alternative is implemented.	U.S. Environmental Protection Agency; Regional Water Quality Control Board; Orange County Environmental Management Agency and City of Tustin (CAS 618030)
Resource Conservation Recovery Act (42 U.S.C. § 6901 et seq.), California Health and Safety Code (8 C.C.R.)	Compliance with remedial action plans relative to hazardous wastes and materials.	U.S. Environmental Protection Agency; California Department of Toxic Substances Control

Table 2-16. Continued

Permit or Action	Requirement	Regulatory/Lead Agency
Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 9601 et seq.)	Requires deed which contains hazardous substance information and covenant warranting necessary remedial action.	U.S. Environmental Protection Agency; California Department of Toxic Substances Control
National Historic Preservation Act Section 106 Compliance (16 U.S.C. § 470 et seq.)	Requires a Memorandum of Agreement to mitigate impacts to the blimp hangars and historic district.	State Historic Preservation Officer; Advisory Council on Historic Preservation
~~Endangered Species Act (16 U.S.C. § 1531 et seq.)~~	~~Requires consultation regarding potential effects on the federally listed endangered burrowing owl.~~	~~Department of the Interior - U.S. Fish and Wildlife Services~~
California Endangered Species Act	Requires consultation regarding potential effects on the state-listed endangered ~~California~~ southwestern pond turtle.	California Department of Fish and Game
Department of Transportation Act of 1966 (49 U.S.C. § 303(c)) Federal-Aid Highway Act (23 U.S.C. § 138)	Required for transportation improvement projects that may require the use of any park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance.	U.S. Department of Transportation
Temporary Encroachment Permit	Required for any work within the State right-of-way.	California Department of Transportation
General Order 88-A	Required when widening railroad - highway grade crossings.	California Public Utilities Commission

Table 2-17
Summary of Potential Sigoificant Environmental Consequences and Mitigation Measures

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Land Use				
No significant impacts are expected; no mitigation measures are required.	**Impact.** Land use categories would not be consistent with the *City of Tustin General Plan*, the Tustin zoning ordinance, the *City of Irvine General Plan*, and Irvine zoning ordinance. Planned development may have compatibility impacts between land uses. **Mitigation LU-1.** The City of Tustin General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Tustin. **Mitigation LU-2.** The City of Irvine General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Irvine.	**Impact.** Land use categories would not be consistent with the *City of Tustin General Plan*, the Tustin zoning ordinance, the *City of Irvine General Plan*, and Irvine zoning ordinance. Planned development may have compatibility impacts between land uses. **Mitigation LU-1.** The City of Tustin General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Tustin. **Mitigation LU-2.** The City of Irvine General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Irvine.	**Impact.** Land use categories would not be consistent with the *City of Tustin General Plan*, the Tustin zoning ordinance, the *City of Irvine General Plan*, and Irvine zoning ordinance. Planned development may have compatibility impacts between land uses. **Mitigation LU-1.** The City of Tustin General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Tustin. **Mitigation LU-2.** The City of Irvine General Plan and zoning ordinance shall be amended to be consistent with planned land uses. Any zoning ordinance shall include site design measures to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of the development on the site is at least similar to other master planned areas in Tustin and other adjacent cities. Responsibility. City of Irvine.	No significant impacts are expected; no mitigation measures are required.
Socioeconomics				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	**Impact.** The beneficial effect associated with provision of jobs and housing would be precluded. **Mitigation.** Development of some type of reuse.
Utilities				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.

Table 2-17. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Public Services and Facilities				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected: no mitigation measures are required.	**Impact**. The beneficial effect associated with development of parkland would be precluded. **Mitigation**. Development of some type of reuse.
Aesthetics				
No significant impacts are expected; no mitigation measures are required.	**Impact**. There is the potential for visual impacts if landscaping and urban design do not fully address aesthetic considerations; i.e., do not maintain view corridors, provide screening, or incorporate landscaping. **Mitigation Vis-1.** An urban design plan shall be adopted to provide for distinct and cohesive architectural and landscape design, features and treatments. and harmony with existing adjacent landscape. Responsibility. City of Tustin. **Impact**. The loss of both hangars would be a significant unmitigable visual impact.	**Impact.** There is the potential for visual impacts if landscaping and urban design do not fully address aesthetic considerations; i.e., do not maintain view corridors, provide screening, or incorporate landscaping. **Mitigation Vis-1**. An urban design plan shall be adopted to provide for distinct and cohesive architectural and landscape design, features and treatments. and harmony with existing adjacent landscape. Responsibility. City of Tustin. **Impact.** The loss of both hangars would be a significant unmitigable visual impact.	**Impact**. There is the potential for visual impacts if landscaping and urban design do not fully address aesthetic considerations; i.e., do not maintain view corridors, provide screening, or incorporate landscaping. **Mitigation Vis-1.** An urban design plan shall be adopted to provide for distinct and cohesive architectural and landscape design, features and treatments. and harmony with existing adjacent landscape. Responsibility. City of Tustin. **Impact.** The loss of both hangars would be a significant unmitigable visual impact.	No significant impacts are expected: no mitigation measures are required.
Cultural and Paleontological Resources				
Impact. Transfer of the Historic District would lessen the legal protection afforded this historic property. This would be a significant impact under NEPA that cannot be fully mitigated. **Mitigation**. Compliance with Section 106 of the NHPA (16 U.S.C. § 470 et seq.). Responsibility: DON	**Impact 1.** Grading in the four-acre parcel that has not been surveyed may result in impacts to archaeological resources, if they are present. **Mitigation Arch-1.** The area shall be surveyed to determine the presence/absence of archaeological resources. Responsibility. Project Proponent **Impact 2.** Grading in the reuse plan area may uncover buried archaeological resources. **Mitigation Arch-2**. If buried resources are found during grading, a qualified archaeologist would need to assess the site significance and perform appropriate mitigation including testing or data recovery. Native American consultation should also be initiated. Responsibility. City of Tustin, City of Irvine. **Impact 3**. All of the two discontinuous historic districts would be eliminated. The intent is to retain both hangars, if financially feasible, but one or both of the blimp hangars could be eliminated.	**Impact 1**. Grading in the four-acre parcel that has not been surveyed may result in impacts to archaeological resources, if they are present. **Mitigation Arch-1**. The area shall be surveyed to determine the presence/absence of archaeological resources. Responsibility. Project Proponent **Impact 2**. Grading in the reuse plan area may uncover buried archaeological resources. **Mitigation Arch-2**. If buried resources are found during grading, a qualified archaeologist would need to assess the site significance and perform appropriate mitigation including testing or data recovery. Native American consultation should also be initiated. Responsibility. City of Tustin, City of Irvine. **Impact 3**. All of the two discontinuous historic districts would be eliminated. Both of the blimp hangars could be eliminated.	**Impact 1**. Grading in the four-acre parcel that has not been surveyed may result in impacts to archaeological resources, if they are present. **Mitigation Arch-1**. The area shall be surveyed to determine the presence/absence of archaeological resources. Responsibility. Project Proponent **Impact 2**. Grading in the reuse plan area may uncover buried archaeological resources. **Mitigation Arch-2**. If buried resources are found during grading, a qualified archaeologist would need to assess the site significance and perform appropriate mitigation including testing or data recovery. Native American consultation should also be initiated. Responsibility. City of Tustin. City of Irvine. **Impact 3**. All of the two discontinuous historic districts would be eliminated. Both of the blimp hangars could be eliminated.	**Impact**. Blimp hangars may deteriorate. **Mitigation Hist-2**. An historic properties maintenance plan will be prepared and implemented.

Table 2-17. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Cultural and Paleontological Resources Continued	**Mitigation Hist-1.** ~~Negotiate MOA.~~ An Historic American Building Survey will be conducted. Responsibility. DON~~, City of Tustin~~ **Mitigation Hist-2.** Copies of plans, architectural drawings, and other archival materials and records concerning the buildings and structures that made up the original Navy lighter-than-air blimp facility will be donated to a local curation facility. Responsibility. DON. **Mitigation Hist-3.** A substantive effort will be made to determine whether there is an economically viable adaptive use of Hangar 28 and Hangar 29. Responsibility. The City of Tustin and County of Orange. **Mitigation Hist-4.** If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant. Responsibility. DON. **Mitigation Hist-5.** If an economically viable adaptive use of the Hangar 28 complex is not identified through a marketing effort, the following measures will be required: (a) an illustrated written history on MCAS Tustin shall be prepared; (b) a professional-quality illustrated interpretive exhibit shall be prepared; and (c) a professional-quality documentary video shall be prepared for a one-time distribution and outreach program. Responsibility. The City of Tustin and County of Orange. **Impact.** Earthwork activities may destroy geological deposits within which unique paleontological resources are buried. **Mitigation Paleo-1.** Applicants of individual development projects shall comply with the requirements established in a PRMP prepared for the site. Responsibility. City of Tustin, City of Irvine	**Mitigation Hist-1.** ~~Negotiate MOA.~~ An Historic American Building Survey will be conducted. Responsibility. DON~~, City of Tustin~~ **Mitigation Hist-2.** Copies of plans, architectural drawings, and other archival materials and records concerning the buildings and structures that made up the original Navy lighter-than-air blimp facility will be donated to a local curation facility. Responsibility. DON. **Mitigation Hist-3.** A substantive effort will be made to determine whether there is an economically viable adaptive use of Hangar 28 and Hangar 29. Responsibility. The City of Tustin and County of Orange. **Mitigation Hist-4.** If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant. Responsibility. DON. **Mitigation Hist-5.** If an economically viable adaptive use of the Hangar 28 complex is not identified through a marketing effort, the following measures will be required: (a) an illustrated written history on MCAS Tustin shall be prepared; (b) a professional-quality illustrated interpretive exhibit shall be prepared; and (c) a professional-quality documentary video shall be prepared for a one-time distribution and outreach program. Responsibility. The City of Tustin and County of Orange. **Impact.** Earthwork activities may destroy geological deposits within which unique paleontological resources are buried. **Mitigation Paleo-1.** Applicants of individual development projects shall comply with the requirements established in a PRMP prepared for the site. Responsibility. City of Tustin, City of Irvine	**Mitigation Hist-1.** ~~Negotiate MOA.~~ An Historic American Building Survey will be conducted. Responsibility. DON~~, City of Tustin~~ **Mitigation Hist-2.** Copies of plans, architectural drawings, and other archival materials and records concerning the buildings and structures that made up the original Navy lighter-than-air blimp facility will be donated to a local curation facility. Responsibility. DON. **Mitigation Hist-3.** A substantive effort will be made to determine whether there is an economically viable adaptive use of Hangar 28 and Hangar 29. Responsibility. The City of Tustin and County of Orange. **Mitigation Hist-4.** If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant. Responsibility. DON. **Mitigation Hist-5.** If an economically viable adaptive use of the Hangar 28 complex is not identified through a marketing effort, the following measures will be required: (a) an illustrated written history on MCAS Tustin shall be prepared; (b) a professional-quality illustrated interpretive exhibit shall be prepared; and (c) a professional-quality documentary video shall be prepared for a one-time distribution and outreach program. Responsibility. The City of Tustin and County of Orange. **Impact.** Earthwork activities may destroy geological deposits within which unique paleontological resources are buried. **Mitigation Paleo-1.** Applicants of individual development projects shall comply with the requirements established in a PRMP prepared for the site. Responsibility. City of Tustin, City of Irvine	

Table 2-17. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Cultural and Paleontological Resources Continued	**Mitigation Paleo-2**. Prior to the issuance of a grading permit, written evidence shall be provided to each city that a county-certified paleontologist has been retained to conduct salvage excavation of unique paleontological resources if they are found. Responsibility. Project proponent.	**Mitigation Paleo-2**. Prior to the issuance of a grading permit, written evidence shall be provided to each city that a county-certified paleontologist has been retained to conduct salvage excavation of unique paleontological resources if they are found. Responsibility. Project proponent.	**Mitigation Paleo-2**. Prior to the issuance of a grading permit, written evidence shall be provided to each city that a county-certified paleontologist has been retained to conduct salvage excavation of unique paleontological resources if they are found. Responsibility. Project proponent.	
Biological Resources				
No significant impacts are expected; no mitigation measures are required.	**Impact 1**. Approximately ~~16.5~~ 12.8 acres of jurisdictional waters would be indirectly impacted by channel improvements by OCFCD. Another 16.2 acres of jurisdictional waters, of which ~~3.65~~ 2.4 acres are classified as vegetated or seasonal wetlands, would be directly impacted by reuse. **Mitigation Bio-1**. Section 404, Section 1601, and other necessary permits shall be obtained. A replacement ratio shall be determined in consultation with regulatory agencies. Responsibility. OCFCD, project proponents as appropriate. **Impact.** Several southwestern pond turtles would be directly significantly impacted. **Mitigation Bio-2**. A relocation site for turtles captured on site shall be identified. Responsibility. Project proponent. **Mitigation Bio-3.** Permits from the CDFG shall be obtained for live-capture and transportation of the turtles. Responsibility. Project proponent. **Mitigation Bio-4.** An agreement shall be negotiated with the CDFG or other agency, as appropriate, for contribution of funds to improve, restore, or create the relocation site as turtle habitat. Responsibility. City of Tustin and/or project proponent.	**Impact 1**. Approximately ~~16.5~~ 128 acres of jurisdictional waters would be indirectly impacted by channel improvements by OCFCD. Another 16.2 acres of jurisdictional waters, of which ~~3.65~~ 2.4 acres are classified as vegetated or seasonal wetlands, would be directly impacted by reuse. **Mitigation Bio-1**. Section 404, Section 1601, and other necessary permits shall be obtained. A replacement ratio shall be determined in consultation with regulatory agencies. Responsibility. OCFCD, project proponents as appropriate. **Impact.** Several southwestern pond turtles would be directly significantly impacted. **Mitigation Bio-2.** A relocation site for turtles captured on site shall be identified. Responsibility. Project proponent. **Mitigation Bio-3**. Permits from the CDFG shall be obtained for live-capture and transportation of the turtles. Responsibility. Project proponent. **Mitigation Bio-4**. An agreement shall be negotiated with the CDFG or other agency, as appropriate, for contribution of funds to improve, restore, or create the relocation site as turtle habitat. Responsibility. City of Tustin and/or project proponent.	**Impact 1**. Approximately ~~16.5~~ 12.8 acres of jurisdictional waters would be indirectly impacted by channel improvements by OCFCD. Another 16.2 acres of jurisdictional waters, of which ~~3.65~~ 2.4 acres are classified as vegetated or seasonal wetlands, would be directly impacted by reuse. **Mitigation Bio-1**. Section 404, Section 1601, and other necessary permits shall be obtained. A replacement ratio shall be determined in consultation with regulatory agencies. Responsibility. OCFCD, project proponents as appropriate. **Impact**. Several southwestern pond turtles would be directly significantly impacted. **Mitigation Bio-2**. A relocation site for turtles captured on site shall be identified. Responsibility. Project proponent. **Mitigation Bio-3.** Permits from the CDFG shall be obtained for live-capture and transportation of the turtles. Responsibility. Project proponent. **Mitigation Bio-4.** An agreement shall be negotiated with the CDFG or other agency, as appropriate, for contribution of funds to improve, restore, or create the relocation site as turtle habitat. Responsibility. City of Tustin and/or project proponent. .	No significant impacts are expected; no mitigation measures are required.
Agricultural Resources				
No significant impacts are expected; no mitigation measures are required.	**Impact**. Existing farmland would no longer be cultivated and Prime Farmland and Farmland of Statewide Importance would be eliminated. There would be a significant, unmitigable impact.	**Impact**. Existing farmland would no longer be cultivated and Prime Farmland and Farmland of Statewide Importance would be eliminated. There would be a significant, unmitigable impact.	**Impact**. Existing farmland would no longer be cultivated and Prime Farmland and Farmland of Statewide Importance would be eliminated. There would be a significant, unmitigable impact.	No significant impacts are expected; no mitigation measures are required.

Table 2-17. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Soils and Geology				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.
Water Resources				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.
Hazardous Wastes, Substances, and Materials				
No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.	No significant impacts are expected; no mitigation measures are required.
Traffic/Circulation				
No significant impacts are expected; no mitigation measures are required.	**Impact**. There would be potential short-term delay and road closures during construction. There would be decreased levels of service at certain intersections and road segments. **Mitigation T/C-1**. Provide traffic control plans and communication to minimize disruption. Responsibility. City of Tustin, City of Irvine **Mitigation T/C-21**. Ensure that the intersection improvement indicated in Tables 4.12-87 and 4.12-9 are implemented ~~(Interim Development)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-2. Ensure that the intersection improvements indicated in Table 4.12-9 are implemented (Buildout).**~~ ~~Responsibility. City of Tustin, City of Irvine.~~ **Mitigation T/C-3.** Contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Table 4.12-~~108. (Buildout)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-5. Implement necessary roadway improvements for the affected locations within the City of Santa Ana jurisdiction, in accordance with the Tustin/ Santa Ana Improvement Agreement (TSIA). For deficient Santa Ana intersections that are not covered in the TSIA, the City of Tustin and City of Irvine, as applicable, shall participate in these improvements on a fair share basis (Interim Development and Buildout).**~~	**Impact**. There would be decreased levels of service at certain intersections and road segments. **Mitigation T/C-108**. Ensure that the intersection improvements indicated in Tables 4.12-17 and 4.12-18 are implemented ~~(Interim Development)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-9. Ensure that the intersection improvements indicated in Table 4.12-18 are implemented (Buildout).**~~ ~~**Responsibility. City of Tustin, City of Irvine.**~~ **Mitigation T/C-1110**. Contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Tables 4.17-17a and 4.12-19. ~~(Buildout)~~. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-84**. Identify alternative changes that provide an equivalent level of mitigation, as shown in Tables 4.12-17, 4.12-17a, and 4.12-18~~applicable to the impacted jurisdiction (Buildout)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-5. Implement necessary roadway improvements for the affected locations within the City of Santa Ana jurisdiction, in accordance with the Tustin/ Santa Ana Improvement Agreement (TSIA). For deficient Santa Ana intersections that are not covered in the TSIA, the City of Tustin and City of Irvine, as applicable, shall participate in these improvements on a fair share basis (Interim Development and Buildout).**~~	**Impact**. There would be decreased levels of service at certain intersections and road segments. **Mitigation T/C-1311**. Ensure that the intersection improvements indicated in Table 4.12-26 are implemented (Interim Development). Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-12. Ensure that the intersection improvements indicated in Table 4.12-27 are implemented (Buildout).**~~ ~~**Responsibility. City of Tustin, City of Irvine.**~~ **Mitigation T/C-1413**. Contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Tables 4.12-26a and 4.12-28. ~~(Buildout)~~. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-84**. Identify alternative changes that provide an equivalent level of mitigation, as shown in Tables 4.12-26, 4.12-27, 4.12-28, and 4.12-29~~applicable to the impacted jurisdiction (Buildout)~~. Responsibility. City of Tustin, City of Irvine. ~~**Mitigation T/C-5. Implement necessary roadway improvements for the affected locations within the City of Santa Ana jurisdiction, in accordance with the Tustin/ Santa Ana Improvement Agreement (TSIA). For deficient Santa Ana intersections that are not covered in the TSIA, the City of Tustin and City of Irvine, as applicable shall participate in these improvements on a fair share basis (Interim Development and Buildout).**~~	**Impact**. Would not create through connections to particularly address regional circulation issue. **Mitigation**. Development of some type of reuse.

Table 2-17. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
	~~Responsibility. City of Tustin, City of Irvine.~~	~~Responsibility. City of Tustin, City of Irvine.~~	~~Responsibility. City of Tustin, City of Irvine.~~	
Traffic/Circulation Continued	~~**Mitigation T/C-6. Develop financing mechanisms for needed roadway improvements within the reuse plan area (Interim Development and Buildout).**~~ ~~Responsibility. City of Tustin, City of Irvine.~~ **Mitigation T/C-4.** Ensure that all on-site circulation improvements are phased as shown in Table 4.12-10. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-5.** Prior to approval of development permit or vesting map, a project developer shall enter into an agreement to assign improvements and fair share mechanism. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-6.** Monitor all development and cumulative ADTs to ensure all roadway improvements in Table 4.12-10 are constructed prior to approval of additional projects. Responsibility. City of Tustin, City of Irvine. **Mitigation T/C-7.** Adopt a trip budget to assist in monitoring cumulative ADTs. Responsibility. City of Tustin. **Mitigation T/C-~~8~~8.** Identify alternative changes that provide an equivalent level of mitigation as shown in Tables 4.12-7, 4.12-8 and 4.12-9, as applicable to the impacted ~~jurisdiction (Buildout).~~ Responsibility. City of Tustin. City of Irvine. **Mitigation T/C-~~9~~9.** The City of Tustin will enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements are constructed pursuant to improvement programs established by the respective jurisdiction (Interim Development and Buildout). Responsibility. City of Tustin.	~~**Mitigation T/C-6. Develop financing mechanisms for needed roadway improvements within the reuse plan area (Interim Development and Buildout).**~~ ~~Responsibility. City of Tustin, City of Irvine.~~ **Mitigation T/C-~~9~~7.** The City of Tustin will enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements are constructed pursuant to improvement programs established by the respective jurisdiction (Interim Development and Buildout). Responsibility. City of Tustin. **Mitigation T/C-12.** Ensure that all on-site circulation improvements are phased as shown in Table 4.12-19a. Responsibility. City of Tustin. Mitigation T/C-5 through T/C 9 for Alternative 1 shall be implemented with tables appropriate for Alternative 2.	~~**Mitigation T/C-6. Develop financing mechanisms for needed roadway improvements within the reuse plan area (Interim Development and Buildout).**~~ ~~Responsibility. City of Tustin, City of Irvine.~~ **Mitigation T/C-~~9~~7.** The City of Tustin will enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements are constructed pursuant to improvement programs established by the respective jurisdiction (Interim Development and Buildout). Responsibility. City of Tustin. **Mitigation T/C-15.** Ensure that all on-site circulation improvements are phased as shown on Table 4.12-29.	

Table 2-17. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Air Quality				
No significant impacts are expected; no mitigation measures are required.	**Impact**. Construction activities would result in PM_{10} and ROC emissions that would be significant and not fully mitigable. **Mitigation AQ-1.** Project proponent shall be required to implement specific construction control measures, if not already required by the SCAQMD under Rule 403. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-2.** Project proponent shall be required to use low VOC architectural coatings for all painting operations unless determined to be infeasible. Responsibility. City of Tustin, City of Irvine. **Impact**. Operational air quality impacts would be significant and not fully mitigable. **Mitigation AQ-3.** Prior to the issuance of development permits for new or expanded non-residential projects with 100 or more employees, TDM measures shall be imposed. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-4.** If not required under individual TDM plans, other transportation management measures shall be implemented. Responsibility. City of Tustin. City of Irvine.	**Impact.** Construction activities would result in PM_{10} and ROC emissions that would be significant and not fully mitigable. **Mitigation AQ-1**. Project proponent shall be required to implement specific construction control measures, if not already required by the SCAQMD under Rule 403. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-2**. Project proponent shall be required to use low VOC architectural coatings for all painting operations unless determined to be infeasible. Responsibility. City of Tustin, City of Irvine. **Impact.** Operational air quality impacts would be significant and not fully mitigable. **Mitigation AQ-3**. Prior to the issuance of development permits for new or expanded non-residential projects with 100 or more employees, TDM measures shall be imposed. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-4**. If not required under individual TDM plans, other transportation management measures shall be implemented. Responsibility. City of Tustin, City of Irvine.	**Impact**. Construction activities would result in PM_{10} and ROC emissions that would be significant and not fully mitigable. **Mitigation AQ-1**. Project proponent shall be required to implement specific construction control measures. if not already required by the SCAQMD under Rule 403. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-2.** Project proponent shall be required to use low VOC architectural coatings for all painting operations unless determined to be infeasible. Responsibility. City of Tustin, City of Irvine. **Impact**. Operational air quality impacts would be significant and not fully mitigable. **Mitigation AQ-3**. Prior to the issuance of development permits for new or expanded non-residential projects with 100 or more employees, TDM measures shall be imposed. Responsibility. City of Tustin, City of Irvine. **Mitigation AQ-4.** If not required under individual TDM plans, other transportation management measures shall be implemented. Responsibility. City of Tustin, City of Irvine.	**Impact**. The majority of existing air pollutant emissions associated with the site would be eliminated and no new emissions would be generated. **Mitigation.** No mitigation is required because the impact is beneficial.
Noise				
No significant impacts are expected; no mitigation measures are required.	**Impact**. The proposed extension of Tustin Ranch Road could expose existing residences to noise levels greater than 65 dB CNEL. Some ~~existing and planned on-site housing units would~~ existing residential units within the reuse area may experience noise levels greater than 65 dB CNEL. With reuse and future development. noise levels at residential and park locations adjacent to Warner Avenue may exceed 65 dB CNEL. **Mitigation N-1**. Prior to reuse of any existing residential units, installation of noise attenuation barriers, insulation, or similar devices shall be installed, where necessary and feasible. Responsibility. City of Tustin, the City of Irvine.	**Impact**. The proposed extension of Tustin Ranch Road could expose existing residences to noise levels greater than 65 dB CNEL. Some ~~existing and planned on-site housing units would~~ existing residential units within the reuse area may experience noise levels greater than 65 dB CNEL with reuse and future development. noise levels at residential (park locations adjacent to Warner Avenue may exceed 65 dB CNEL. **Mitigation N-1**. Prior to reuse of any existing residential units, installation of noise attenuation barriers, insulation. or similar devices shall be installed, where necessary and feasible. Responsibility. City of Tustin, the City of Irvine.	**Impact.** The proposed extension of Tustin Ranch Road could expose existing residences to noise levels greater than 65 dB CNEL. Some ~~existing and planned on-site housing units would~~ existing residential units within the reuse area may experience noise levels greater than 65 dB CNEL with reuse and future development. noise levels at residential (park locations adjacent to Warner Avenue may exceed 65 dB CNEL. **Mitigation N-1**. Prior to reuse of any existing residential units, installation of noise attenuation barriers, insulation. or similar devices shall be installed, where necessary and feasible. Responsibility. City of Tustin. the City of Irvine.	No significant impacts are expected; no mitigation measures are required.

Table 2-17. Continued

Disposal Alternative	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Noise Continued	**Mitigation N-2.** Potential noise impacts from the grade-separated intersection of Tustin Ranch Road at Edinger Avenue shall be evaluated, and noise attenuation measures shall be incorporated into the intersection design. Responsibility. City of Tustin. **Mitigation N-3.** Standards shall be adopted for new development including policies that require noise attenuation. Responsibility. City of Tustin, the City of Irvine. **Mitigation N-4.** Prior to the connection of Warner Avenue to the North or South Loop Road, a noise study shall be completed to assess impacts. If mitigation is required, the City of Tustin and City of Irvine shall enter into an agreement which allocates mitigation cost on a fair share basis. Responsibility. City of Tustin.	Mitigation N-2. Potential noise impacts from the grade-separated intersection of Tustin Ranch Road at Edinger Avenue shall be evaluated, and noise attenuation measures shall be incorporated into the intersection design. Responsibility. City of Tustin. **Mitigation N-3.** Standards shall be adopted for new development including policies that require noise attenuation. Responsibility. City of Tustin, the City of Irvine. **Mitigation N-4.** Prior to the connection of Warner Avenue to the North or South Loop Road, a noise study shall be completed to assess impacts. If mitigation is required, the City of Tustin and City of Irvine shall enter into an agreement which allocates mitigation cost on a fair share basis. Responsibility. City of Tustin.	**Mitigation N-2.** Potential noise impacts from the grade-separated intersection of Tustin Ranch Road at Edinger Avenue shall be evaluated, and noise attenuation measures shall be incorporated into the intersection design. Responsibility. City of Tustin. **Mitigation N-3.** Standards shall be adopted for new development including policies that require noise attenuation. Responsibility. City of Tustin, the City of Irvine. **Mitigation N-4.** Prior to the connection of Warner Avenue to the North or South Loop Road, a noise study shall be completed to assess impacts. If mitigation is required, the City of Tustin and City of Irvine shall enter into an agreement which allocates mitigation cost on a fair share basis. Responsibility. City of Tustin.	

CHAPTER 3.0
AFFECTED ENVIRONMENT

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CHAPTER 3.0
AFFECTED ENVIRONMENT

Chapter 3 sets forth the Affected Environment of the proposed action. The Affected Environment describes the present physical conditions within the area of the proposed action. The area, or region of influence, is defined for each environmental issue based upon the areal extent of physical resources that may be affected directly or indirectly by the proposed action and appropriate guidelines of regulatory agencies or common professional practice. Table 3-1 summarizes the environmental issues and associated region of influence described in the Affected Environment sections of this EIS/EIR.

Table 3-1
Environmental Issnes and Region of Influence

Environmental Issue	Region of Influence
Land Use	Reuse plan area and surrounding areas
Socioeconomics	Census tracts contiguous with the reuse plan area, City of Tustin, City of Irvine, City of Santa Ana, County of Orange, State of California
Utilities	Reuse plan area
Public Services and Facilities	Reuse plan area
Aesthetics	Reuse plan area and viewshed
Cultural and Paleontological Resources	Reuse plan area
Biological Resources	Reuse plan area
Agricultural Resources	Reuse plan area
Soils and Geology	Soils - Reuse plan area Geology - Los Angeles region
Water Resources	Reuse plan area and subbasin
Hazardous Wastes, Substances, and Materials	Reuse plan area
Traffic/Circulation	Reuse plan area, City of Tustin, City of Irvine, City of Santa Ana, City of Newport Beach
Air Quality	South Coast Air Basin
Noise	Reuse plan area and traffic study area

This section of the EIS/EIR describes the baseline conditions for each environmental resource against which the potential impacts of the proposed action will be compared. Generally, the baseline utilized for the analysis of environmental impacts under NEPA reflects the conditions present at or

about the time the EIS/EIR is initiated. However, in the case of closures of military installations, EIS documents are often initiated in the trough between full-scale military operations at the former military installation and commencement of the civilian redevelopment project being studied. The trough is a temporary, constantly changing, and wholly artificial situation that cannot provide a stable and meaningful basis for measuring the environmental impact of subsequent redevelopment. It is more appropriate to use the pre-closure conditions during full operations as a baseline to more realistically reflect the environmental impact of reuse.

Under CEQA, the baseline is the existing physical conditions at the time the NOP is published, or when the environmental analysis is commenced if an NOP is not published. While special legislation was enacted by the State of California to allow alternate baselines (Cal. Pub. Res. Code § 210838.1) that legislation became effective after the NOP for this EIS/EIR was published and has not been used to establish the baseline year.

For NEPA purposes, the baseline year is 1993, which is the year the entire Air Station, including family housing, was designated for closure. Under CEQA, the baseline year is 1994 because the NOP was issued on July 5, 1994. The physical conditions present in 1993 are the same as the physical conditions present in 1994 and 1999: the entire infrastructure for MCAS Tustin is still physically present on the property and has not been significantly altered since 1993. Additionally, the four-acre parcel which completes the reuse plan area was undeveloped in 1993 and remained undeveloped in 1994.

In addition to the baseline comparison, 1999 data is included in the No Action Alternative analysis. The 1999 data is also provided to address comments raised in response to the initial Draft EIS/EIR. (As stated in the Preface, this is a re-circulated EIS/EIR.) In the interest of full disclosure, environmental impacts and mitigation measures are analyzed throughout the EIS/EIR with reference to both baseline conditions and to the No Action Alternative.

3.1 LAND USE

This section describes existing land uses in the reuse plan area (Section 3.1.1) and in the surrounding community (Section 3.1.2) and identifies pertinent general plan designations and zoning for the cities of Tustin, Irvine, and Santa Ana (Section 3.1.3). Existing land uses in the reuse plan area are the same between the baseline and existing conditions. Land uses surrounding the reuse plan area are described based on 1999 data and do not reflect conditions which occurred in the baseline for the area along Harvard Avenue. Under baseline, this area was undeveloped, currently it is developed with residential uses. Commentors on the initial draft EIS/EIR requested that all land use data be revised to reflect the most current conditions.

Section 3.1.4 describes aircraft operations (baseline) and pertinent aircraft plans and policies. Because aircraft operations on MCAS Tustin have ceased, and no new aircraft uses are proposed, this section focuses on operations at John Wayne Airport and easements/policies at MCAS Tustin as they would affect land use planning.

3.1.1 Reuse Plan Area

Land uses and activities on the Air Station prior to commencement of closure activities are described in *Masterplan Marine Corps Air Station Tustin* (DON 1989). Land use categories have remained essentially the same since that time, although most buildings and facilities are currently unused because the helicopter squadrons have been re-stationed in anticipation of the July 1999 closure. Figure 1-4 in Section 1.3.2 identifies general land uses categories at MCAS Tustin (based on the Masterplan) and the approximately four-acre privately owned parcel, which together comprise the reuse plan area.

The single largest land use category in the Masterplan is airfield operations/operationally constrained. Existing, but currently unused, airfield facilities include a runway, taxiways, parking aprons, tower/crash crew facilities, and safety zones. Seven helipads were used for takeoffs and landings, and to conduct low-altitude aircraft hovering tests for flight readiness. These facilities were also used for blimp operations. The portion of this category not utilized for actual airfield operations is considered operationally constrained due to noise and crash hazard potential and is currently leased for weed control and agriculture.

The next largest category is agriculture. Approximately 530 acres are leased for agriculture. Under this lease, approximately 360 acres are cultivated with irrigated row crops. The remaining 170 acres

are within operationally constrained areas as discussed above. Cultivated fields are located along Barranca Parkway, at the southwestern boundary of the Air Station; adjacent to Peters Canyon Channel to the southeast; and between Edinger Avenue and Moffett Drive to the northeast. The cultivated fields do not coincide directly with the land use categories of the Masterplan which is the source for Figure 1-4. Agricultural operations actually occur all around the landing mats of the northern blimp hangar, even though the Masterplan land use category on Figure 1-4 is airfield operations/operationally constrained for this location. (Refer also to Section 3.8, Agricultural Resources.)

Community support, maintenance, operations and training, administration, storage, and medical/ dental facilities form a campus-like setting at the main entrance, near the intersection of Red Hill Avenue and Moffett Drive. Community support facilities include child care centers, a library, and a church. Recreation facilities are clustered primarily between the administrative core and the family housing along Edinger Avenue, and include various courts, fields, and small play/picnic areas. Recreation facilities are described in detail in Section 3.4.6, Parks and Recreation.

Military family housing at MCAS Tustin is located in two clusters totaling 1,537 dwelling units. One cluster of 1,263 units is situated along and between Peters Canyon Channel and Harvard Avenue, on the southeast edge of the Air Station. Within this area, 771 units are located within the City of Tustin and 552 units within the City of Irvine. The other cluster of 274 family housing units is located to the northwest along Edinger Avenue within the City of Tustin. Seventy of the 1,537 units are for officers, with the balance for noncommissioned officers. There are also two senior officer single-family units near Red Hill Avenue and Valencia Avenue. Family housing at MCAS Tustin has been available for personnel from both MCAS Tustin and MCAS El Toro.

Bachelor housing has several newer buildings that are clustered near the community support facilities in the northern portion of the Air Station. This housing provided quarters for approximately 1,100 enlisted and 16 officer personnel in 12 buildings. The Bachelor Officers Quarters (BOQ) are 16 hotel-like units housed in a single building. The Bachelor Enlisted Quarters (BEQ) are barracks accommodations housed in eleven buildings. One of the BEQ building has open-bay accommodations, while the remaining 10 buildings have individual rooms for one or two occupants.

The portion of the reuse plan area between Jamboree Road and Harvard Avenue, northeast of Edinger Avenue, is currently undeveloped. All but the four-acre, privately owned parcel (also undeveloped) was acquired by DON in 1992 to be used for military family housing. When MCAS El Toro was recommended for closure in 1993, the need for this housing was eliminated.

3.1.2 Surrounding Areas

A variety of land uses surround MCAS Tustin. Figure 3.1-1 illustrates the existing land uses in the surrounding area and they are described below.

Northern Boundary (Edinger Avenue)

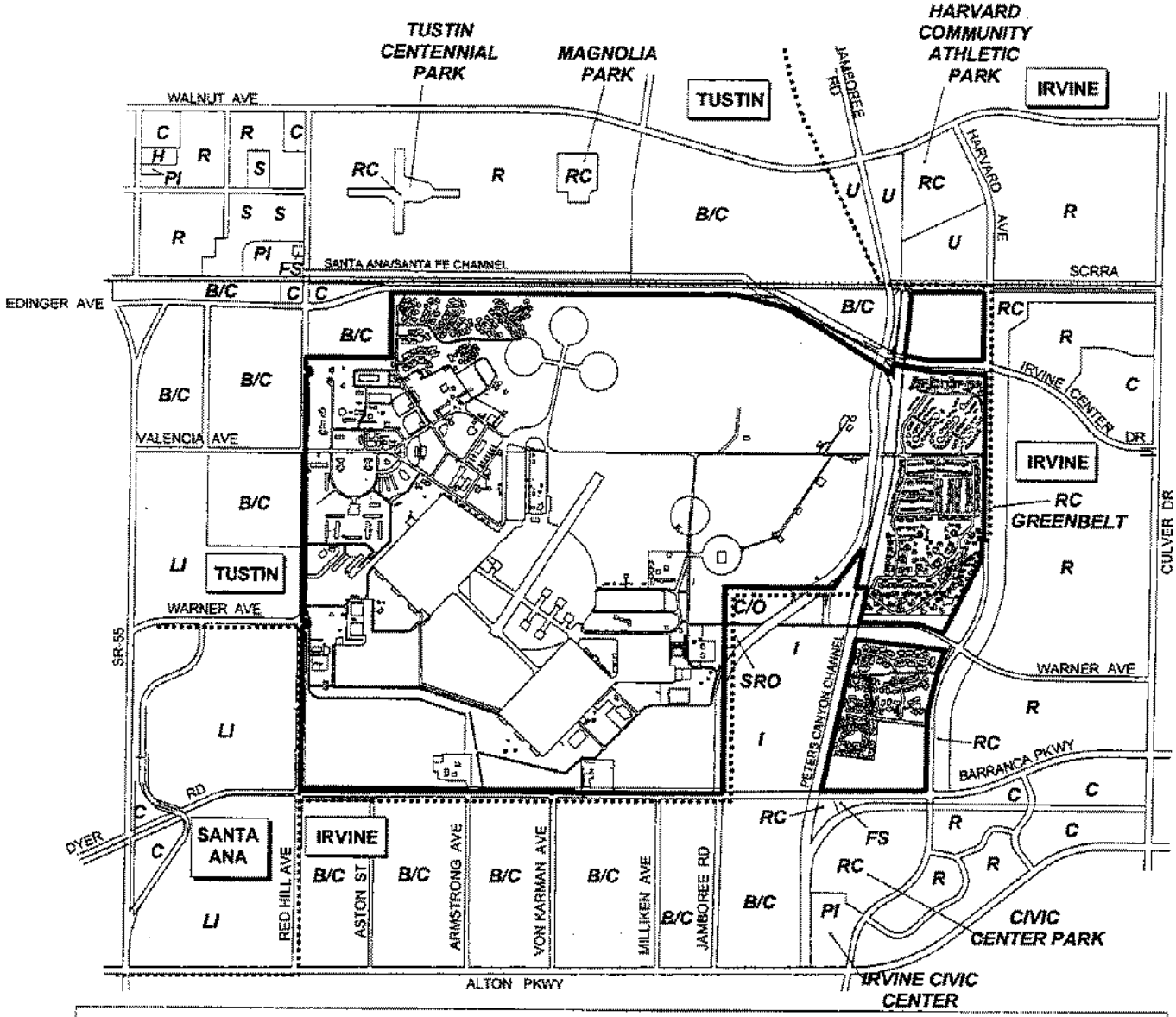
Immediately adjacent uses at the intersection of Red Hill Avenue and Edinger Avenue at the northern boundary of the Air Station include a light industrial business park, an indoor and outdoor storage facility, and commercial uses. Generally, Edinger Avenue defines the northeastern boundary of the Air Station. Parallel to the roadway are the railroad tracks of the Southern California Regional Rail Authority (SCRRA), a section of the Metrolink system, and beyond the tracks is the Santa Ana-Santa Fe Channel.

Two large single-family residential tracts, Tustin Meadows and Peppertree, front the Santa Ana-Santa Fe Channel. A masonry wall separates the dwelling units from the channel. The residential developments are bounded by Red Hill Avenue, Walnut Avenue, and the future alignment proposed for an extension of Tustin Ranch Road within the City of Tustin. The residential area contains several small park areas and an elementary school (northeast of Walnut Avenue).

Further to the northeast, in an area bounded by the Santa Ana-Santa Fe Channel, the future extension of Tustin Ranch Road, Walnut Avenue, and Myford Avenue, is an industrial park with a variety of building sizes and shapes. A combination of light industrial, commercial, and service-oriented businesses are located in the triangular-shaped parcel of land bounded by Edinger Avenue, the railroad tracks, and Jamboree Road. To the east of the Air Station, northeast of Peters Canyon Channel, is an area of undeveloped land, and beyond that area is Harvard Community Athletic Park with baseball/softball and soccer fields.

Eastern Boundary (Harvard Avenue)

Land located east of Harvard Avenue, between ~~Walnut Avenue~~ Irvine Center Drive and Barranca Parkway (situated in the City of Irvine) has been recently developed with single-family and multi-family residential uses in the Village 38 project. A landscaped setback and masonry wall separates the development from Harvard Avenue. The Irvine Inn, a single-room occupancy hotel, is located off of Warner Avenue, west of Jamboree Road. A number of vacant properties and industrial uses are located between Jamboree Road and the Peters Canyon Channel.



Base map: HNTB 1999

500 0 1000 2000 ft

Figure 3.1-1
Existing Surrounding Land Uses

Southern Boundary (Barranca Parkway)

A combination of business park, light industrial, heavy industrial, and commercial uses are located south and southeast of the Air Station in the Irvine Business Center along Barranca Parkway, within the City of Irvine. A fire station is located on Barranca Parkway, opposite the military family housing. Civic Center Park and the City of Irvine Civic Center are in this same area.

Western Boundary (Red Hill Avenue)

Light industrial, business park, and research and development uses dominate the area west of the reuse plan area in the City of Santa Ana (south of Warner Avenue). The same uses can be found northwest of the Air Station in the City of Tustin, along with commercial businesses.

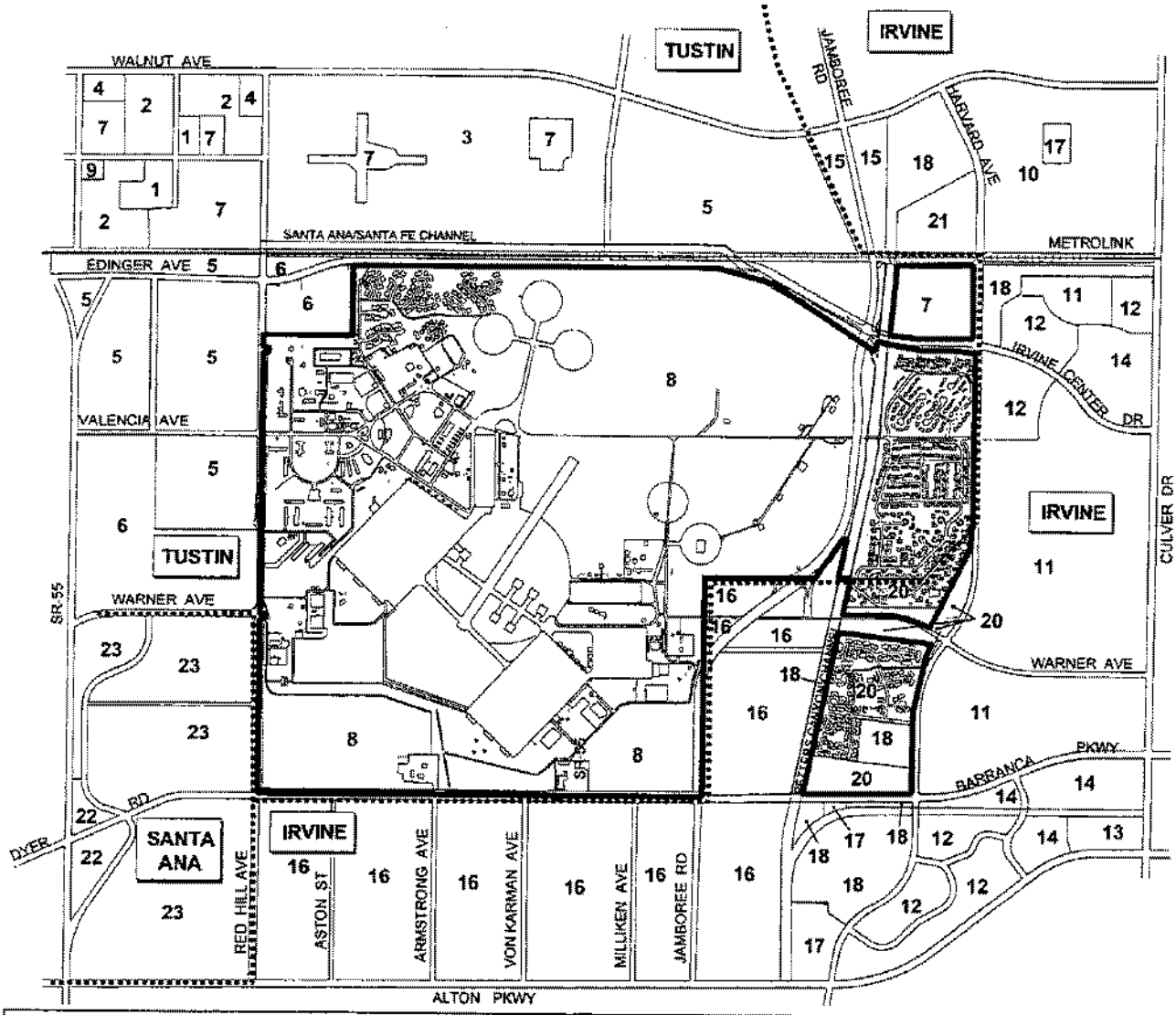
3.1.3 Land Use Plans

City of Tustin

General Plan

The majority of the reuse plan area (1,511 acres) is located in Planning Subarea 3 of the City of Tustin's General Plan (Figure 3.1-2). The *Tustin General Plan Land Use Element* (City of Tustin 1994a) designates MCAS Tustin as Military and Public/Institutional. The Military designation, which covers all but the easternmost corner of the site, refers exclusively to MCAS Tustin. The land use designation acknowledges that any reuse of the Air Station would require a General Plan amendment and any proposed use would also require adoption of a Specific Plan or establishment of a Planned Community District. The northeastern corner of the Air Station (between Peters Canyon Channel and Harvard Avenue, on the north side of Edinger Avenue) is designated Public/Institutional. The Public/Institutional designation allows a range of public and semi-public land uses including schools, public buildings and facilities, public utilities, libraries, and parks.

The reuse plan area is also addressed via two Special Management Areas (SMAs): MCAS Tustin Specific Plan and Future MCAS Tustin/Adjoining Area Redevelopment Project. SMAs are regulated in different ways by the city and other public agencies to ensure that city policy is implemented and desired results are achieved. A Specific Plan SMA anticipates the closure and consequential reuse of a site and states that the site should be governed by Planned Community District provisions or should have an adopted Specific Plan. If a Specific Plan is adopted,



Source: City of Irvine General Plan 1999c; City of Santa Ana General Plan 1998; City of Tustin General Plan 1994
Base map: HNTB 1999

500 0 1000 2000 ft

Figure 3.1-2
General Plan Designations

amendment to the Special Management Areas Policy Maps is not necessary. The Redevelopment Project Area SMA designation promotes the improvement of certain areas that have suffered economic decline, deterioration of improvements, or which have been unable to attract and promote new private investments. Any development within the Redevelopment Project Area SMA is subject to design review by the Tustin Community Redevelopment Agency.

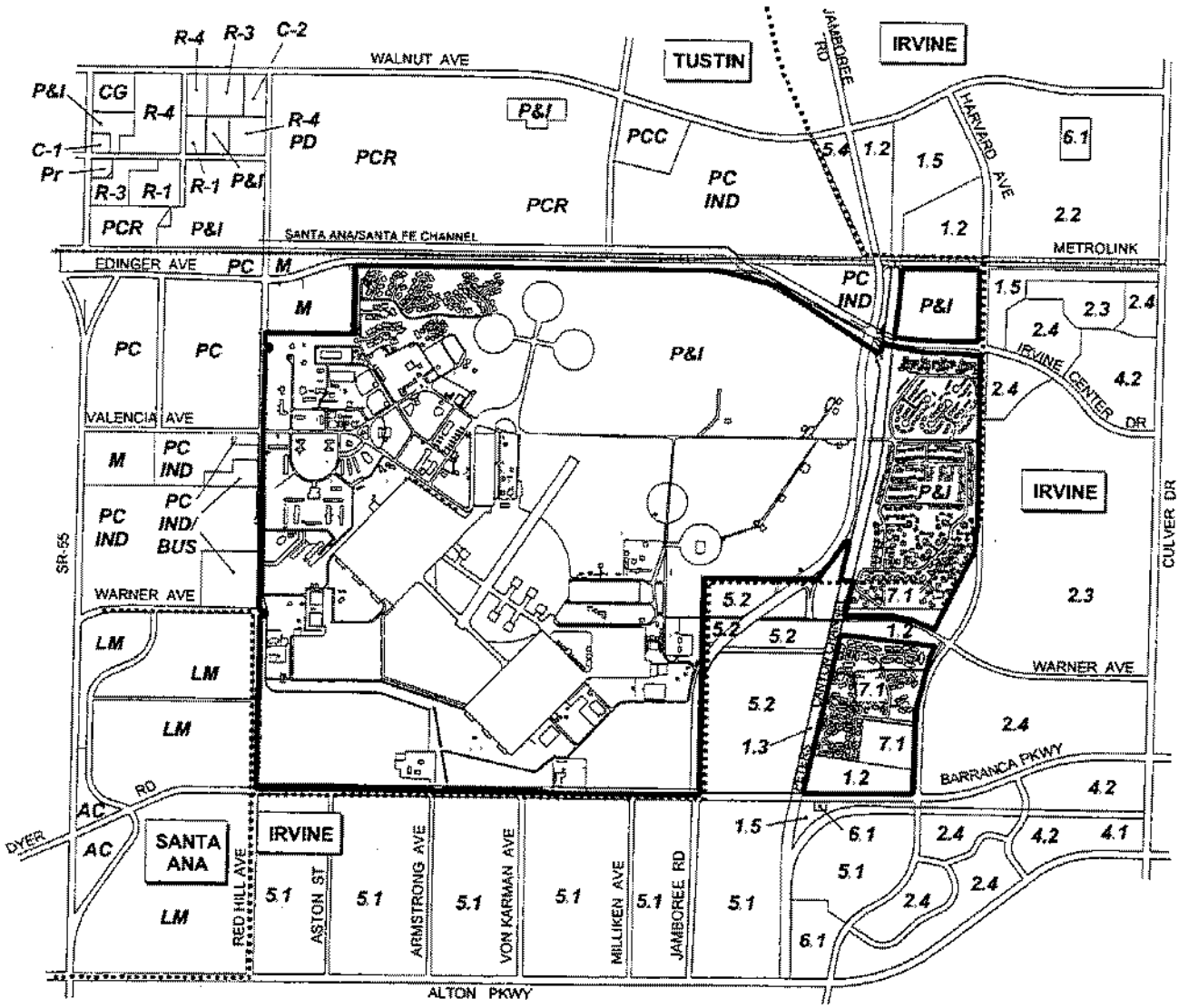
The area surrounding the reuse plan area has a number of designated land uses: Industrial to the northwest and north: Planned Community (PC) Commercial Business to the northwest and northeast; Public/Institutional, Low Density Residential, High Density Residential, Community Commercial, and Professional Office to the north, and PC Low Density Residential to the northeast (Figure 3.1-3). Two of the adjacent areas, Low Density Residential and Commercial Business, have PC designations. This designation allows for a variety of densities, uses, and activities area and requires a Planned Community District or specific plan approval for development of these areas.

The Low Density Residential category allows for a residential density of 1-7 single-family dwelling units per acre, while High Density Residential calls for single-family and multi-family residential development with a density of 15-25 dwelling units per aere. The Community Commercial designation provides for large-scale commercial, service-oriented business, and professional office uses. The Public/Institutional category accommodates a number of public and quasi-public land uses. The Professional Office designation allows professional offices and other supporting uses (legal, medical, financial, etc.).

As a federal installation, MCAS Tustin is currently not subject to planning requirements of the City of Tustin.

Zoning

Zoning designations for the site, Public and Institutional, are compatible with the Military designation in the City of Tustin General Plan. Surrounding zoning is also compatible with general plan designations. Figure 3.1-3 shows the zoning designations for the City of Tustin.



REUSE PLAN BOUNDARY
CITY BOUNDARIES

CITY OF TUSTIN

- R-1 SINGLE-FAMILY RESIDENTIAL
- R-3 MULITI-FAMILY RESIDENTIAL
- R-4 SUBURBAN RESIDENTIAL
- PD PLANNED DEVELOPMENT
- Pr PROFESSIONAL
- C-1 RETAIL COMMERCIAL
- C-2 CENTRAL COMMERICAL
- CG GENERAL INDUSTRIAL
- P&I PUBLIC & INSTITUTIONAL
- PC PLANNED COMMUNITY
- PCR PLANNED COMMUNITY RESIDENTIAL
- PCIND PLANNED COMMUNITY INDUSTRIAL/BUSINESS
- PCC PLANNED COMMUNITY COMMERCIAL
- M INDUSTRIAL

CITY OF IRVINE

- 1.2 DEVELOPMENT RESERVE
- 1.3 CONSERVATION/OPEN SPACE RESERVE
- 1.5 RECREATION
- 2.2 LOW DENSITY RESIDENTIAL
- 2.3 MEDIUM DENSITY RESIDENTIAL
- 2.4 MEDIUM-HIGH DENSITY RESIDENTIAL
- 4.1 NEIGHBORHOOD COMMERCIAL
- 4.2 COMMUNITY COMMERCIAL
- 5.1 IBC MULTI-USE
- 5.2 IBC INDUSTRIAL
- 5.4 GENERAL INDUSTRIAL
- 6.1 INSTITUTIONAL
- 7.1 MILITARY

CITY OF SANTA ANA

- LM LIMITED MANUFACTURING
- AC ARTERIAL COMMERCIAL

Source: City of Tustin Zoning Map 1997; City of Irvine Zoning Map 1997; City of Santa Ana Zoning Map 1992
Base map: HNTB 1999

500 0 1000 2000 ft

Figure 3.1-3
Zoning Categories

City of Irvine

General Plan

Approximately 95 acres of the reuse plan area are located within the jurisdiction of the City of Irvine. This area, located within Planning Area 38 (Westpark II), is designated in the *City of Irvine General Plan Land Use Element* (City of Irvine ~~1995a~~ 1999c) as Military and ~~Development Reserve~~ Recreation (Figure 3.1-2). The Military designation applies to all of the military family housing development within the City of Irvine. ~~Two~~ A small ~~undeveloped~~ areas, ~~one~~ adjacent to Warner Avenue and ~~one adjacent to Barranca Parkway, are~~ Peters Canyon Channel is designated ~~Development Reserve~~ Recreation.

There are numerous land use designations in the portion of the City of Irvine that surrounds the site. General plan designations in the area are; ~~Low Density Residential,~~ Medium Density Residential, Medium High Density Residential, Neighborhood Commercial, Community Commercial, ~~Hotel, General Industrial, Irvine Business Complex (IBC) Industrial, IBC~~ Multi-Use, Institutional, Recreational, ~~Conservation/Open Space Reserve, Development Reserve,~~ Research and Industrial, Urban and Industrial, and Military.

~~The Low Density Residential area, located to the east of the site, has an allowable density of 0-5 dwelling units per acre with single-family attached and detached homes.~~ The Medium Density Residential designation provides for detached and attached residences with a density of 60-10 dwelling units per acre. Areas with this designation are located to the southeast and south of the reuse plan area. There are two pockets of Medium High Density Residential east of the intersection of Harvard Avenue and Irvine Center Drive. This category is intended for multi-family housing with a maximum density of ~~11~~0-25 dwelling units per acre.

The Neighborhood Commercial area south of the site provides for a variety of local convenience retail and service businesses. The Community Commercial area, also to the south of the site, serves a larger community area with such establishments as service businesses, retail stores, and professional/administrative offices. A triangular-shaped area to the northeast is designated ~~General~~ Research and Industrial, which allows for research and development, manufacturing, administrative offices, and employee-oriented retail services. To the southwest of the reuse plan area is the Irvine Business Complex (IBC) which generally provides for ~~industrial use (IBC industrial) or for~~ a variety of uses ~~(IBC multi-use)~~ including industrial, professional offices, support commercial, and limited high-density residential.

The Institutional land use category (southeast of the site) accommodates non-profit land uses such as hospitals, schools, government buildings, libraries, fire stations and city administrative offices. The Recreational designation encompasses areas to the northeast (Harvard Community Athletic Park) and southeast (Civic Center Park), as well as greenbelts to the southeast. ~~The Hotel designation to the south of the intersection of Warner Avenue/Jamboree Road reflects this land's use for a single room occupancy hotel.~~

As a federal installation, MCAS Tustin is currently not subject to planning requirements of the City of Irvine.

Zoning

The City of Irvine zoning ordinance and map designates the portion of the Air Station within Irvine as Military and Development Reserve (Figure 3.1-3). These categories are compatible with the general plan designations. Zoning in the adjacent area is also considered consistent with general plan designations.

City of Santa Ana

General Plan

Although the reuse plan area is located within the City of Tustin and the City of Irvine, the western boundary of the site abuts the boundary of the City of Santa Ana (Figure 3.1-2). The area immediately adjacent to the reuse plan area is designated Industrial in the *City of Santa Ana General Plan Land Use Element* (City of Santa Ana 1998). Beyond this area lies an area designated General Commercial. The Industrial designation applies to areas developed with industrial and manufacturing uses and the General Commercial area is intended for business and professional offices; retail and service establishments; vocational, cultural, and entertainment uses; and vocational schools.

Zoning

Zoning in the Santa Ana area adjacent to the reuse plan area is Limited Manufacturing (Figure 3.1-3). This is consistent with the Industrial general plan designation.

3.1.4 Aircraft Operations/Airport Related Plans and Policies

Three major aviation facilities are located in Orange County: John Wayne Airport, MCAS El Toro, and MCAS Tustin. These facilities, along with other flight patterns in the area, complicate the regional airspace. MCAS Tustin is entirely within the five-mile inner core of John Wayne Airport and the aircraft pattern for John Wayne Airport is along Red Hill Avenue, adjacent to the Air Station. MCAS El Toro is undergoing base closure and reuse planning procedures; one possible reuse is a civilian airport (County of Orange 1996).

The focus of this discussion is John Wayne Airport and MCAS Tustin. The intent is to describe baseline helicopter usage at MCAS Tustin and its relationship to John Wayne Airport because of their close proximity. Due to base closure, all helicopter activity has ceased. No aircraft activity is proposed under any reuse alternative. Subsequent to the brief description of baseline aircraft usage there is information provided regarding pertinent aircraft operation plans and policies, focusing on those that affect land use planning in the reuse area.

Baseline Flight Activity at MCAS Tustin

MCAS Tustin was a major training site for Marine transport helicopter aircrews destined for duty in the western Pacific and other areas. Flight activity at the Air Station consisted of local and regional flight training. The aircraft fleet consisted of approximately 170 helicopters, including the twin-engine (heavy lift) or three engine (ultra-heavy lift) CH-53, and the twin-engine (medium lift) CH-46. Approximately 109,500 flight operations occurred at MCAS Tustin in 1993.

Commercial civilian blimps occasionally used MCAS Tustin under licenses that only permitted maintenance or fabrication in the hangar, and one arrival and departure. Blimps did not conduct aircraft operations from Tustin on a routine basis. On average, two to three blimps visited the facility each year.

Flight activity at MCAS Tustin included both runway training and landing pad activity. Taxi and low hover training utilized Mat 5 near the southern blimp hangar. Instrument approach training, and arrivals and departures training utilized designated helicopter routes along Von Karman Avenue, Barranca Parkway, Tustin Ranch Road, and several corridors described below. Off base confined area landing (CAL) sites were located to the east of MCAS Tustin in and near the Santa Ana Mountains. The CAL sites were frequently used for night operations and mountain terrain landings.

The local training pattern consisted of departures on the heading of Runway 24 continuing south of Barranca Parkway, turning parallel to Barranca Parkway to the southeast, then following a downwind track passing just east of Mat 5 with the base and final approach leg inside the Air Station boundary. Departures on the Runway 6 heading were the reverse. The local training pattern altitude was 700 feet mean sea level (msl), with airspeeds of 60 to 80 knots through the downwind segment of the flight track. Approximately 75 to 80 percent of operations in the baseline were conducted in this local pattern, with continuous activity during peak training periods.

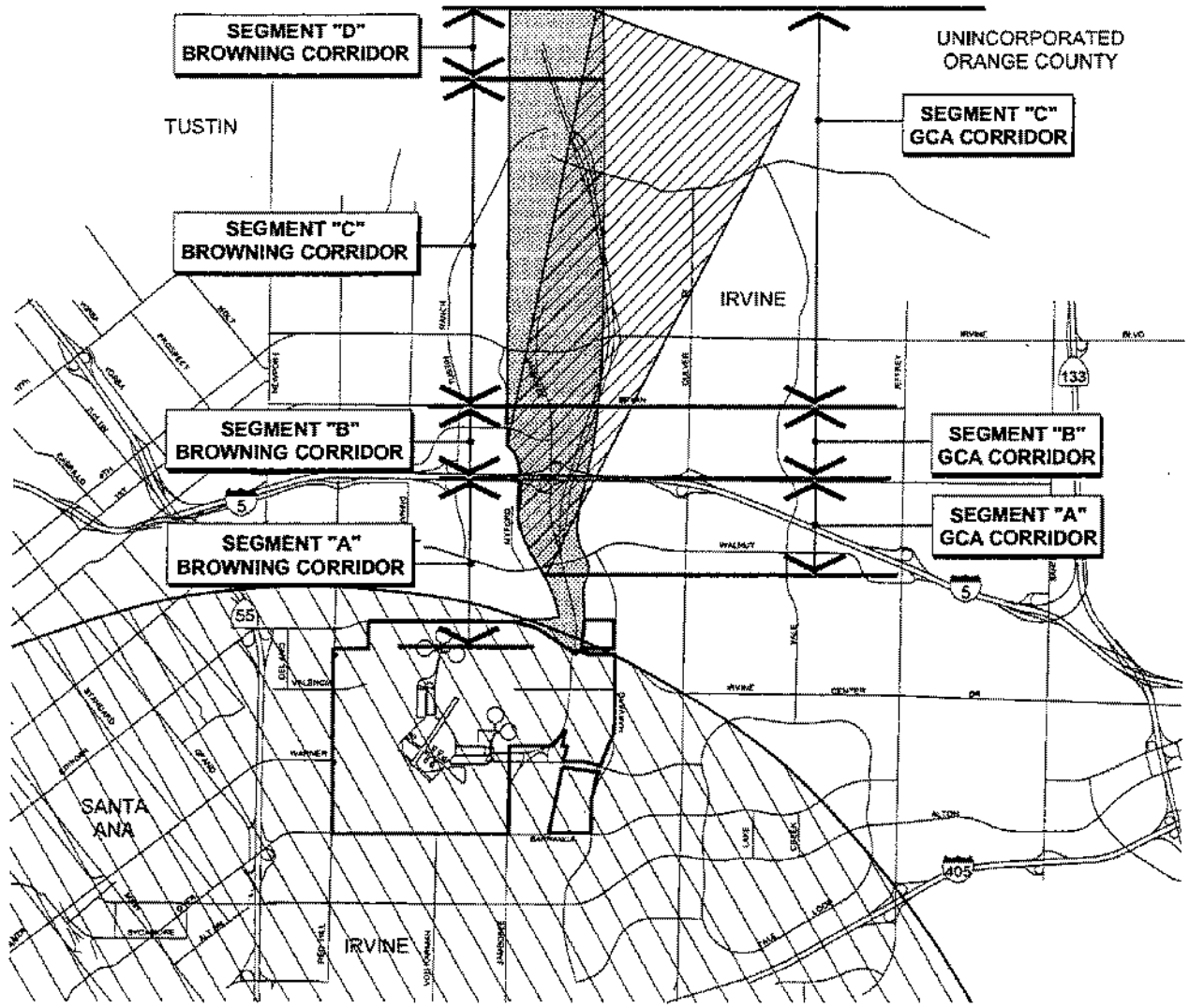
Prior aviation operations at MCAS Tustin required that a clear approach and departure flight route be maintained. Two sets of policies and criteria governed flight operations for aircraft landing or taking off from MCAS Tustin: visual flight rules (VFR) and instrument flight rules (IFR). The primary VFR approach and departure route, known as the Browning Corridor, and the primary IFR approach route, known as the Ground Controlled Approach (GCA) Corridor, were kept clear of potential obstruction to maintain the integrity of air operations capabilities. The Browning and GCA corridors are currently protected by easements (Figure 3.1-4). Both easements are effective so long as MCAS Tustin is an active military air station. Since the base closure date is July 1999, and all helicopter activity has ceased, the easements are no longer in effect.

Federal Aircraft Operations Policies

Air Installations Compatible Use Zones (AICUZ)

To ensure that development on and around air facilities was accomplished safely, DOD initiated the AICUZ program to protect public health, safety, and welfare, and to prevent civilian encroachment from degrading the operational capabilities of military installations (DON 1989). AICUZ studies for military air installations analyze air operations, aircraft noise, accident potential zones, and land use encroachments in the vicinity of operations on and around the station. The AICUZ program defines the areas with critical accident potential as accident potential zones (APZs). The size and shape of APZs are determined according to generalized experience with air installations around the country. Accident potential zone guidelines for helicopter installations were used to generate the clear zones and APZs for MCAS Tustin.

All of the clear zones were contained within the Air Station. APZ 1 was defined as an area beyond the clear zone for the remainder of the VFR or IFR approach-departure surface until that surface is 150 feet above the established runway elevation. At MCAS Tustin, APZ 1 extended approximately



Source: MCAS Tustin Master Plan (Western Division Naval Facilities Command 1988)
Base map: Austin-Foust Associates 1999

0 3000 6000 ft

Figure 3.1-4
Land Use Restrictions
Related to Air Operations

500 feet north of Edinger Avenue between Tustin Ranch Road and Jamboree Road. This area is currently developed with office/industrial uses. APZ II normally is not applied to helicopter flight paths unless the local accident history indicates the need for additional protection. The AICUZ study does not designate an APZ II at MCAS Tustin.

Browning Corridor/GCA Corridor Easements

The aviation easement and clearance easements for the Browning and GCA corridors assure compatibility of air operations with land development under that flight route. The clearance easement allows unrestricted military rotary wing/tilt-rotor aircraft overflights at altitudes of 500 feet above ground level (AGL). The aviation easement includes the right to cause, as a result of aircraft operations, such noises, vibrations, fumes, fuel particles, smoke, and other effects as may result from ordinary and normal operation of military rotary wing and tilt-rotor aircraft.

The Browning Corridor clearance easement restricts and prohibits property owners from erecting, constructing, growing, or otherwise developing any structure except for highway interchanges that extends more than 60 feet AGL in Segment "A". Segment A extends from the Air Station north to I-5. The height limit in segments "B" (I-5 north to Bryan Avenue) and "C" (Bryan Avenue north to Lemon Heights) is 150 feet AGL, and the height limit in Segment "D" (Lemon Heights north to Peters Canyon) is 100 feet AGL.

The GCA Corridor clearance easement restricts and prohibits landowners under the corridor from erecting, constructing, growing, installing, creating, or permitting, whether public or private, any structure, building, antenna, tower, wire, tree, or other obstruction higher than: 60 feet AGL in Segment "A" (south of Walnut Avenue north to freeway), 250 AGL feet in Segment "B" (freeway north to Bryan Avenue), and 300 AGL feet in Segment "C" (Bryan Avenue north to Peters Canyon).

In segments "A" and "B" of both corridors, residential uses are prohibited. For all segments of both corridors, the following uses are prohibited:

- airports (except for heliports);
- hospitals and sanitariums;
- any auditorium with a seating capacity of over 1,500; and
- manufacturing, storage, handling, or distribution of munitions, explosives, petrochemicals, gasoline, or related products, except for incidental underground storage of petroleum products.

The land use restrictions for the two corridors are generally compatible with the General Plans for the affected jurisdictions - the City of Tustin, the City of Irvine, and unincorporated Orange County. However, the Irvine General Plan designates an area south of Bryan Avenue as residential and institutional, which is incompatible with the Browning and GCA corridor easement restrictions.

County of Orange

The county is the local agency responsible for John Wayne Airport and must prepare an appropriate airport environs land use plan.

Airport Environs Land Use Plan (AELUP)

John Wayne Airport is located approximately two miles southwest of the reuse plan area. This facility is the primary airport serving Orange County. The centerline of the primary flight route for John Wayne Airport is located approximately 1,600 feet from Red Hill Avenue in the vicinity of MCAS Tustin.

The Airport Land Use Commission for Orange County is responsible for planning land uses that are compatible with civilian aircraft operations in Orange County. Land use restrictions exist for areas adjacent to, and under flight patterns for, John Wayne Airport. These regulations restrict sensitive land uses in order to minimize the potential for loss of life and property in the event of an aircraft accident, to reduce noise impact, and to reduce the risk of aircraft colliding with tall buildings or other structures.

According to the AELUP (Airport Land Use Commission for Orange County 1995), no restrictions are in place for MCAS Tustin in conjunction with possible crasb zones. However, FAA guidelines (Advisory Circular 70/7460-2) identify the need for FAA and John Wayne Airport to have input on any building proposal that exceeds the height of potential concern. The height limit is intended to provide an opportunity for comment only. The area of potential concern is based on a 1-foot height for every 100 feet of distance from the end of John Wayne runways, for a distance of 20,000 feet. Because the 20,000 foot distance extends in all directions from the JWA runways, buildings whicb are proposed to be taller than the beight of concern, but are not under a flight pattern, may receive a comment. MCAS Tustin falls within 20,000 foot area of concern for buildings with heights ranging from 110 feet to 200 feet (Figure 3.1-4). Thus FAA and the Airport Land use Commission would need to be noticed for projects where the height exceed those numbers.

3.2 SOCIOECONOMICS

Under NEPA "economic" and "social" effects are environmental consequences to be examined (40 C.F.R. § 1502.16 and 40 C.F.R. § 1508.8). However, under CEQA the focus of an EIR is primarily on potential changes to the "physical conditions" which includes land, air, water, flora, fauna, population, housing, noise, and objects of historic or aesthetic significance (Cal. Pub. Res. Code § 21060.5; Cal. Code Regs. Title 14 § 15358(b) and § 15382). Accordingly, for CEQA purposes, only the discussion of population and housing applies.

3.2.1 Plans and Policies

Socioeconomic considerations that are applicable to Air Station closure and realignment are addressed in Section 2903(c) of the *National Defense Authorization Act for Fiscal Year 1994* (Pub. L. 103-160), and amendments, and in the *Report of the California Military Base Reuse Task Force to Governor Pete Wilson: A Strategic Response to Base Reuse Opportunities* (Task Force Report) (California Military Base Reuse Task Force January 1994). Generally, the intent is to provide economic stimulus and consider local areas in base disposal. These two aspects are discussed briefly below.

National Defense Authorization Act (Pub. L. 103-160)

Consideration of Economic Needs with Respect to Revitalization and Redevelopment of Closed Military Installations (Pub. L. 103-160, § 2903(c), Nov. 30, 1993, 107 Stat 1547 1915) states that economic needs must be considered with regard to the reutilization and redevelopment of closed military installations. It goes on to state:

> In order to maximize the local and regional benefit from the reutilization and redevelopment of military installations that are closed, or approved for closure, pursuant to the operation of a base closure law, the Secretary of Defense shall consider locally and regionally delineated economic development needs and priorities into the process by which the Secretary disposes of real property and personal property as part of the closure of a military installation under a base closure law.

California Military Base Reuse Task Force

In the Task Force Report, the task force developed six principles to be considered in the closure and reuse of military bases in the state. These are:

- Treat closing military bases as economic engines for job creation.
- The state should assist local officials in the process of base reuse and evaluating potential uses that may have overriding state or regional importance.
- Provide a variety of financing for base reuse.
- Streamline regulatory processes so that the state is not in danger of stifling local efforts to devise workable reuse plans.
- The federal government must clean up closed bases as soon as possible to a level appropriate to the reuse and consistent with long-term protection goals.
- The federal government must assume responsibility for a smooth transfer of military base property to local control.

3.2.2 Socioeconomic Characteristics

The study area for socioeconomic issues includes both local and regional areas. The census tracts encompassing or adjacent to the reuse plan area are potential primary receptors of socioeconomic effects, and are also considered with respect to Executive Order 12898 (Environmental Justice, 59 Fed. Reg. 7629 (1994)) and to Executive Order 13045 (Environmental Health and Safety Risks to Children, 62 Fed. Reg. 19885 (1997)). Other effects, such as direct and indirect employment impacts, may occur primarily in central Orange County and extend to other areas of the county (and even beyond). The information in this section has been prepared to address this variation in the study area.

As shown in Figure 3.2-1, a total of five census tracts encompass or are adjacent to the reuse plan area. These are census tracts 525.01 and 525.15 (that encompass portions of the reuse plan area), and 525.02, 525.16, and 525.97 (that are adjacent to the reuse plan area). These census tracts and the data associated with them are from the 1990 census.

As shown in Figure 3.2-1, census tract boundaries do not follow city boundaries. For example, census tract 525.01 includes portions of Tustin, Irvine, and Santa Ana within its boundaries (as well as the majority of the reuse plan area). Summary data for these three cities are also presented in this section, as are summary data for Orange County as a whole (and, where appropriate for comparative purposes, summary data for the State of California). Figure 3.2-2 shows the cities and portions of unincorporated Orange County closest to the reuse plan area.

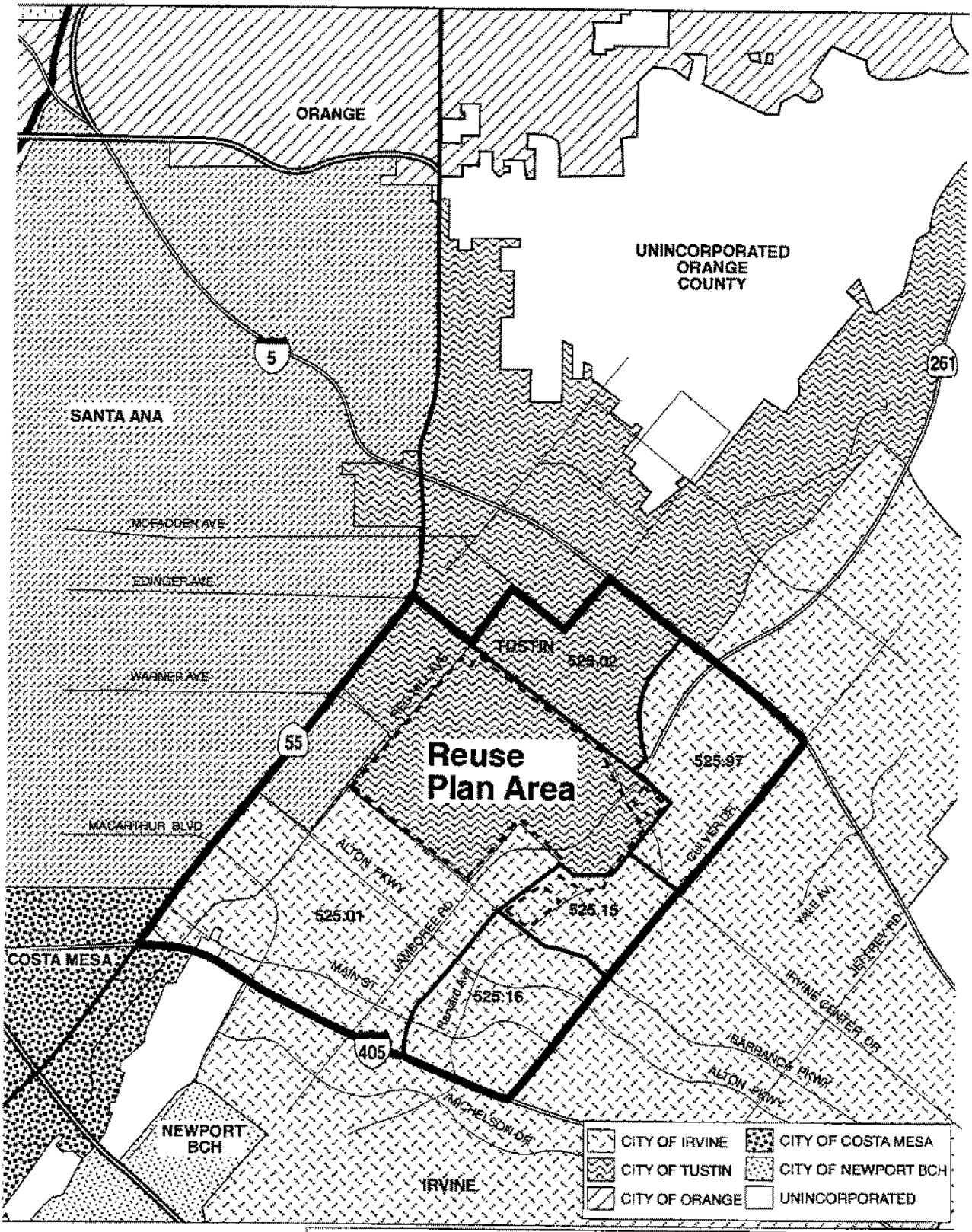


Figure 3.2-1
Census Tracts

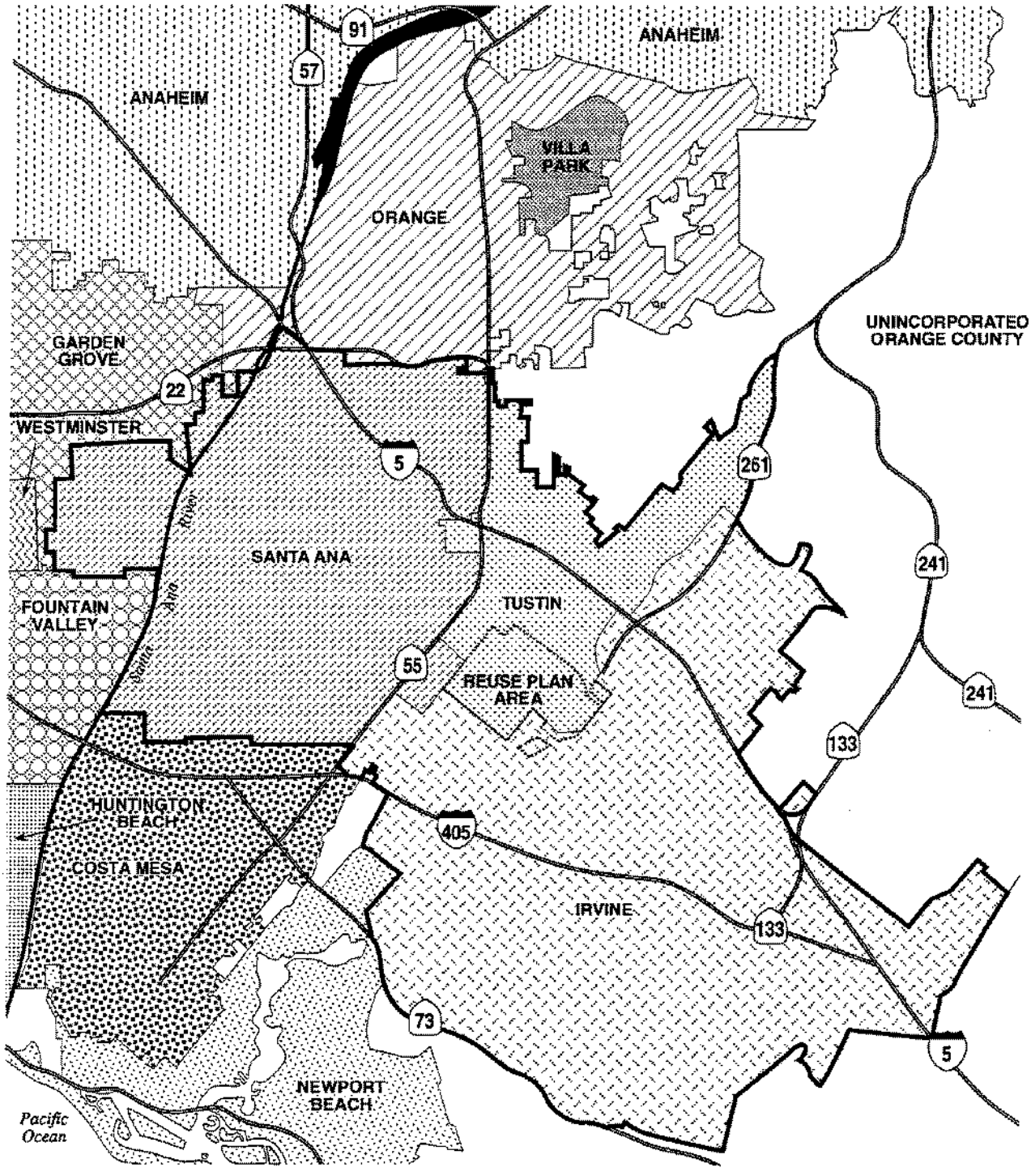


Figure 3.2-2
City Boundaries

Many of the data presented in this section are from the 1990 U.S. Census, the closest year to baseline for which comprehensive socioeconomic data are available that are comparable on a local, regional, and national basis. These data are supplemented by data from the State of California Department of Finance (DOF) and OCP-96 Modified data (County of Orange 1997). DOF and OCP-96 Modified data provide projection to the year 2020 to allow for comparison against a variety of future conditions. The Southern California Association of Governments (SCAG) serves a similar demographic projection function for the counties of Los Angeles, Orange, Riverside, and San Bernardino. They also provide regional planning programs for this extensive region, including growth management, regional mobility, air quality, hazardous waste management, and water quality. These core programs are contained in a *Regional Comprehensive Plan and Guide* (RCPG) (SCAG 1996). While the jurisdictions of Orange County utilize RCPG to evaluate consistency with regional planning goals, they do not utilize SCAG demographic projections. OCP-96 Modified data were chosen for use in this socioeconomic issue analysis as these data are officially recognized and utilized by all local jurisdictions within Orange County for a variety of planning purposes. Additionally, they are the basis for traffic projections in this EIS/EIR.

Population/Ethnicity

Table 3.2-1 shows population characteristics, including total population and race/ethnic distribution, for the census tracts contiguous with the reuse plan area. In 1993, approximately 3,150 dependents of active duty Marines lived in family housing at MCAS Tustin (Tustin 1993a) and 1990 census data indicate 1,290 persons were living in military group quarters at the site.

Table 3.2-2 presents data on population characteristics, including total population and race/ethnic distribution, for the contiguous census tracts area as a whole, the three cities contiguous with the reuse plan area, and Orange County. Data from the State of California are also presented for comparative purposes. As can be seen in the table, the population of the census tracts contiguous with the reuse plan area contain a population over half as large as the population of the City of Tustin as a whole. These individuals represent approximately one percent of the total population of Orange County.

Table 3.2-3 presents the information contained in Table 3.2-2, but in percentage terms to facilitate comparison, particularly for subsequent analysis pursuant to Executive Order 12898 regarding Environmental Justice (Section 6.7). As shown in the table, the census tracts contiguous with the reuse plan area have a higher non-White population percentage (27 percent) than does Orange County as a whole (21 percent), but a lower percentage than the State of California (31 percent).

Table 3.2-1
1990 Population, Race, and Ethnicity
Census Tracts Contiguous with Reuse Plan Area

Race/Ethnic Group	Census Tract					Total
	525.01	525.02	525.15	525.16	525.97	
White	3,529	5,013	567	6,427	4,517	20,053
Black	1,006	27	187	212	119	1,551
American Indian, Eskimo, and Aleut	64	26	13	19	0	122
Asian and Pacific Islander	271	691	43	2,223	1,510	4,738
Other Race	407	126	70	192	194	989
Total Non-White	1,748	870	313	2,646	1,823	7,400
Percent Non-White	33%	15%	36%	29%	29%	27%
Hispanic[1]	831	433	112	554	560	2,490
Percent Hispanic	16%	7%	13%	6%	9%	9%
Non-Hispanic White	3,211	4,710	540	6,088	4,186	18,735
Total Minority[2]	2,066	1,173	340	2,985	2,154	8,718
Percent Minority	39%	20%	39%	33%	34%	32%
Total Population	**5,277**	**5,883**	**880**	**9,073**	**6,340**	**27,453**

(1) The Hispanic population is an ethnic not a racial category, and includes components in each of the five racial categories (i.e., Hispanic figures cannot be added to racial categories to reach total population figure; double counting would result).
(2) Includes Hispanic ethnic category and non-White racial categories; to avoid double counting, figure obtained by subtracting non-Hispanic White from total population.
Source: 1990 Census STF 3A

Table 3.2-2
1990 Population, Race, and Ethnicity
by Contiguous Census Tract Area, Cities, County, and State

Race/Ethnic Group	Area					
	Contiguous Census Tracts[1]	Tustin	Irvine	Santa Ana	Orange County	California
White	20,053	37,155	85,952	200,118	1,896,724	20,555,653
Black	1,551	2,944	2,001	7,594	41,632	2,198,766
American Indian, Eskimo, and Aleut	122	342	258	1,369	12,834	248,929
Asian and Pacific Islander	4,738	5,316	19,935	28,466	250,136	2,847,835
Other Race	989	4,932	2,184	56,195	209,230	3,908,838
Total Non-White	7,400	13,534	24,378	93,624	513,832	9,204,368
Hispanic[2]	2,490	10,285	6,818	189,967	556,957	7,557,550
Non-Hispanic White	18,735	32,312	81,567	68,692	1,557,956	17,093,961
Total Minority[3]	8,718	18,377	28,763	225,050	852,600	12,666,060
Total Population	**27,453**	**50,689**	**110,330**	**293,742**	**2,410,556**	**29,760,021**

(1) Includes data from census tracts 525.01, 525.02, 525.15, 525.16, and 525.97.
(2) The Hispanic population is an ethnic not a racial category, and includes components in each of the five racial categories (i.e., Hispanic figures cannot be added to racial categories to reach total population figure; double counting would result).
(3) Includes Hispanic ethnic category and non-White racial categories; to avoid double counting, figure obtained by subtracting non-Hispanic White from total population.
Source: 1990 Census STF 3A

Table 3.2-3
1990 Population, Race, and Ethnicity by Percent of Total Population by Contignous Censns Tract Area and Cities, County, and State

Race/Ethnic Group	Area					
	Contiguous Census Tracts [1]	Tustin	Irvine	Santa Ana	Orange County	California
White	73.0%	73.3%	77.9%	68.1%	78.6%	69.1%
Black	5.6%	5.8%	1.8%	2.6%	1.7%	7.4%
American Indian, Eskimo, and Aleut	0.4%	0.7%	0.2%	0.5%	0.5%	0.8%
Asian and Pacific Islander	17.3%	10.5%	18.1%	9.7%	10.3%	9.6%
Other Race	3.6%	9.7%	2.0%	19.1%	8.7%	13.1%
Total Non-White	26.9%	26.7%	22.1%	31.9%	21.3%	30.9%
Hispanic[2]	9.1%	20.3%	6.2%	64.7%	23.1%	25.4%
Non-Hispanic White	68.2%	63.7%	73.9%	23.4%	64.6%	57.4%
Total Minority[3]	31.8%	36.2%	26.1%	76.6%	35.4%	42.6%
Total Population	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

(1) Includes data from census tracts 525.01, 525.02, 525.15, 525.16, and 525.97.
(2) The Hispanic population is an ethnic not a racial category, and includes components in each of the five racial categories (i.e., Hispanic figures cannot be added to racial categories to reach total population figure; double counting would result).
(3) Includes Hispanic ethnic category and non-White racial categories; to avoid double counting, figure obtained by subtracting non-Hispanic White from total population.
Source: 1990 Census STF 3A

Tustin has the same non-White percentage of total population as the census tracts contiguous with the reuse plan area (27 percent), whereas the non-White population percentage is lower in Irvine (22 percent) and higher in Santa Ana (32 percent). In terms of proportion of Hispanic population, the census tracts contiguous with the reuse plan area have a much lower percentage of Hispanic residents (9 percent), than Tustin (20 percent), Santa Ana (65 percent), Orange County (23 percent), or the State of California (25 percent), but higher than Irvine (6 percent).

Expressed in terms of a total minority population, the census tracts contiguous with the reuse plan area has a lower total minority population percentage (32 percent) than Tustin (36 percent), Santa Ana (77 percent), Orange County (35 percent), or the state as a whole (43 percent), but somewhat higher than Irvine (26 percent). Thus, in comparison to the adjacent cities, the county, and the state, the census tracts contiguous with the reuse plan area cannot be considered a high minority population area.

According to DOF data shown in Table 3.2-4, the three cities contiguous with the reuse plan area – Tustin, Irvine, and Santa Ana – experienced a population growth of 12 percent (from 454,846 to 510,782) between 1990 and 1998 (California Department of Finance 1998). As shown in Table 3.2-4, population growth in Orange County was approximately 13 percent during that period. Population increased faster than that rate in the cities of Tustin and Irvine. Population growth was less than the Orange County average in Santa Ana.

Table 3.2-4
1990 and 1998 Population Estimates
Cities Contiguous with Reuse Plan Area

Area	Population		
	1990	1998	Percent Change (1990-1998)
Tustin	50,689	66,420	31%
Irvine	110,330	133,152	21%
Santa Ana	293,827	311,210	6%
Three City Total	454,846	510,782	12%
Orange County	2,410,668	2,722,291	13%

Note: data from April 1, 1990 and April 1, 1998.
Source: State of California Department of Finance (1990 and 1998).

Population projections are shown in Table 3.2-5. According to OCP-96 Modified data, the population in the area of the census tracts contiguous with the reuse plan area is expected to grow 33 percent between the years 2000 and 2020. As shown, this growth is uneven with this area. The population of the census tract that encompasses most of the reuse plan area (census tract 525.01) is expected to grow 319 percent, two other tracts are expected to experience no growth, while the remaining two are expected to see growth rates of 18 percent and 29 percent (the 319 percent population growth reflects anticipated civilian reuse of MCAS Tustin). In contrast, the population of Orange County is expected to increase by approximately 13 percent between the years 2000 and 2020. As shown in Table 3.2-5, the population of the three cities adjacent to the reuse plan area are expected to grow at a rate closer to that seen for the county as a whole than for the specific census tracts contiguous with the reuse plan area.

Housing

Table 3.2-6 provides information on housing units and occupancy rates for the census tracts contiguous with the reuse plan area. A total of 9,646 housing units existed in these census tracts. As shown, the occupancy rate for this area as a whole is approximately 94 percent. Table 3.2-7 presents comparative data for the immediately adjacent cities, the county, and the state. As shown, the occupancy rate for the contiguous census tracts is just slightly lower than the rate seen in the adjacent cities and the county as a whole, and just slightly higher than for the state as a whole. In 1993, MCAS Tustin contained 1,537 family housing units and 966 barrack units. As shown in Table 3.2-6, only census tract 525.01 contained persons living in military group housing among all of the census tracts shown, as well as for the cities of Tustin, Irvine, and Santa Ana.

Table 3.2-5
Population of Contiguous Census Tracts, Cities, and Orange Connty

Census Tract/ Area	2000	2005	2010	2020	Percent Change (2000-2020)
525.01	2,776	7,419	8,996	11,625	319%
525.02	6,388	6,509	6,458	6,360	0%
525.15	11,587	11,126	11,346	11,526	0%
525.16	11,811	13,389	13,600	13,948	18%
525.97	6,763	6,855	6,834	8,703	29%
Total, Contiguous Census Tracts	39,325	45,298	47,234	52,162	33%
Tustin	66,740	72,735	73,791	74,964	12%
Irvine	143,842	151,237	152,021	157,153	9%
Santa Ana	320,176	324,408	330,261	342,382	7%
Orange County	2,865,830	3,009,275	3,105,324	3,244,607	13%

Source: OCP-96 Modified

Table 3.2-6
1990 Housing and Housing Occupancy
Census Tracts Contiguous with Reuse Plan Area

Housing Units	Census Tract					Total
	525.01	525.02	525.15	525.16	525.97	
Occupied	1,290	1,967	254	3,481	2,028	9,020
Vacant	277	35	2	266	46	626
Total Housing Units	1,567	2,002	256	3,747	2,074	9,646
Percent Occupied	82.3%	98.2%	99.2%	92.9%	97.8%	93.5%
Group Quarters: Persons Living in Military Quarters	1,290	0	0	0	0	1,290

Source: 1990 Census STF 3A

Table 3.2-7
1990 Housing and Housing Occupancy
Cities Contiguous with Reuse Plan Area and Orange County

Housing Units	Area				Orange County	State of California
	Contiguous Census Tracts[1]	Tustin	Irvine	Santa Ana		
Occupied	9,020	18,332	40,257	71,611	827,066	10,381,206
Vacant	626	968	1,964	3,362	48,006	801,676
Total Housing Units	9,646	19,300	42,221	74,973	875,072	11,182,882
Percent Occupied	93.5%	95.0%	95.3%	95.5%	94.5%	92.8%
Group Quarters: Persons Living in Military Quarters	1,290	1,290	0	0	3,922	116,865

[1] Includes data from census tracts 525.01, 525.02, 525.15, 525.16, and 525.97.
Source: 1990 Census STF 3A

According to DOF data, the vacancy rate of the three cities contiguous witb the reuse plan area was less than the Orange County average in both 1990 and 1998 (Table 3.2-8). As shown, in 1998 Tustin had a vacancy rate of 5.2 percent, Irvine of 4.7 percent, and Santa Ana of 4.5 percent. These conditions suggest that the housing supply in these five cities is low and/or that demand is high relative to the county as a whole.

Table 3.2-8
1990 and 1998 Housing Estimates
Cities Contiguous with Reuse Plan Area and Orange Connty

Area	Occupied Housing Units			Vacancy Rate	
	1990	1998	Percent Change	1990	1998
Tustin	19,300	23,802	23%	5.0%	5.2%
Irvine	42,221	47,851	13%	4.7%	4.7%
Santa Ana	75,000	74,910	0%	4.5%	4.5%
Orange County	875,105	945,034	8%	5.5%	5.6%

Note: Data from April 1, 1990 and April 1, 1998
Source: State of California Department of Finance (1990 and 1998).

According to SCAG's Regional Housing Needs Assessment which is referenced in the *City of Tustin Housing Element*, there is a housing growth need for 2,085 dwelling units in the City of Tustin across all income categories. In addition, there is an 'affordability gap' in the City of Tustin and the City cannot guarantee that its housing needs will be met given its own limited financial resources (City of Tustin 1994a). High housing costs have put home ownership beyond the reach of many first-time home buyers in the City. Given the growth of larger families in Tustin, there is a need for larger housing units and rental housing that is both affordable and large enough to accommodate large, low income families. Housing overcrowding has increased significantly. Moreover, over 45 percent of the City's existing bousing stock will be 30 years old by the year 2000, typically the age at which bousing begins to require major repairs (City of Tustin 1997a).

According to the City of Irvine's Comprehensive Affordability Strategy, 76 percent of the 1,691 low income renter households are overpaying for housing in the city and 69 percent of low income owner households are overpaying for housing. Furthermore, 6.9 percent of renters or 60 percent of large families experience overcrowding. Given the projected population growth from 110,330 in 1990 to 132,300 in 2000, it is expected that 7,670 new bousing units will need to be built. Since 1989, approximately 2,000 residential units have been produced; however, this is 11,188 units less than

the 13,188 Regional Housing Needs Assessment goal identified in the 1989 *General Plan Housing Element* (City of Irvine 1995a).

DBCRA provides a process which aims to balance the needs of the homeless with other development interests in the community directly affected by the military installation. Under DBCRA, the LRA must consider the interest of the homeless in buildings and property on the base in preparing the Reuse Plan. According to *The Homeless Assistance Submission for MCAS Tustin* (City of Tustin, 1996d), it is estimated that there is a total net transitional and/or homeless housing need for 411 persons. A large portion of this need is to support emergency transitional housing for youth and individuals as opposed to more long term homeless shelter demand. There is a gap in the continuum of care in the areas of vocational and job training/educational opportunities, some emergency and transitional housing units for individuals and families, support services, and affordable ownership units.

According to OCP-96 Modified, the housing supply in the census tracts contiguous with the reuse plan area is projected to increase by approximately 28 percent (Table 3.2-9) between the years 2000 and 2020. As shown in the table, growth in housing supply is uneven between census tracts. The most dramatic growth (264 percent) is concentrated in census tract 525.01 (the tract that encompasses most of the reuse plan area). This reflects housing growth anticipated from civilian reuse of MCAS Tustin. Three of the tracts in this area are anticipated to experience no growth, while the remaining tract is expected to have a housing unit growth of 29 percent. During this same time frame, Orange County's housing supply is expected to increase by approximately 17 percent. The City of Tustin's supply of housing is expected to increase by approximately 14 percent and the City of Irvine's supply is expected to increase by 13 percent during that same period. Santa Ana housing is expected to grow at a more modest eight percent.

Employment

Table 3.2-10 illustrates total employment in the census tracts contiguous with the reuse plan area. As shown, armed forces employment was heavily concentrated in census tract 525.01, which contains the majority of the reuse plan area, with a lesser concentration (but still relatively high proportion) seen in tract 525.15, which contains the balance of the reuse plan area. Unemployment is lower in the census tracts contiguous with the reuse plan area (3.1 percent), than for the cities surrounding the reuse plan area (ranging from 3.4 percent in Irvine to 8.5 percent in Santa Ana) or for the county as a whole (4.8 percent). Table 3.2-11 provides the same information for the adjacent cities and the county as a whole. As shown, Tustin features a much greater proportion of armed forces employment than either

Table 3.2-9
Housing Units
Contiguous Census Tracts, Cities, and Orange County

Census Tract/Area	2000	2005	2010	2020	Percent Change (2000-2020)
525.01	1,254	2,876	3,435	4,561	264%
525.02	1,998	1,998	1,998	1,998	0%
525.15	3,397	3,397	3,397	3,397	0%
525.16	5,247	5,247	5,247	5,247	0%
525.97	2,074	2,074	2,074	2,674	29%
Total, Contiguous Census Tracts	13,970	15,592	16,151	17,877	28%
Tustin	25,178	26,963	27,588	28,727	14%
Irvine	53,136	57,105	57,658	60,159	13%
Santa Ana	75,290	76,043	77,183	81,486	8%
Orange County	990,311	1,045,284	1,080,818	1,154,528	17%

Source: OCP-96 Modified

Table 3.2-10
1990 Total Employment (Civilian and Armed Forces)
Censns Tracts Contiguons with the Reuse Plan Area

Employment	Census Tract					Total
	525.01	525.02	525.15	525.16	525.97	
Labor Force (Civilian)	1,176	3,447	227	5,833	3,831	14,514
Employed	1,118	3,351	227	5,671	3,699	14,056
Unemployed	58	96	0	162	132	448
Percent Unemployed	4.9%	2.8%	0.0%	2.8%	3.4%	3.1%
Employment in Armed Forces	2,191	35	241	12	25	2,504

Source: 1990 Census STF 3A

Table 3.2-11
1990 Total Employment (Civilian and Armed Forces)
Contiguons Censns Tracts, Cities, and Orange County

Employment	Area				
	Contiguous Census Tracts[1]	Tustin	Irvine	Santa Ana	Orange County
Labor Force (Civilian)	14,514	28,680	63,872	153,966	1,357,847
Employed	14,056	27,274	61,726	140,823	1,292,472
Unemployed	448	1,406	2,146	13,143	65,375
Percent Unemployed	3.1%	4.9%	3.4%	8.5%	4.8%
Employment in Armed Forces	2,504	2,714	848	353	12,184

[1] Includes data from census tracts 525.01, 525.02, 525.15, 525.16, and 525.97.
Source: 1990 Census STF 3A

Irvine or Santa Ana. Orange County armed forces employment included personnel employed at other facilities in addition to MCAS Tustin. In 1993, approximately 4,105 active duty military and 384 civilian personnel worked at MCAS Tustin (City of Tustin 1993a).

According to OCP-96 Modified projections displayed in Table 3.2-12, employment in the census tracts contiguous with the reuse area plan is expected to grow 24 percent between the years 2000 and 2020. As seen in the table, this growth is not even across the individual tracts, with the most dramatic growth (338 percent) expected in tract 525.97, east of the reuse plan area. The growth in tract 525.01, which contains the bulk of the reuse plan area, is expected to be approximately 24 percent. These increases reflect anticipated civilian reuse of MCAS Tustin. The total growth for the census tracts contiguous with the reuse plan area is much lower than the anticipated employment growth for the county as a whole (53 percent). It is also lower than the growth anticipated for each of the adjacent cities of Tustin, Irvine, and Santa Ana.

Table 3.2-12
Employment
Contiguous Census Tracts, Cities, and Orange County

Census Tract/Area	2000	2005	2010	2020	Percent Change (2000-2020)
525.01	82,312	86,589	91,570	101,966	24%
525.02	9,607	9,607	9,607	9,607	0%
525.15	0	0	0	0	0%
525.16	1,838	1,838	1,854	1,898	3%
525.97	990	1,006	1,024	4,337	338%
Total, Contiguous Census Tracts	94,747	99,040	104,055	117,808	24%
Tustin	42,097	45,988	49,545	55,183	31%
Irvine	134,248	139,495	151,455	189,743	41%
Santa Ana	195,196	215,749	237,083	314,978	61%
Orange County	1,381,695	1,550,394	1,717,282	2,116,559	53%

Source: OCP-96 Modified

Jobs-Housing Balance

As described in the Regional Comprehensive Plan and Guide (SCAG 1996), when the number of jobs and the number of available housing units are roughly equal within a certain subregion, then people will have an opportunity to live close to where they work. Given proximity, people would not have to commute as far and accordingly, traffic and congestion would be reduced, and air quality

would be improved. Policies and programs to promote a jobs-housing balance have been promoted by SCAG to achieve these goals.

In order to measure the jobs-housing balance, a simple ratio has been formulated, where the number of jobs in a region is divided by the number of households or housing units in a region. The result of this process is a number called the jobs-housing ratio. For the entire six-county SCAG region, the ratio was 1.28 in 1994 and is expected to increase to 1.36 by 2000, 1.42 by 2005, and to 1.44 by 2010 and 2020 (SCAG 1998).

Similarly, a jobs-housing ratio for a subregion can also be formulated. A subregional ratio greater than the regional ratio would indicate that a subregion is, in relative terms, 'jobs rich,' which is typical of employment centers, such as traditional central business districts. Anything less than the regional ratio would indicate that a subregion is relatively 'housing rich,' which is typical of more suburban bedroom communities.

According to OCP-96 Modified, the jobs-housing ratio for Orange County was 1.34 jobs per housing unit in 1995. Table 3.2-13 illustrates the jobs-housing balance projected for the census tracts contiguous with the reuse plan area, along with the adjacent cities of Tustin, Irvine, and Santa Ana, as well as Orange County. As shown, the area encompassed by the census tracts contiguous with the reuse plan area is expected to have a ratio well above six jobs for every housing unit during period illustrated. This compares with a ratio for the county as whole that is expected to climb from 1.4 in 2000 to over 1.8 by 2020. As shown in Table 3.2-13, the three adjacent cities of Tustin, Irvine, and Santa Ana all have jobs to housing ratios higher than the county as a whole for each of the years shown during the period 2000 to 2020.

Income

Information on median household income and percentage of persons below poverty level in the census tracts contiguous with the reuse plan area is presented in Table 3.2-14. As sbown, the median household income varies among the tracts, with the tract baving the highest median household income ($61,005) being more than double the median income of the tract with the lowest median bousehold income ($24,233). Approximately 3.5 percent of the total population of these tracts combined lives below the poverty level but as shown in the table the percent of persons living below the poverty level varies from tract to tract. Poverty level is defined as an average income of less than $12,674 per year for a household of four in 1989. The dollar value is based on a national average and is not adjusted for regional variations in the cost of living.

Table 3.2-13
Jobs-Housing Ratio
Contiguous Census Tracts, Cities, and Orange County

Census Tract/Area	2000	2005	2010	2020
525.01	65.64	30.11	26.66	22.36
525.02	4.81	4.81	4.81	4.81
525.15	0.00	0.00	0.00	0.00
525.16	0.35	0.35	0.35	0.36
525.97	0.48	0.48	0.49	1.62
Total, Contiguous Census Tracts	6.78	6.35	6.44	6.59
Tustin	1.67	1.71	1.80	1.92
Irvine	2.53	2.44	2.63	3.15
Santa Ana	2.59	2.84	3.07	3.87
Orange County	1.40	1.48	1.59	1.83

Source: OCP-96 Modified. OCP-96 Modified uses total housing units (as opposed to occupiod housing units) for calculation of jobs housing ratio.

Table 3.2-14
Median Household Income and Percent of Persons in Poverty
Census Tracts Contiguous with Rense Plan Area

Income/Poverty Level	Census Tract					Total
	525.01	525.02	525.15	525.16	525.97	
Median household income (1989)	$29,188	$61,005	$24,233	$58,645	$60,812	NA
Total population	5,277	5,883	880	9,073	6,340	27,453
Persons for whom poverty status was determined [1]	3,978	5,875	880	9,053	6,309	26,095
Persons below poverty level	63	145	47	552	120	927
Percent of persons below poverty level (1989)	1.6%	2.5%	5.3%	6.1%	1.9%	3.5%

[1] Persons for whom poverty status is determined is typically a very large subset of the total population. The proportion of persons for whom poverty status was determined is quite small for census tract 525.01 in comparison to other tracts in the area, but this is not an unusual circumstance for tracts containing military facilities and personnel.
Source: 1990 Census STF 3A

Table 3.2-15 presents comparative information on median household income and poverty level for the cities within, or adjacent to, the reuse plan area, the county, and the state. As shown, the percentage of persons living below poverty level in the census tracts contiguous with the reuse plan area (3.5 percent) is far less than the percentage of persons living below poverty level for any of the three cities adjacent to the reuse plan area, the county, or the state (ranging between 6.4 percent and 18.1 percent). Three of the five census tracts contiguous with the reuse plan area have median household incomes greater than the median household income for any of the cities shown, as well as the county and the state as a whole. The two tracts that encompass the reuse plan area itself are below the median household income level for all three cities, the county, and the state.

Table 3.2-15
Median Household Income and Percent of Persons in Poverty
Census Tracts and Cities Contiguous with Reuse Plan Area,
Orange Connty, and California

Income/Poverty Level	Area				Orange County	State of California
	Contiguous Census Tracts[1]	Tustin	Irvine	Santa Ana		
Median household income (1989)	NA	$38,433	$56,307	$35,162	$45,922	$35,798
Total population	27,453	50,689	110,330	293,742	2,410,556	29,760,021
Persons for whom poverty status was determined	26,095	48,749	107,923	285,618	2,369,931	29,003,219
Persons below poverty level	927	3,339	6,948	51,835	200,860	3,627,585
Percent of persons below poverty level (1989)	3.5%	6.8%	6.4%	18.1%	8.5%	12.5%

[1] Includes data from census tracts 525.01, 525.02, 525.15, 525.16, and 525.97.
Source: 1990 Census STF 3A

Fiscal and Economic Considerations

The setting describes baseline conditions by which the project alternatives are assessed, including baseline employment levels at MCAS Tustin and the associated fiscal impacts/benefits of the site on the local and regional economy, and current (post-base closure) and anticipated future economic conditions of the site and its economic influence on the region.

MCAS Tustin has been a part of the economic context of the region from its inception in 1942 through the closure and disposal process. As a geographic area, the site was literally integrated into local

jurisdictions. A large portion of the site (1,507 acres) was annexed by the City of Tustin in 1976, and 95 acres were annexed earlier (1971) by the City of Irvine. As an economic entity, the site was integrated, to a large degree, in the local economy. Although by its nature as a military facility the site was 'more separate' from the local economy than would most civilian activities of a similar scale (for example, military personnel assigned to the facility are not considered part of the local labor force), the closure and realignment of MCAS Tustin has had an impact on the local economy.

In 1993, approximately 4,105 active duty military and 384 civilian personnel were employed at the site, and an additional 3,150 dependents of active duty Marines lived in family housing at the Air Station. While the number of jobs lost as a result of closure are statistically small relative to the overall Orange County region, the direct and indirect effects represent a loss to the jurisdictions involved.

As of 1993, the budget for MCAS Tustin was approximately $69 million. Approximately three-quarters of the budget, over $51 million, was comprised of payroll. Most expenditures, including purchases of goods and services along with payroll, were made locally. The City of Tustin has estimated that these expenditures had between a 1.75 and 2.75 multiplier ratio effect on the local economy (through indirect or secondary employment and spending), representing a contribution of between $121 million and $173 million in capital from MCAS Tustin (City of Tustin 1999d). Although the specific figures may be subject to debate based on the imprecise nature of the assumptions used in their generation, they serve to provide an understanding of the order of magnitude of local economic impact of closure.

In terms of employment, the LRA has estimated that MCAS Tustin contributed approximately 2,000 jobs to the regional economy (City of Tustin 1999d). The LRA figure was derived using a total local area multiplier of 1.25 for civilian jobs and 0.26 for military jobs. Realizing that these figures take into account a number of assumptions, and the relationship of military jobs to associated civilian jobs is not straightforward, the figure of 2,000 jobs lost represents a useful working assumption and an indication of the order of magnitude of the loss rather than a precise data point.

In terms of support sector businesses, no detailed economic analysis is available for local civilian businesses that historically contracted with MCAS Tustin. It is assumed, however, that individual businesses lost revenue following the decline of activity at the facility, and that these businesses would not relocate to realignment sites.

3.3 UTILITIES

This section describes the utility delivery system and quantities of usage under baseline conditions including water, sewer, drainage, electricity, natural gas, aviation fuel, telephone, cable and solid waste. Because MCAS Tustin is the only utility service provider of baseline conditions in the reuse plan area, the text refers to MCAS Tustin or Air Station.

Much of the information contained in this section references the *Tustin Special Area, Utilities Study* (City of Tustin 1993n), the *MCAS Tustin Reuse Plan, Utilities Inventory* (City of Tustin 1993g), the *Final Community Facilities and Infrastructure Plan* (City of Tustin 1995a), and the *EIS/EIR Environmental Setting Report Specific Plan and Base Disposal/Reuse Plan for MCAS Tustin* (City of Tustin 1993a). These documents were prepared for the City of Tustin in close coordination with the Marine Corps.

3.3.1 Water

Most of the drinking and irrigation water for southern California is imported via the State Water Project from northern California, the Colorado River, and the Los Angeles Aqueducts. Only about one-fourth of the water is provided by local surface, groundwater, and reclaimed sources.

The reuse plan area is located within the service jurisdiction of the Irvine Ranch Water District (IRWD). The IRWD obtains water from several sources including local surface reservoirs, groundwater wells, imported water, and reclaimed water. The IRWD imports approximately 67 percent of its water via the Metropolitan Water District (MWD) from the Colorado River and northern California. The remaining 33 percent is predominantly pumped from local wells. Reclaimed water supplements this supply and provides water for non-domestic uses such as for agriculture and landscape irrigation. The IRWD's collected wastewater is treated at the district's Michelson Reclamation Plant and used as reclaimed water (City of Tustin 1993a).

Potable Water

IRWD Distribution System

An extensive IRWD water distribution system extends around the perimeter of the Air Station and includes two feeder mains which cross through the center of the Air Station. The primary Air Station water transmission main is a 16-inch ~~IRWD~~ pipeline that extends northeast-southwest through the

center of the Air Station connecting the 54-inch IRWD feeder main in Barranca Parkway with a 12-inch main in Edinger Avenue. An 18-inch high-pressure "Navy Line," which primarily provides high-demand fire flow backup, provides a secondary connection to the regional water distribution system, via the connection with the 78-inch MWD East Orange County Feeder Line No. 2 in Red Hill Avenue along the northwestern perimeter of MCAS Tustin. MWD Feeder Line No. 2 extends as a 72-inch line in Barranca Parkway along the southwestern perimeter of the Air Station, parallel with the 54-inch IRWD Wellfield Line. IRWD has a 42-inch feeder main in Harvard Avenue (City of Tustin 1995a).

Four existing non-operational IRWD wells are also located along the western edge of the Air Station. There are also irrigation wells that are only used for agriculture and as a water supply on leased land (City of Tustin 1995a). Other wells on site are semi-abandoned and do not provide water for consumption. However, some of the wells are used periodically by the Orange County Water District for testing of regional groundwater (City of Tustin 1993).

Water Distribution System

Water service is primarily provided to the Air Station operations facilities and housing areas from seven service connections, four of which are directly connected to an 18-inch "Navy Line" and three of which are connected to 12-inch and 16-inch mains with ties between the 18-inch "Navy Line" and large IRWD mains. The majority of the lines range from 8 to 12 inches and are owned by the DON (City of Tustin 1995a).

The MCAS Tustin water system was designed for military uses which has different design criteria than urban civilian uses. For example, the fire flow demand requirements and points of connections have different criteria for military and civilian use.

Water System Capacity

Potable water is purchased by the IRWD from the MWD distribution system or pumped from local wells. Capacity in the year 2000 is estimated to be approximately 109 million gallons per day (MGD). Year 2000 average daily demand is estimated to be approximately 50 MGD (about 46 percent of capacity), and peak demand is estimated to be approximately 90 MGD (about 82 percent of capacity).

IRWD's reclaimed water consists of treated wastewater processed at the Michelson Water Reclamation Plant in the San Joaquin Marsh in Irvine. The plant can treat at most approximately 18 MGD to be redistributed as reclaimed water. Presently, the plant processes about 14 MGD of reclaimed water. Several days a summer, when demand sometimes exceeds supply, the reclaimed water is supplemented with potable water or well water in order to meet demand. The Michelson Water Reclamation Plan ultimate capacity (year 2025) is expected to be approximately 35 MGD (IRWD 1999b).

Baseline Water Use

Potable water facilities were capable of supplying the approximately 1.3 MGD of potable water consumed at the Air Station. Of that volume, 0.8 MGD were consumed by the Air Station's military operations and 0.5 million gallons by on-site housing facilities (City of Tustin 1993n). The cities of Tustin and Irvine, IRWD, and DON require the use of water-saving features, which may include low-flow fixtures, drought-tolerant landscaping, use of reclaimed water, and other techniques.

Reclaimed Water

MCAS Tustin has one reclaimed water line. This line runs parallel and adjacent to the Navy 18-inch water line, which extends across the Air Station from Edinger Avenue to Barranca Parkway. The reclaimed water line presently supplements well water for agricultural activities on the Air Station. It is fed from the reclaimed water line running from Harvard Avenue along Barranca Parkway. This line is planned to be extended northwesterly along Barranca Parkway to Von Karman Avenue and then to proceed southwesterly along Von Karman Avenue (City of Tustin 1995a).

Under baseline conditions, MCAS Tustin used as much as 0.16 MGD of reclaimed water for agricultural irrigation.

Well Water

One irrigation well, located close to Barranca Parkway, is used to supplement the IRWD reclaimed water for agricultural operations. In the baseline, approximately 0.8 MGD were pumped for agriculture.

3.3.2 Sewer

The main elements of the sewer system at MCAS Tustin that form the "backbone" of the existing system are more than 50 years old and operate at capacity. The existing collection and conveyance system serves three separate service areas as described below. All wastewater generated at MCAS Tustin is conveyed and treated by the Orange County Sanitation District (OCSD) and IRWD (City of Tustin 1993n).

Because of the extreme environmental sensitivity of coastal receiving waters in this area, all wastewater receives tertiary treatment prior to its release into these receiving waters. A major portion of the area's wastewater is treated, reclaimed, and reused throughout the surrounding area for agricultural and landscape irrigation, and is reused in flushing systems for high-rise buildings (IRWD 1998a).

Sewer Collection System

North and Easterly Sewer Service Area

This area consists of the Air Station operations, administrative facilities, and the family housing area along Edinger Avenue (274 dwelling units). This sewage service area includes lift station service requirements for a portion of the family housing area and a portion of the Air Station-operations area. Flows are collected by a tributary to a ±8,000-foot trunk sewer, which discharges by gravity to a point of connection to the OCSD system at Red Hill Avenue near Warner Avenue at the western perimeter of the Air Station. The key elements of this system were constructed in the 1940s but are considered to be in reasonably good condition (City of Tustin 1993n).

Family Housing Service Area (North of Warner Avenue)

This area contains the older section of MCAS Tustin family housing and the newer housing units on the east side of the Air Station (861 dwelling units). Wastewater from within this service area is collected and conveyed (with the assistance of one small collection lift station) under the Peters Canyon Flood Channel to a pumping station northwest of Jamboree Road, north of Warner Avenue. From this point, the flow is pumped nearly 12,000 feet through a 10-inch force main to a point of discharge into the OCSD trunk sewer system at Red Hill Avenue and Barranca Parkway. Early elements of this system were built in the 1940s, but the pumping station and force main have been

replaced in recent years to provide for relocation of the pumping station and an increase in system capacity (City of Tustin 1993n).

Facility Housing Service Area (South of Warner Avenue)

The most recent addition to the family housing area contains 402 units of family housing. Wastewater flow from this area discharges by gravity to the 45-inch IRWD Harvard Avenue trunk sewer. Conveyance, treatment, and disposal services beyond that point are provided by the IRWD. Operation and maintenance requirements for this system are minimal (City of Tustin 1993n).

Sewage System Capacity

The Air Station infrastructure provided capacity for the approximately 0.7 MGD of effluent. Of that flow, 0.5 MGD were generated by military operations and 0.2 MGD by housing on the Air Station (City of Tustin 1993n).

The IRWD processes wastewater from within its jurisdiction at the Michelson Water Reclamation Plant in Irvine. Wastewater treated at the facility is converted into reclaimed water and distributed to the IRWD's reclaimed water system. This plant currently provides capacity for approximately 18 MGD of wastewater to be converted into reclaimed water. The plant's ultimate configuration (year 2025) is expected to be able to process about 35 MGD of wastewater into reclaimed water. Average daily flows are about 14 MGD (IRWD 1999b).

If more sewage is received at the Michelson Wastewater Reclamation Plant that its capacity allows it to process, this excess sewage is conveyed via OCSD facilities to the Orange County Sanitation District Treatment Plant No. 1 in Fountain Valley. If flows to this facility exceed capacity, excess flows are diverted to the Orange County Sanitation District Treatment Plant No. 2 in Huntington Beach. The combined capacity of these facilities is approximately 480 MGD. Currently, average daily flows range from approximately 240 MGD to 250 MGD (between 50 to 52 percent of capacity).

The OCSD has not estimated future demand quantitatively. However, the OCSD has prepared a strategic plan to upgrade its systems to accommodate increased sewer flows within its jurisdiction. This plan anticipates urban uses at MCAS Tustin, and future upgrades have been designed to accommodate flows from the reuse plan area.

3.3.3 Drainage

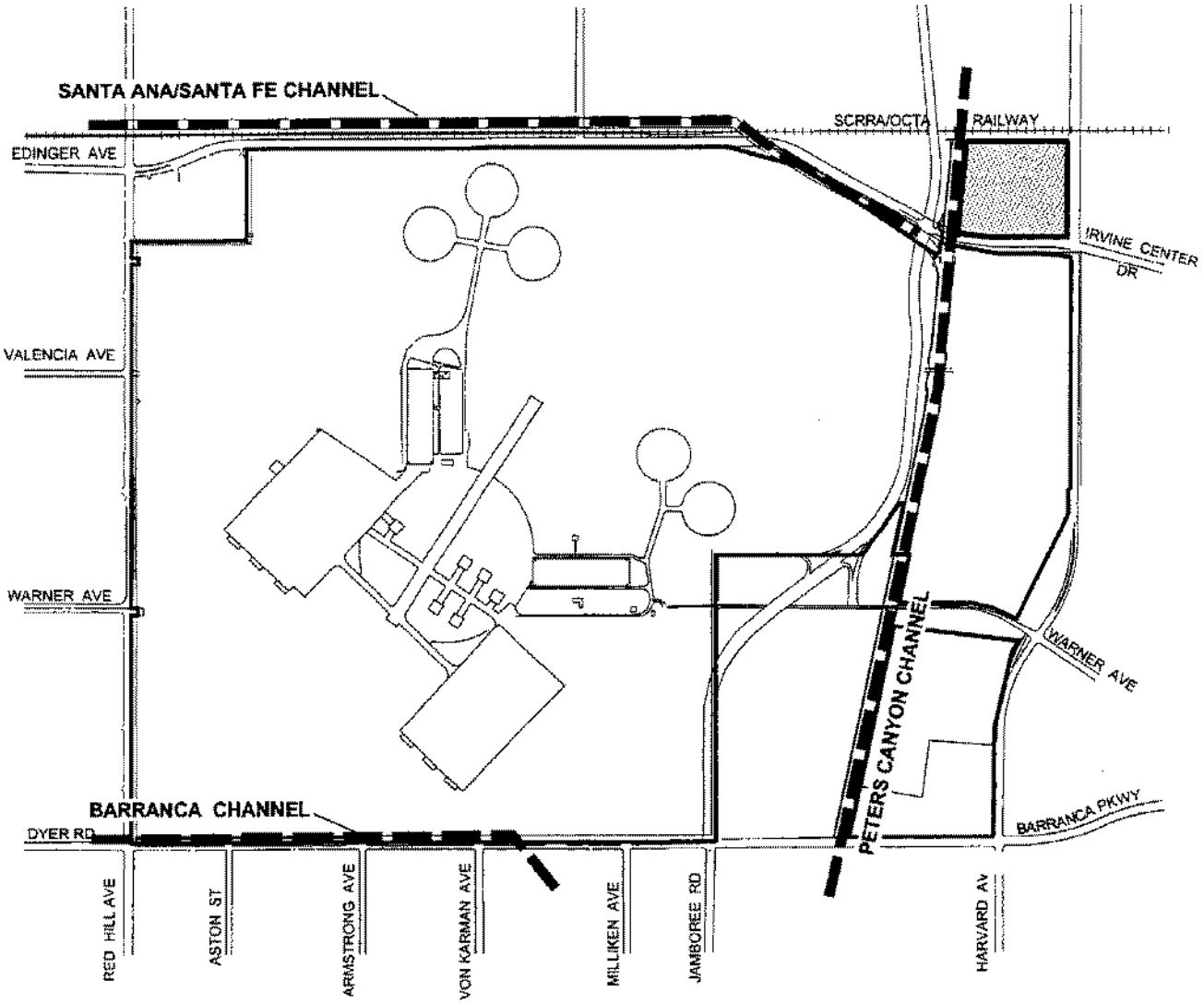
Storm water on the Air Station is conveyed by earthen channels to regional flood control facilities operated by the Orange County Flood Control District (OCFCD), including the Peters Canyon Channel and the Barranca Channel. In addition, the Santa Ana-Santa Fe Channel runs along the northeastern boundary of the reuse area and drains areas to the north and northeast of the Air Station (Figure 3.3-1). The OCFCD has existing easements for these flood control channels.

The existing storm drain system on the Air Station, with the exception of the Barranca Channel, is owned and maintained by the military under the direction of the MCAS Tustin Facilities Management Division. The main storm drain systems on the Air Station are located in the western portion of the site and discharge into Barranca Channel. Barranca Channel (Facility No. F09) is an earthen-lined channel having a base width of approximately 15 feet and 2:1 side slopes. The channel runs adjacent to the southwestern boundary of the Air Station parallel to and just north of Barranca Parkway. OCFCD owns and maintains this facility (City of Tustin 1995a).

Peters Canyon Channel runs through the Air Station just east of Jamboree Road. The northeast half of the Air Station is considered part of its drainage system (City of Tustin 1995a). Runoff from the Air Station housing located southeast of Peters Canyon Channel drains to the Peters Canyon Channel (Facility No. F06) through the OCFCD Valencia Storm Drain (Facility No. F06S02). The existing storm drain system consists of pipes varying in size from 39 inches to 84 inches in diameter along Red Hill Avenue, and a 10-foot-wide box culvert near the intersection of Red Hill Avenue and Barranca Parkway.

The existing OCFCD Santa Ana-Santa Fe Channel parallels Edinger Avenue and portions of the site drain into it. The channel passes under the existing SCRRA/Orange County Transit Authority (OCTA) Railway line and Edinger Avenue approximately 2,100 feet northwest of Jamboree Road. This channel is currently undersized which results in flooding north of Edinger Avenue during severe storm flows. OCFCD is currently assessing how to improve this channel (City of Tustin 1995a).

The Federal Emergency Management Agency (FEMA) prepares Flood Insurance Rate Maps (FIRM) to identify potential flood hazards from a 100-year flood event. A Letter of Map Revision (LOMR) has been issued by FEMA for the reuse plan area (FEMA 1999). The revised FIRM map identifies one small area of potential flood zone, while flood waters in the remainder of the reuse plan area would be contained successfully in Peters Canyon Channel (FEMA 1999). The potential flood zone



Source: MCAS Tustin Community Facilities and Infrastructure Plan, Figure 3.8-B, July 1995;
FEMA Map #0605960039E, September 15, 1987
Base map: HNTB 1999

Figure 3.3-1
Existing Drainage Channels and Flood Zone

in the reuse plan area is the undeveloped parcel between Jamboree Road and Harvard Avenue, north of Edinger Avenue. It is identified in the FIRM as zone AH where flood depths would be one to three feet (areas of ponding).

3.3.4 Electricity

Southern California Edison Company (SCE) currently provides electricity to the project site. Power is provided through SCE's seven 12-kilovolt (kV) service lines feeding the site's multiple-level radial power distribution system. The site system is composed of four separate electrical systems servicing family housing areas and the Air Station facilities (City of Tustin 1993n).

The Air Station operations area is served by SCE lines Nos. 1, 2, 3, and 5. The barracks are serviced by SCE overhead line No. 5. SCE underground line No. 3 provides localized service to an operations building located off Barranca Parkway. This service is isolated from the remainder of the Air Station. The Air Station has been converting to an all underground 12-kV distribution system. Currently, only two areas serviced by the overhead distribution lines (Lines Nos. 2 and 5) are left. These lines extend beyond the Air Station boundary along Barranca Parkway and Valencia Avenue.

A dedicated SCE direct underground feeder, which is independent of the Air Station operations area electrical systems, provides electrical service to the northeast housing area. The southeast housing area receives dedicated SCE electrical service via direct underground feeders to the newer housing units, and overhead lines to the older housing units. This service is provided by SCE service line No. 4 and is independent of the Air Station operations area electrical systems.

There are two main electrical substations on the site. Substation No. 1, located on Perry Drive, supplies the majority of the power used for Air Station operations. This substation has served the Air Station since its initial commissioning. Substation No. 2 provides a secondary source of electrical service to the Air Station operations area and is serviced by SCE Line No. 2. The Air Station does have a 600-kilowatt (kW) emergency generator capable of supplying emergency power to the control tower and airfield.

In 1992, these combined facilities provided capacity for the 27.9 million kilowatt hours (kWh) used on the Air Station (City of Tustin 1993n).

3.3.5 Natural Gas

Natural gas is currently supplied to the site by the Southern California Gas Company (SCGC), which is the main gas supplier in Orange County. SCGC currently receives over 90 percent of its supply from out-of-state sources. At present, the supply and demand for natural gas is balanced, as the demand determines the amount of the imported gas supply.

The site's natural gas distribution system consists of approximately 40,000 linear feet of piping. The system was originally installed with steel piping in 1943. Since then, approximately 95 percent of the piping has been replaced with polyethylene piping, which does not corrode and is considered to be in good condition. The steel piping is considered to be slightly corroded. The Air Station operations system consists of radial loops with a few dead-end mains. Underground branch mains serve individual buildings and facilities.

The system is fed through eleven master meters. Five of these connections serve the Air Station operations area. With the exception of a portion of the northwest housing area, all housing areas are provided natural gas service that is independent of the system serving the Air Station operations area. The residential areas are each served via a meter off SCGC's main. The depth of the mains serving the Air Station varies from two to five feet below grade, with a primary gas pressure of six to seven pounds per square inch.

Natural gas facilities provided capacity to supply the Air Station with 103.5 million cubic feet of gas in 1992. Of that, 48.2 million cubic feet were consumed by the station's operations and 55.3 million cubic feet by housing uses (City of Tustin 1993n).

3.3.6 Aviation Fuel

Aviation fuel is provided to MCAS Tustin via four- and six-inch fuel lines feeding off the JP-5 aviation fuel line. These lines run generally east-west through the northern portion of the Air Station. The fueling system includes six aircraft direct fueling points, four aboveground fuel tanks, and five underground storage tanks, including one JP-5 fuel tank (DON 1998b). Most of the inactive underground tanks have been removed. Others were emptied, cleaned, and sealed in 1990-91. The JP-5 aviation fuel line and underground storage tanks are discussed in detail in Section 3.11 (Hazardous Wastes, Substances, and Materials).

3.3.7 Telephone

Telephone services are provided to MCAS Tustin by the Pacific Bell Company. A single duct bank with telephone lines extends along Moffett Drive to buildings located in the administration area complex on the Air Station's north side. All ducts, pull boxes, and other structural facilities were constructed by and are owned by the military (City of Tustin 1993n). The existing telephone system provides service to the Air Station operations area separate from services to the family housing areas. The Air Station-operations area is served from the Tustin exchange, and the family housing areas are served by the Irvine exchange (City of Tustin 1993k and 1993l).

Pacific Bell owns the lines used by the military facilities. Telephone service to newer Air Station and housing facilities is provided via underground service conduits (City of Tustin 1993k, and 1993l).

3.3.8 Cable Television

Cable service is presently provided to limited areas of MCAS Tustin by Cox Cable. These areas include the existing housing east of Peters Canyon Channel, the family housing area just southwest of Edinger Avenue, and the barracks between Valencia Avenue and Warner Avenue, just southeast of Red Hill Avenue. Cable service is provided to the areas southeast of Peters Canyon Channel via a fiber-optic main feeder along Harvard Avenue. The northern family housing area and barracks are served through a connection with the Harvard Avenue feeder at the intersection of Harvard Avenue and Moffett Avenue (City of Tustin 1995a).

3.3.9 Solid Waste

The Frank R. Bowerman Landfill is the primary facility that receives solid waste from Tustin and Irvine, including MCAS Tustin. The Frank R. Bowerman Landfill is located in an unincorporated area near the City of Irvine and is owned and operated hy the County of Orange Integrated Waste Management Department. The landfill is scheduled to close in the year 2024. The total permitted capacity of the landfill is 117.0 million cubic yards (mcy), of which 20.6 mcy has been used (County of Orange 1998).

Solid waste collection and disposal at MCAS Tustin is provided by Federal Disposal, a private firm operating under contract with the federal government. Military activities and residents in military housing at the Air Station generate approximately 4,688 tons of solid waste per year. The main

station generates approximately 1,683 tons of solid waste per year, while housing areas generate approximately 3,005 tons per year (City of Tustin 1993n).

Currently, residential and commercial waste hauling for the City of Tustin is contracted to a private firm, Great Western. Residential waste is delivered to Sunset Environmental, a materials recovery facility (MRF), where recyclahles are removed. Waste that cannot be recycled is disposed of at the Frank R. Bowerman Landfill (County of Orange 1998).

Waste collection and recycling services for the City of Irvine for residential areas and commercial units located in the residential area are provided exclusively hy Waste Management of Orange County, a private firm operating under contract to the city. A residential source separation recycling program is provided to all residential units receiving curbside waste collection service. Apartment complexes utilizing central bins for waste collection are part of this exclusive commercial waste and recycling service system provided by Waste Management (City of Irvine 1999b). Residential waste is delivered to Sunset Environmental, a MRF, wbere recyclables are removed. Waste that cannot be recycled is disposed of at the Frank R. Bowerman Landfill (County of Orange 1998).

Other commercial and industrial units, in areas not covered under the exclusive Waste Management of Orange County contract, are provided with waste collection and recycling services by various waste haulers permitted by the City of Irvine. Permitted waste haulers are required to divert a portion of their collected waste from landfills to assist the City of Irvine in its waste diversion efforts. Solid waste from non-residential areas within the City of Irvine is disposed of primarily at County of Orange Landfills (City of Irvine 1999b).

Under the California Integrated Waste Management Act (A.B. 939, 1988-89 Session, Statutes of 1989. 1989 Cal. Chaptered Law 1095), the cities of Tustin and Irvine are required to reduce tbe amount of solid waste disposed hy 50 percent from 1990 levels by the year 2000 (City of Irvine 1999b). As required, both cities have adopted, and the state has approved, Source Reduction and Recycling Elements (SRRE) which demonstrate the programs that will be implemented to meet the 2000 mandate (County of Orange 1998).

Under the requirements of the California Integrated Waste Management Act (A.B. 939, 1988-89 Session, Statutes of 1989. 1989 Cal. Chaptered Law 1095), the County of Orange established *County of Orange Countywide Siting Element* (CSE) (County of Orange 1995h) in order to minimize the amount of waste requiring disposal through source reduction, recycling, and composting. The CSE is designed to provide adequate long-term landfill disposal capacity for waste disposed of in

landfills within Orange County. According to the policies of the CSE, the county will have at all times a minimum of 15 years available disposal capacity. Currently, the county has more than 15 years of available capacity. As a result, no specific tasks have been identified to implement the county's CSE.

3.4 PUBLIC SERVICES AND FACILITIES

Public services and facilities addressed in this section include fire protection, police protection, schools, libraries, park and recreation facilities, and bikeways/trails. The purpose of this discussion is to describe how such services and facilities were provided to the reuse plan area during baseline military operations; information has been updated to reflect current conditions, where appropriate.

3.4.1 Fire Protection and Emergency Response Services

MCAS Tustin provided its own fire protection services. The Air Station had a Structural Fire Protection Division with approximately 30 civilian fire personnel with two engine and two pump engine crews, one of which was temporarily located in a converted housing unit. The Air Station also provided an aircraft crash fire rescue unit and training pits. MCAS Tustin maintained a mutual aid agreement with the Orange County Fire Authority (OCFA) for mutual aid fire and rescue assistance as requested (OCFA 1998).

OCFA provides services to 19 jurisdictions including the cities of Tustin and Irvine and County of Orange. The City of Tustin contracts with OCFA to provide fire services. Fire response is provided from stations within the City of Tustin and in adjacent unincorporated county area. OCFA Fire Station No. 37, located on Red Hill Avenue north of the SCRRA/OCTA railroad tracks, is the closest OCFA-operated fire station to the reuse plan area. It is owned by the City of Tustin. OCFA Fire Station No. 43 is located in East Tustin near the intersection of Jamboree Road/Tustin Ranch Road. The two OCFA-owned stations in unincorporated areas that routinely respond to calls include OCFA Fire Station No. 21 on Irvine Boulevard and OCFA Fire Station No. 8 in Cowan Heights.

Together, these four stations operate four engines, one truck, one paramedic van, and one battalion chief, utilizing three shifts totaling 45 suppression staff and a roster of 25 volunteer firefighters. The response time goal is for the first company to arrive on scene within five minutes 80 percent of the time and within ten minutes for paramedic calls 80 percent of the time. Fire Station No. 37 operates within the five-minute response time goal for the reuse plan area (OCFA 1998).

OCFA operates six stations within the City of Irvine. Fire Station No. 6 is the closest to the reuse plan area. Fire Station No. 6 opened in 1995 near the intersection of Barranca Parkway/Harvard Avenue. Equipment operated at this station includes a paramedic assessment engine and a truck company. Staffing consists of 21 suppression staff utilizing three shifts. The reuse plan area is within the five-minute response time goal (OCFA 1988).

The City of Santa Ana provides fire protection service by operating ten stations throughout the City of Santa Ana. Although not a member of OCFA, the Santa Ana Fire Department maintains a mutual aid agreement with the OCFA; both agencies share resources if needed. The average response time within Santa Ana is two-to-three minutes (OCFA 1998).

3.4.2 Police Protection

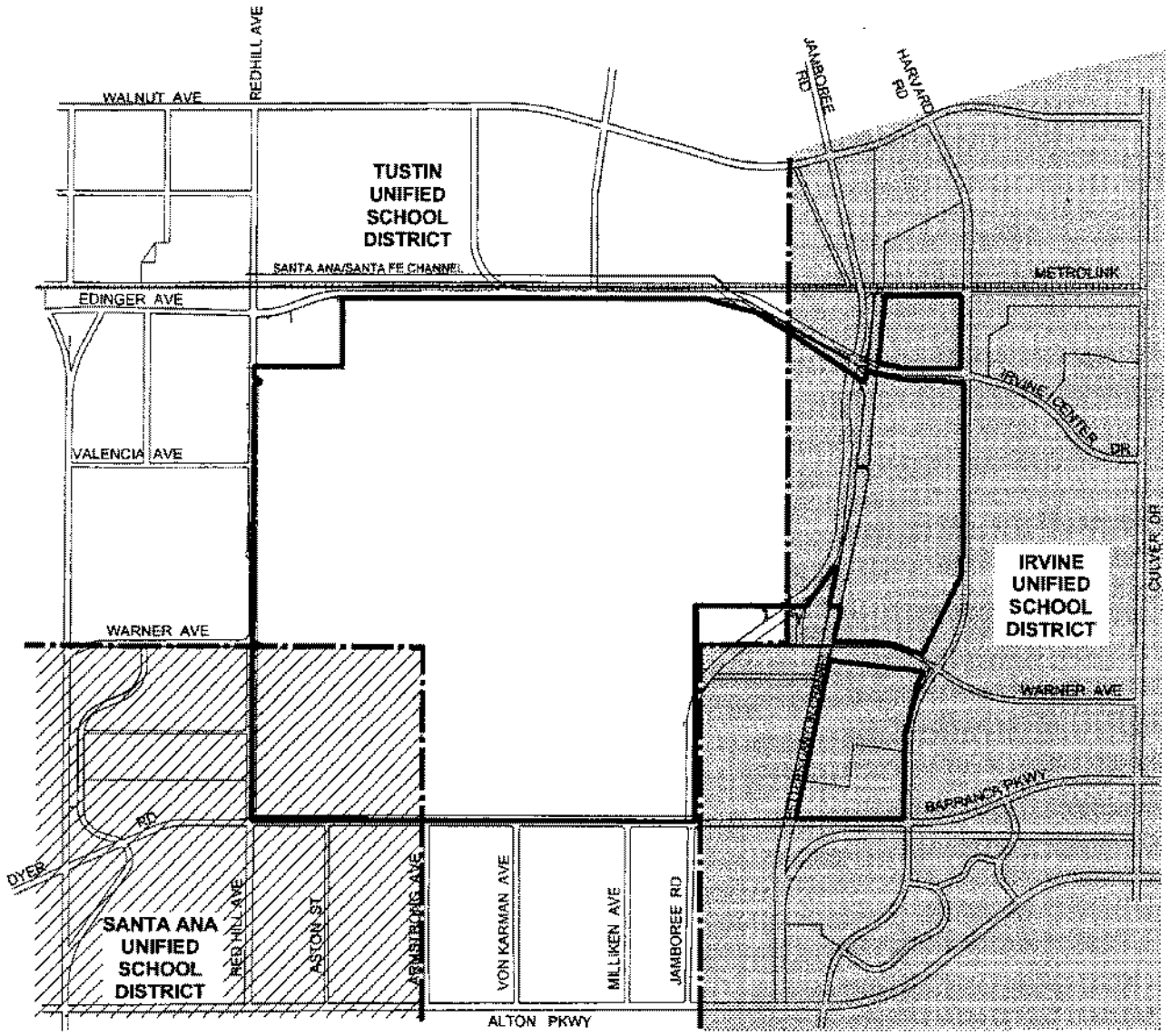
Police protection for MCAS Tustin was provided primarily by the military security forces as part of routine Air Station security. Approximately 79 military police are assigned to the Air Station. The jurisdiction of the military police unit is limited to military sites. Some police matters, such as domestic violence, child abuse, and any matter involving civilians, were handled by the local city police departments of the cities of Tustin and Irvine (City of Tustin 1993a).

In Tustin, police protection services are provided by the City's Police Department, which has a full-time staff of 120, including 84 sworn officers. The department maintains one station located at the Tustin Civic Center. The City of Tustin is divided into four beats. The reuse plan area is located within Patrol Beat No. 3. Emergency response time averages 3.5 minutes, with non-emergency response time typically between 10 and 12 minutes. Booking and detention facilities in Tustin are provided under an agreement with the County of Orange (City of Tustin 1993a).

The Irvine Public Safety Department provides protection services, with a total staff of 201, including 142 sworn officers. The department has a central police facility located in the southwestern portion of the City. For life-threatening emergencies and serious crimes, the department responded within six minutes 85 percent of the time in the year 1997. Non-emergency crimes in progress (e.g., vandalism, etc.) were responded to within 30 minutes 90 percent of the time in 1997. Booking and detention facilities in Irvine are provided under an agreement with the County of Orange (City of Irvine 1998).

3.4.3 Schools

The reuse plan area is located within three local school districts, Tustin Unified School District, Irvine Unified School District, and Santa Ana Unified School District (SAUSD). Figure 3.4-1 illustrates the boundaries of these three districts in relation to the reuse plan area.



Base Map: HNTB 1999

500 0 1000 2000 ft

Figure 3.4-1
Boundaries of School Districts

Tustin Unified School District (TUSD)

Approximately 1,100 acres of the site, or 70 percent, is within the Tustin Unified School District (TUSD). However, only 274 existing military housing units fall within the TUSD. In 1991, approximately 330 students from military housing at the Air Station attended schools in the TUSD.

The TUSD operates 14 elementary schools, four middle schools, and two high schools. Another elementary school is scheduled to open in September of 1999. The TUSD also operates a continuation high school and an alternative education adult school. There is enrollment capacity for additional students at all grade levels (TUSD 1999).

Irvine Unified School District (IUSD)

A total of 1,263 military housing units fall within the boundaries of the Irvine Unified School District (IUSD). In 1991, approximately 660 students living in MCAS Tustin military family housing attended schools in the IUSD (IUSD 1992).

The IUSD operates 20 elementary schools, two grades K-8 schools, five middle schools, and three high schools in total. Another high school is scheduled to open in September of 1999. The IUSD also operates one continuation high school. With year-to-year implementation of the IUSD building program, sufficient capacity is expected to exist at all levels to accommodate the anticipated enrollment district-wide growth (IUSD 1999a).

Santa Ana Unified School District (SAUSD)

Approximately 122 acres in the southwest corner of the reuse plan area are within the SAUSD. This portion of the site is characterized by agricultural fields, smaller hangars, and parking aprons. It is generally surrounded by industrial development. There are no military housing units within the jurisdiction of the SAUSD.

The SAUSD operates 33 elementary schools, eight middle schools, five high schools, and one continuation high school. All but two of the schools in the SAUSD are considered overcrowded. The district is currently engaged in a building program, primarily to provide permanent facilities for currently overcrowded elementary schools. Since 1989, the SAUSD has constructed 14 new schools and converted an existing facility to their District Headquarters (City of Tustin 1999j). Still, the district uses numerous portable classrooms and is considered over-capacity (SAUSD 1999a).

3.4.4 Libraries

The Marine Corps operated a library at MCAS Tustin for military personnel, military families, and civilian military personnel that was not open to the public. The library operated within a single room and encompassed approximately 800 square feet.

Tustin and Irvine are served by the Orange County Public Library system. The Orange County Public Library, Tustin Branch, is located at 345 East Main Street in downtown Tustin, approximately two miles north of the reuse plan area. The City of Irvine has two Orange County Public Library branches: the Irvine Heritage Regional Branch in Heritage Park at 14361 Yale Avenue (approximately one and one-half miles east of the reuse plan area) and the Irvine University Park Branch at 4512 Sandburg Way (approximately two and one-half miles south of the reuse plan area).

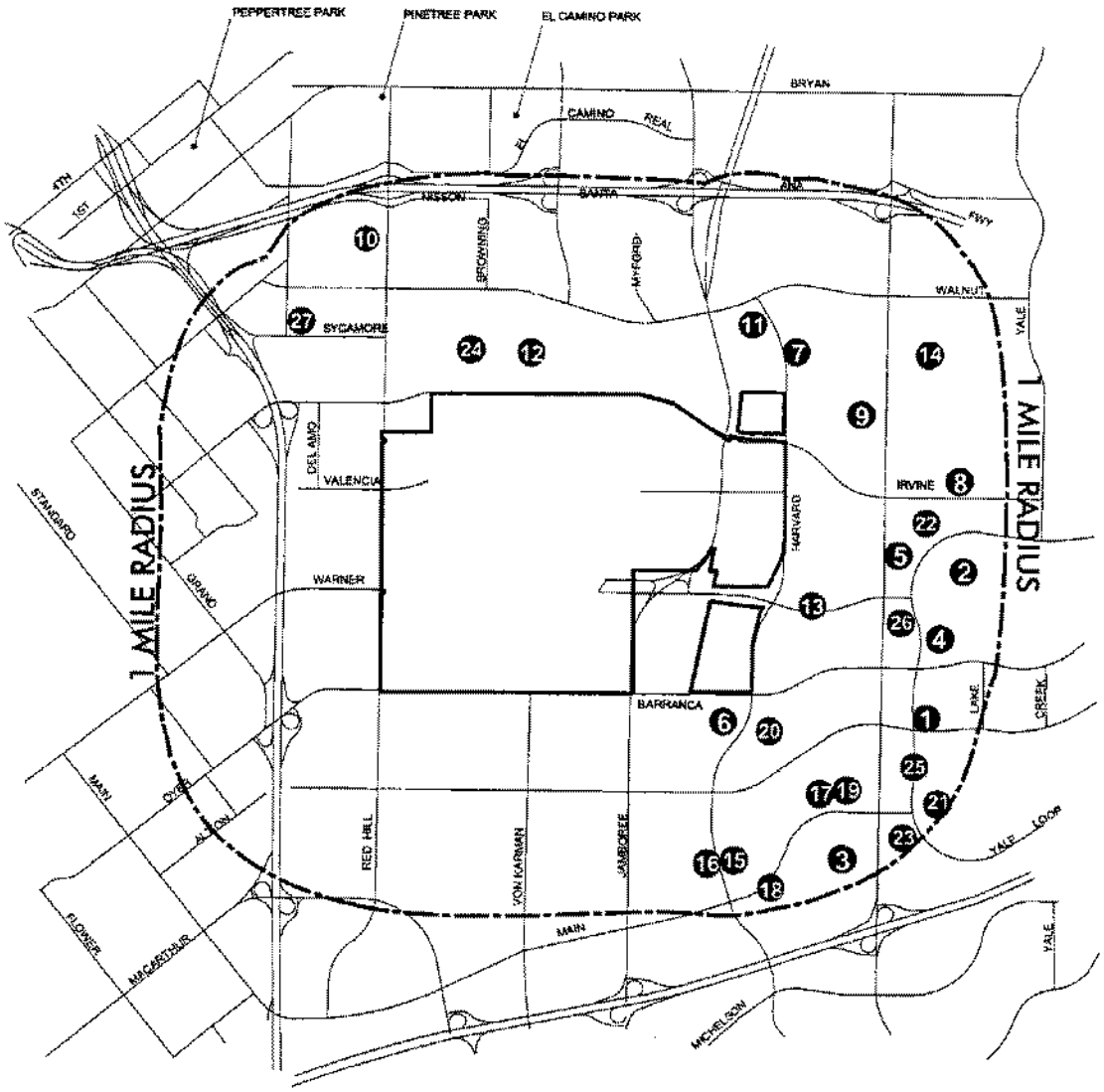
The County Library system strives to provide 0.2 square feet of library facility per person. Additionally, most local branches are planned for 10,000 square feet to maximize cost effectiveness; they are located within a three-mile radius of the communities they serve; and library sites are typically donated by developers or leased from cities.

3.4.5 Parks and Recreation

MCAS Tustin contains a variety of recreation facilities. There are no recreation facilities on the approximately four-acre privately owned parcel of land situated at the eastern extreme of the reuse plan area. Air Station facilities include:

- two baseball diamonds;
- two softball fields;
- one football field;
- one volleyball court;
- one basketball court;
- one basketball/volleyball court;
- three handball courts;
- a bowling alley (5,640 square feet);
- one outdoor swimming pool (for officers);
- three tennis courts;
- a physical fitness center (4,200 square feet); and
- picnic/barbecue areas

In addition to recreational facilities at MCAS Tustin, there are parks and recreational facilities located in the cities of Tustin, Irvine, and Santa Ana. There are more than a dozen public parks within an approximately one-mile radius of the reuse plan area. Figure 3.4-2 illustrates the parks within this one-mile radius; most of these parks are located in Irvine.



REUSE PLAN BOUNDARY

PARKS

1 ALTON ALTHLETIC PARK
2 ARROWHEAD
3 BARCELONA PARK
4 BIRDSONG PARK
5 BLUEJAY PARK
6 CIVIC CENTER PARK
7 COLLEGE PARK
8 DEERFIELD PARK
9 FLAGSTONE PARK
10 FRONTIER PARK
11 HARVARD COMMUNTITY ATHLETIC PARK
12 MAGNOLIA PARK
13 PLAZA PARK
14 NEIGHBORHOOD PARK
15 SAN CARLO PARK
16 SAN MARCO PARK
17 SAN MARINO PARK
18 SAN MATEO PARK
19 SAN PAULO PARK
20 SAN RENO PARK
21 SPRING ACRE PARK
22 STONE CREEK PARK
23 TIMBER RUN PARK
24 TUSTIN CENTENNIAL PARK
25 WINDJAMMER PARK
26 WOODPINE PARK
27 TUSTIN FAMILY AND YOUTH CENTER

Source: Thomas Bros. 1999
Base map: Austin-Foust Associates 1999

0 3000 6000 ft

Figure 3.4-2
Existing Parks and Recreational Facilities

As noted in Section 1.2.1, the City of Tustin has identified a shortfall of parkland in their jurisdiction. The 1994 General Plan utilized population figures and a standard of three acres of parks per 1,000 persons population to determine a shortfall of approximately 109 acres. Since that time, new parkland has been developed, but population has also increased. The current shortfall is approximately 107 acres (City of Tustin 1997a). The City of Irvine does not identify a shortage of parkland (City of Irvine 1995a).

3.4.6 Bikeways/Riding and Hiking Trails

Four planning agencies are involved in the planning, implementation, and maintenance of the bikeway/trail system for the reuse plan area and surrounding areas: County of Orange, City of Tustin, City of Irvine and City of Santa Ana. Each of these agencies has developed recreational bikeway and trail master plans to facilitate the movement of users from community to community.

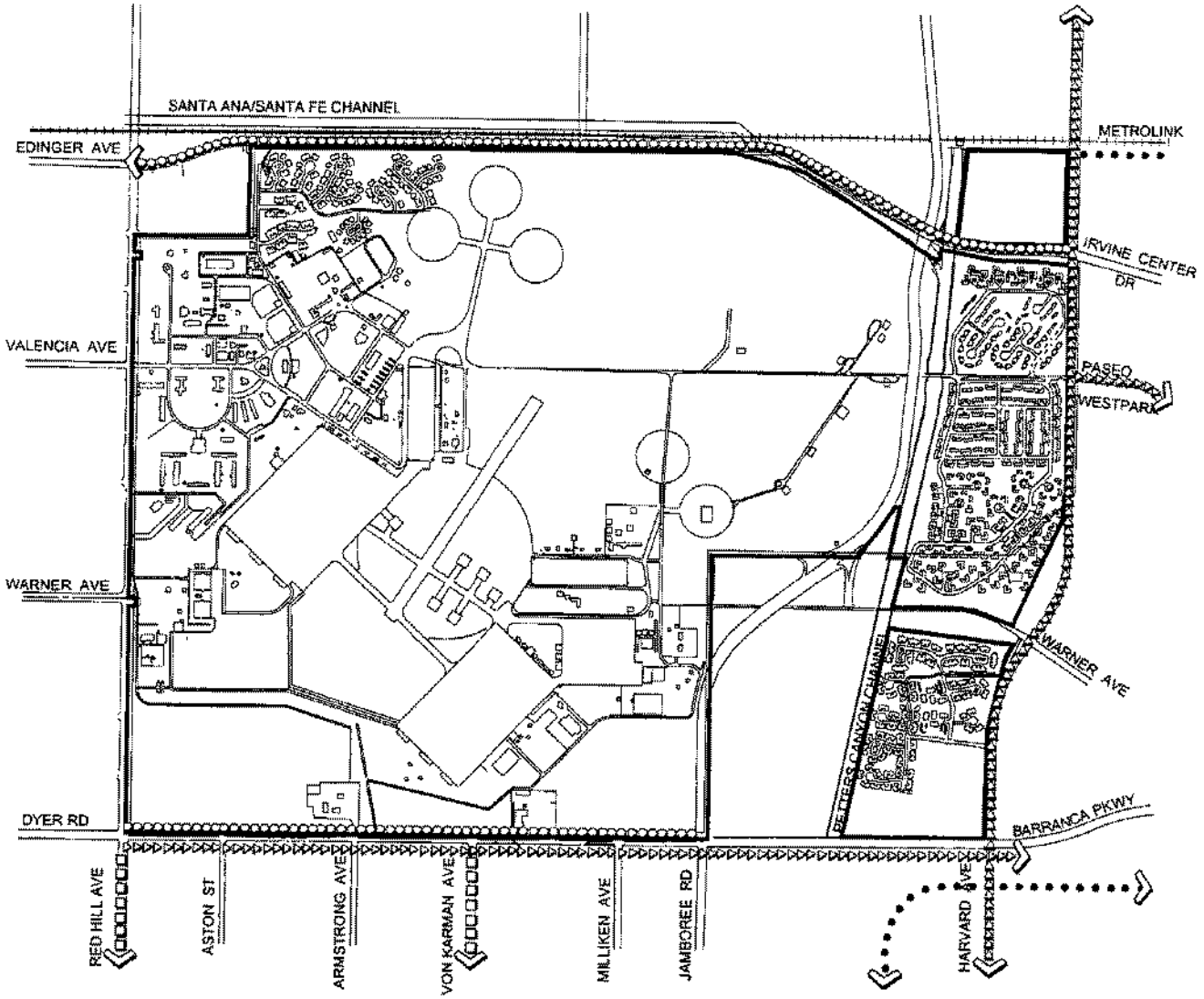
Bikeways are generally classified as follows: Class I (off-road, paved), Class II (on-road, striped lanes) and Class III (on-road, signed only). Usually a Class III bikeway is implemented only where a Class I or Class II is not feasible. Figure 3.4-3 illustrates the existing bikeways in the site and the immediate area.

For this description, the County of Orange trail planning and system is discussed first because it is regional in nature.

County of Orange

Several Orange County agencies are involved in bikeway and riding and hiking trail planning and operations. The Orange County Public Facilities and Resources Department (OCPFRD) (formerly part of the Orange County Environmental Management Agency [OCEMA]) has developed a *Master Plan of Countywide Bikeways* (MPCB) (Orange County 1995a). The MPCB proposes to complete missing segments of the existing bike routes for the regional system. This action would provide better circulation by efficiently linking bordering communities together.

OCTA, in cooperation with OCPFRD, has also developed a *Commuter Bikeways Strategic Plan* (OCTA 1995). This plan works to connect activity centers (including employment and recreation sites) within the County of Orange to promote bike use and reduce automobile travel. In the vicinity of the site, the *Commuter Bikeways Strategic Plan* proposes a Class I bikeway along Peters Canyon Channel (to be known as Peters Canyon Bikeway) and Class II and III bikeways along Red Hill



Source: *Community Facilities and Infrastructure Plan MCAS Tustin*, HNTB 1995

500 0 1000 2000 ft

Figure 3.4-3
Existing Bikeways

Avenue, Von Karman Avenue, Harvard Avenue, Tustin Ranch Road, Barranca Parkway, Warner Avenue, and Edinger Avenue/Irvine Center Drive.

Within the immediate vicinity of the site, the County of Orange currently operates the following bike routes:

Route 53 Class II bikeway along Red Hill Avenue from State Route 73 to Barranca Parkway.

Route 64 Class II bikeway along Von Karman Avenue from Campus Avenue to Barranca Parkway.

Route 60 Class I bikeway along the south side of SCRRA railroad from Harvard Avenue to Sand Canyon Avenue.

Route 58 Class I bikeway along the San Diego Creek Channel from Jeffery Road to Upper Newport Bay. This route follows the channel and turns south just west of Harvard Avenue.

The County of Orange is currently developing portions of a planned regional multi-use facility along Peters Canyon Channel. The facility will include a Class I bikeway (Route 40-Peters Canyon Bikeway) and a separate Peters Canyon Trail (a regional riding and hiking trail). This facility will ultimately connect existing bikeways and riding and hiking trails throughout central Orange County. It will extend from Anaheim Hills to Upper Newport Bay and will connect six regional parks with residential and commercial areas in Newport Beach, Irvine, Tustin, and Anaheim Hills (County of Orange 1998).

The County's recommended improvements within the immediate area of the site are described below (City of Tustin 1996b, 1998):

Route 53 Extend the Class II bikeway on Red Hill Avenue south of Barranca Parkway north to Bryan Avenue.

Route 64 Extend the Class II bikeway on Von Karman Avenue soutb of Barranca Parkway through the site with any extension of Von-Karman/Tustin Ranch Road to Walnut Avenue.

Route 40 (Peters Canyon Bikeway) Develop a regional multi-use bikeway/riding and hiking trail along Peters Canyon Channel. Grade separated bikeway and riding and hiking trail crossings would be constructed where the facility would cross arterials or rail rights-of way, where financially feasible.

Route 60 Connect to Route 40 by extending the Route 60 Class I facility adjacent to the SCRRA railroad right-of-way to Peters Canyon Channel.

Route 58 Develop a Class I trail along Barranca Parkway in coordination with the cities of Tustin and Irvine. The Class I trail would connect the trail system on Barranca Parkway with the San Diego Creek Channel trail.

City of Tustin

Within the City of Tustin, two striped Class II bikeways are located adjacent to the reuse plan area. One is located on Edinger Avenue, between Red Hill Avenue and Harvard Avenue, and the other is located along the north side of Barranca Parkway, between Red Hill Avenue and Jamboree Road. These Class II routes are included in the OCPFRD's current MPCB and provide continuity between the existing bikeway system of the cities of Tustin and Irvine.

The *Tustin General Plan* (City of Tustin 1994) proposes three Class II bikeways in the immediate project area: one facility on Valencia Avenue from Red Hill Avenue to Newport Avenue; an extension of the Edinger Avenue bikeway from Red Hill Avenue to Newport Avenue; and the Tustin Ranch Road bikeway from Walnut Avenue to Edinger Avenue. In addition, the General Plan follows the County's Master Plan of County Bikeways for a proposed Class II bike route on Red Hill Avenue and a Class I bikeway/trail on Barranca Parkway. The General Plan also proposes to remove the existing Class II bike route on Jamboree Road north of Edinger Avenue to just south of I-5.

City of Irvine

The City of Irvine's Class II bikeway system has been incorporated into future and on-going residential and commercial development projects that affect the local roadway system. Through a coordinated effort between the cities of Tustin and Irvine, a comprehensive bikeway and trail system augmenting the County's route has been developed (City of Tustin 1994a).

II trail is provided on Paseo Westpark east of Harvard Avenue. In addition, a Class II bikeway parallels the site's eastern boundary along Harvard Avenue, beginning at ~~Culver Drive~~ Barranca Parkway and continuing north to Walnut Avenue.

City of Santa Ana

The City of Santa Ana General Plan Circulation Element identifies several proposed bikeways within the vicinity of MCAS Tustin. Class II bikeways are planned along Warner Avenue and Dyer Road between Red Hill Avenue and Newport Avenue, and along Red Hill Avenue adjacent to MCAS Tustin. No bikeways current exist in the vicinity of the reuse plan area.

3.5 AESTHETICS

The visual resources analysis for the reuse plan area was completed in accordance with established objectives and methods for visual impact recommended by the Bureau of Land Management (BLM). The BLM methodology is summarized in two publications—*Visual Resource Management Program* (BLM 1980) and *Visual Resource Contrast Rating Manual 8431* (BLM 1986). The following steps were conducted for this assessment:

1. Define the visual environment and document existing landscape characteristics within the viewshed utilizing site reconnaissance, site photographs, aerial photographs, map resources, and existing literature.

2. Identify key views for the visual assessment, based upon three viewing distances: foreground, middle-ground, and background.

3. Describe major viewer groups, determine viewer sensitivity, and identify any elements (man-made or natural) that have particular scenic value.

4. Document the type and degree of visual changes expected to result in the study area to sensitive viewers, based on each proposed alternative. The degree of change is evaluated in terms of contrast with the existing environment, considering the presence or absence of scenic value.

The character of the existing visual environment within the study area is documented in this section, and the viewer groups within the viewshed limit are identified. Scenic value is inferred from various sources.

3.5.1 Viewshed and Viewscape

The "viewshed" is defined as the areas of land from which the reuse plan area may be seen. The "viewscape" includes all natural and man-made visual elements in the viewshed, including topographic characteristics (water bodies, hills, etc.), vegetation, buildings, structures, infrastructure, and signage. Visual quality, while subjective, can be determined in terms of harmony between size, shape, color, and texture of various elements within the viewshed as well as presence of regionally unique/scenic features.

Visual Characteristics of Reuse Plan Area

Description of Features

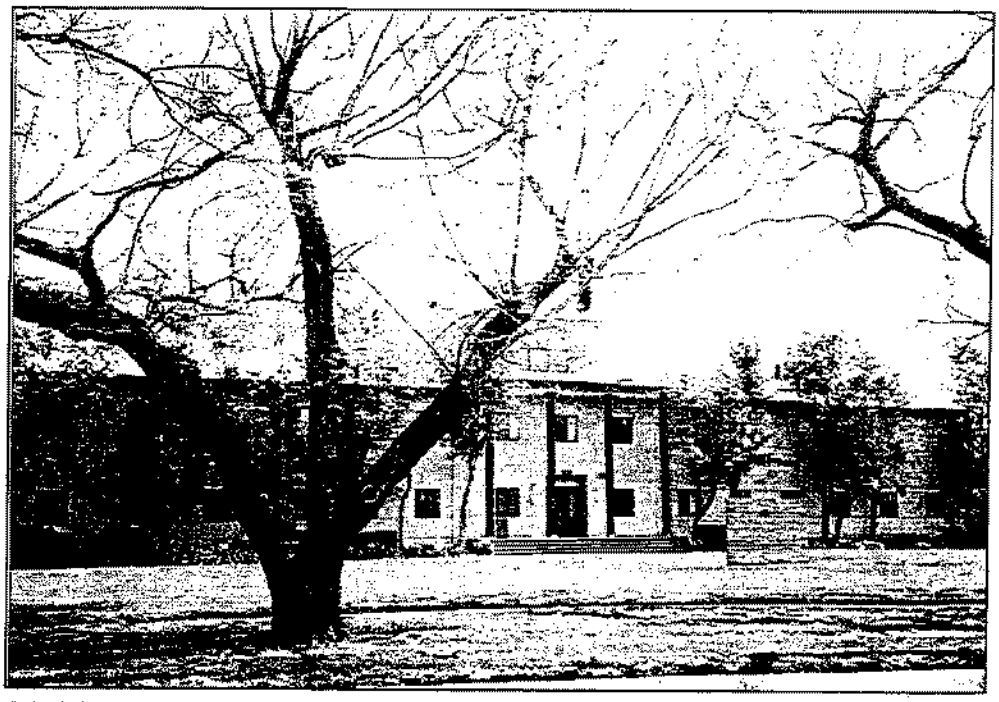
The general viewscape within the reuse plan area is one of unvaried, level terrain, punctuated by pockets of buildings and structures with greatly varying sizes, shapes, and architectural styles; large concrete areas associated with helicopter operations; open agricultural areas; and infrastructure elements, including roads, parking lots, and utility lines. Development on the site is clustered in three general areas: administration facilities and housing are located in the northerly portions; operations-related facilities are located in the central/southwest and southeast; and family housing is located in the easterly and southeasterly portions of the site.

The majority of the development occurs in the northern corner of the site. The viewscape of the area is characterized by one- and two-story, utilitarian-looking operations buildings and bachelor quarters, with an emphasis on function rather than design (Figure 3.5-1). The buildings are neutrally colored, primarily in shades of beige, and appear to be in relatively good condition. Community service buildings, such as the church, demonstrate a more detailed architectural style. The buildings are relatively spread out, separated by large lawn areas, roads, and parking areas. Numerous trees and shrubs accent the buildings and some of the streets, particularly the main entrance (Figure 3.5-1).

The family housing area in the northeast (adjacent to Edinger Avenue) consists primarily of duplexes with garages (Figure 3.5-2). The two-story brick, stucco, and wooden structures are in fair condition, with visible signs that some cosmetic repair is necessary. A series of small greenbelts leading to playground areas encircle the homes. Trees of varying sizes and types dot the area. The overall visual impression is one of a modest, family-oriented residential area.

The northern area also has recreational facilities including baseball diamonds, a lighted football/soccer field, tennis courts, and volleyball and basketball courts. There is a small picnic area with picnic benches and a playground. The open grassy areas give visual relief from the surrounding developed area.

The most visibly dominant objects in the reuse plan area are two blimp hangars, located in the central portion of the station, near the helicopter runway and parking areas. These buildings are the largest (1,088 feet long) and tallest (189 feet high) structures in the area (Figure 3.5-2). The light grey, Quonset hut-shaped, wooden structures have translucent, vertical panels that give the buildings a more linear appearance. Four large, paved aircraft parking aprons dominate the site west of the

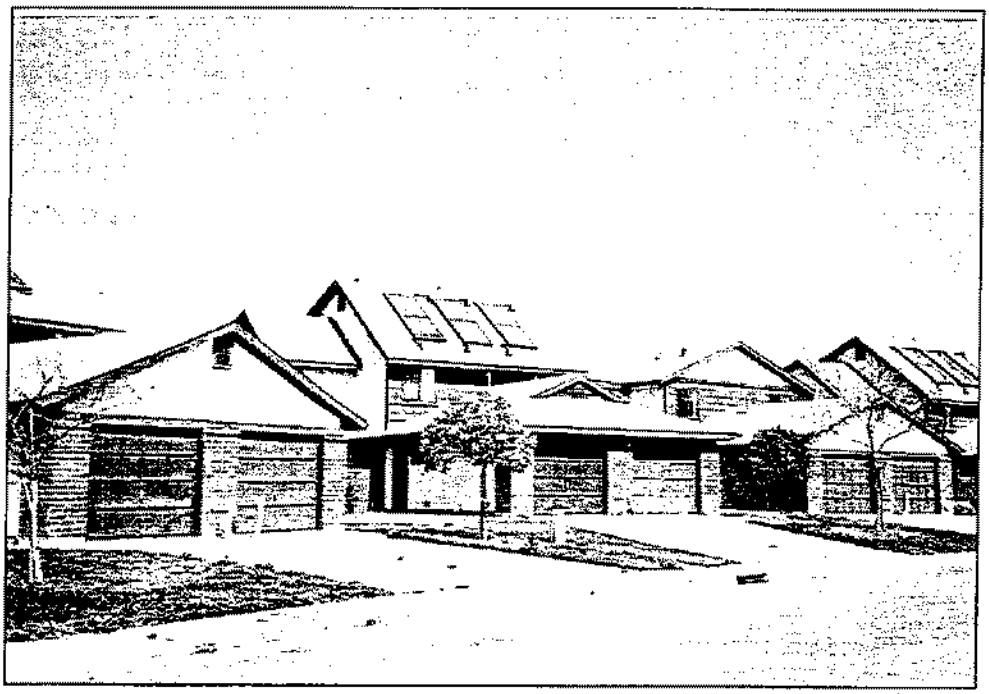


Administration Building

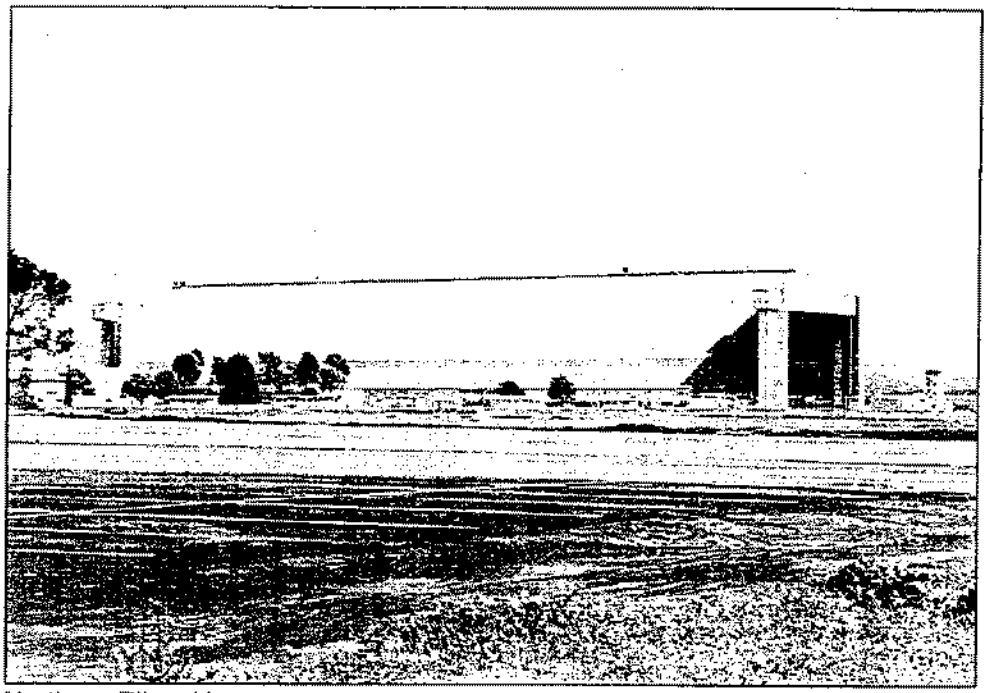


Main Entrance

Figure 3.5-1
Site Photographs



Military Family Housing



Northern Blimp Hangar

Figure 3.5-2
Site Photographs

hangars. The control tower, located to the southeast of the northern hangar, is dwarfed by the mass of the hangar. To the south of the southern hangar are a number of scattered aircraft maintenance facilities, and supply and storage buildings.

The blimp hangars are unique features and their size makes them the most visible element, by far, within the reuse plan area. In 1992, a community survey was undertaken soliciting input from Tustin residents, business owners, and residents of military housing at MCAS Tustin. The survey explicitly asked, "What is your opinion about the preservation and re-use of the blimp hangars?" Over two-thirds of respondents were in favor of preservation of at least one of the hangars (City of Tustin 1993f).

The family housing area adjacent to Harvard Avenue consists of a cluster of duplexes and multi-family units. The buildings front on a circulation system of local streets and cul-de-sacs. The duplexes are similar in appearance and structure to those found in the northern family residential area. The higher-density, multi-family units are beige buildings accented with brown trim. These units have grouped carports, and the area has manicured lawns and mature trees.

Much of the reuse plan area not utilized for Air Station-related operations is devoted to agricultural production. Row crops are grown west, east, and southeast of the airfield operations area. Agricultural land use creates an open area characterized by low-lying greenery and a general lack of buildings and structures. On-site agricultural areas provide for clear, relatively unobstructed views across the site. Existing utilities such as electricity and telephone are provided via above-ground poles, which results in some urban clutter.

Light and Glare

Light sources in the reuse plan area include street lights, building lighting for safety and security, parking lot lighting, and lighting associated with nighttime aviation operations. The lighting is concentrated in the main station area in the central portion and in the two residential areas. Agricultural areas have no lighting sources. The lighting on site is characteristic of lighting patterns in the area.

Glare is reflective light that can be visually unpleasant or possibly unsafe due to the potential for temporary "blindness." Glare is created by light (usually from the sun) reflecting off smooth surfaces such as glass, metal, or polished stone. As a military facility, the buildings and structures at MCAS Tustin were primarily designed and constructed for utility rather than aesthetics. There is generally

a lack of decorative surfaces, including those that could cause glare. The majority of the buildings have nonreflective surfaces. There are no structures on the small parcel in the reuse plan area outside the Air Station boundaries.

3.5.2 Visual Characteristics of Surrounding Area

Several land uses surround the reuse plan area, resulting in a varied viewscape. Immediately to the north, in the area bordered by Red Hill Avenue, Edinger Avenue, and the Air Station boundary, are commercial (restaurants, etc.) and light industrial buildings, and a recreational vehicle storage yard. This development provides an urbanized viewscape buildings of various sizes and the street/parking lot trees preclude potential views into the site.

The reuse plan area is bordered by Edinger Avenue to the northeast. Parallel to the roadway are the railroad tracks of SCRRA/OCTA, and also the Santa Ana-Santa Fe Channel, a concrete-lined drainage facility. Beyond the channel is a small-lot, single-family residential development. An approximately five-foot-high grey masonry wall separates the homes from the channel and railroad tracks and partially blocks views from the development. Trees, greenbelts, and pocket parks within the residential development add visual quality to the urban viewscape.

To the east of the residential development is an industrial area (northeast of the site) composed of generally larger one- and two-story buildings. Structures in this area vary in shape, scale, and architectural detail, but the structures retain an industrial character.

On the east side of Jamboree Road, to the east of the site is a grassy, undeveloped parcel; Harvard Community Athletic Park, with baseball diamonds and soccer fields; and single-family and multi-family residential development. Off-site residential development, located adjacent to Harvard Avenue, is separated from the southeastern military family housing area and Harvard Avenue by a landscaped setback, with a meandering walkway and lawn, shrubs, and trees. A decorative masonry wall, approximately five feet high, separates the homes from the greenbelt and partially blocks views from the houses. The overall appearance of this setback and residential development is positive.

The area between Jamboree Road and the Peters Canyon Channel is an industrial area with smaller buildings and outdoor storage yards for vehicles and equipment. This area has a less cohesive appearance than the newer planned residential, commercial, and industrial development to the southeast and southwest. Southeast of this industrial area are portions of the Irvine Business Center and Civic Center Park.

Commercial and industrial buildings exist to the west, southwest, and northwest of the site. Large retail, office, and light industrial buildings and smaller, primarily retail buildings (stores and restaurants) line Barranca Parkway and Red Hill Avenue. A primarily commercial area lies to the northwest of the reuse plan area.

3.5.3 Key Views from Varying Distances

Available views onto a site are affected by distance, viewing angle, and the number and type of visual obstacles, both natural and man-made. Views can be from stationary sources, such as homes or businesses, or from mobile sources, predominantly from motor vehicles. The visibility of an object depends, to a great extent, on the distance from the observer—the further the building is from the viewer, the less distinct the building becomes, and there is a greater possibility of intervening objects blocking some or all of the view of that building. With distance, more objects enter into the viewing panorama and specific features become visually "lost."

For this analysis, viewing distances have been characterized as foreground views (0.25 mile or less), middle-ground views (0.25 mile to 3 miles), and background views (more than 3 miles).

Foreground Views

Foreground views are available from most areas immediately surrounding the site due to the general lack of topographic relief, the relative size of the site (approximately 1,606 acres), and, in most areas, the absence of intervening features that could block views. An unobstructed view is possible at certain locations from all surrounding streets and from most buildings that are immediately adjacent to the site.

Partial views into the site are possible from motorists and pedestrians on Edinger Avenue, from Amtrak passengers on the railroad, and from the southwest-facing windows of residences that line the northeast side of the Peters Canyon Channel. A wall along the perimeter of the adjacent residential area and a wall surrounding the northeastern military family housing area near Edinger Avenue partially obscures the view into these portions of the site.

To the southeast of the housing area, views are unobstructed due to the lack of vertical elements in the agricultural area: there are no buildings and only low-lying row crops. Due to their great relative size, the two hangars dominate the view, although numerous other buildings can also be seen.

Views onto the site are also possible from the east and southeast from area roadways (Jamboree Road and Harvard Avenue), and residential areas. Views are generally available of the southeastern housing area along Harvard Avenue and the upper portions of the hangars; most other views are blocked by intervening buildings and structures. The exception is views from Jamboree Road. This roadway travels through a portion of the site and sections are elevated over Warner Avenue and Moffett Drive. The elevated position affords a clear view of the reuse plan area.

The commercial/industrial areas and Barranca Parkway to the southwest have views onto the reuse plan area that are generally not blocked by structures or vegetation due to on-site open areas, agricultural fields, and aircraft parking aprons. Again, the dominant visual element is the hangars. Views onto the site from businesses along Red Hill Avenue are also possible. Views onto the site in the northwest are partially blocked by vegetation along the street.

Military aircraft operating in 1993 could be seen from almost all foreground areas.

Middle-ground Views

Due to the relatively level terrain of MCAS Tustin and the surrounding area, and also due to the highly developed condition of the surrounding area, there is very little viewing potential from middle-ground areas. Practically all of the buildings or structures on the site are blocked from view by intervening buildings, walls, and vegetation. Only the upper portions of the hangars can be seen from certain viewing angles. Motorists on I-5 and I-405 have temporary, peripheral views of the hangars. The hangars are visible from SR-55, although there are numerous intervening buildings and trees which reduce the view to intermittent at best. Very clear views, however, are available from the ETC and Jamboree Road and Jamboree Road from I-5 toward the site where the road is elevated for portions of its distance.

Aircraft departing and arriving at MCAS Tustin in 1993 were visible from practically all middle ground areas.

Background Views

There are essentially no views of the site except for the hangars from areas greater than three miles away. The area is flat, with no viewing opportunities onto the site. Military aircraft operating in 1993 could be seen from arrival and departure corridors in this area from flatter areas to the west, east, and south. Due to their height and large mass and the fact that they are surrounded by generally

level areas or relatively low profile structures, the two hangars are visible from elevated areas to the northeast. Southbound motorists on both the western and eastern legs of the ETC have background views of the hangars.

3.5.4 Viewer Groups/Sensitivity

Visual sensitivity is dependent upon viewer attitudes, the types of activities in which people are engaged when viewing the site, and the distance from which the site will be seen. Overall, higher degrees of visual sensitivity are correlated with areas where people live, are engaged in recreational outdoor pursuits, or participate in scenic or pleasure driving. Conversely, visual sensitivity is considered low to moderate in industrial or commercial areas where the scenic quality of the environment does not affect the value of the activity.

There are a number of viewing opportunities onto the site from the surrounding area. These opportunities are available from area roadways and from immediately adjacent industrial, commercial, and residential developments. The local streets from which views onto the site are possible are Edinger Avenue, Jamboree Road, Harvard Avenue, Barranca Parkway, and Red Hill Avenue. Views of the hangars are possible from I-405 and I-5. These views are peripheral and of short duration due to travel speeds. Although SR-55 is closer to the reuse plan area than the other freeways, views of the hangars are peripheral due to the viewing angle and intermittent due to intervening buildings and trees. Motorists on the ETC (SR-261) would have clear views for about one mile because of their elevated position.

The area around the reuse plan area is a predominantly urbanized area with no designated scenic roadways. Additionally, viewer expectations along local roadways and the freeways are low due to the general industrial and commercial character to the west, south, and northeast. Viewer sensitivity by motorists is considered low.

Most of the workers in the surrounding commercial and industrial developments do not have distinct viewing opportunities due to a minimum of windows, and intervening structures and traffic. Employees are not considered to be sensitive viewers because of the nature of their working environment.

Some views onto the site are possible from immediately adjacent single-family residential neighborboods. There are partial views from the backyards and southwest-facing windows of most of the houses that line the channel/railroad tracks to the northeast. Ground level views are obstructed

by noise barriers that border both the residential development and MCAS Tustin. However, clear views from second-story, back windows are possible. These views are primarily of the northeastern military family housing along Edinger Avenue and the hangars.

Views are also possible from the backs of some single-family and multi-family homes that line Harvard Avenue. These views, partially to fully blocked from the first floor by a noise wall that surrounds the development, are of the southeastern military family housing located between Jamboree Road and Harvard Avenue. The tops of the hangars can also be seen. Viewer sensitivity from residential areas such as those adjacent to the site is considered high.

Viewer sensitivity from recreational areas is also considered high. There are two recreation facilities in the City of Irvine in the vicinity of reuse plan area; the Harvard Community Athletic Park to the east and Civic Center Park to the south. Views from the Athletic Park are severely restricted by landscaping at the edge of the park area and the commercial/industrial development northwest of Jamboree Road and northeast of Edinger Avenue blocks views to the main portion of the site. ~~No~~ Views of the south hangar are possible from the Civic Center Park. ~~due to intervening industrial development.~~

3.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

3.6.1 Summary of Investigations

A total of six archaeological surveys have been conducted in the reuse plan area, resulting in the recording of one archaeological site. The first survey was completed in 1971 by Pacific Coast Archaeological Society (PCAS) and covered roughly half of the area encompassed by the Air Station (United States Army Corps of Engineers [USACOE] 1972). In 1979, a second survey was conducted by Theo Mabry of Archaeological Planning Collaborative (U.S. Marine Corps 1979). This survey covered 110 acres in the northeast corner of the Air Station. Approximately 45 acres along the northern boundary of the Air Station was surveyed in 1983 by Marie Cottrell (U.S. Marine Corps 1983). In 1984, Cottrell surveyed a 40-acre parcel just south of the parcel surveyed the previous year (U.S. Marine Corps 1984). Later, in 1988, John Murray of the USACOE produced an archaeological resources assessment summarizing all of the surveys to that date (USACOE 1988). In 1990, two surveys were conducted by Ronald Bissell including a 16-acre parcel along the northern boundary of the Air Station and a 40-acre parcel in the eastern corner of the Air Station (U.S. Marine Corps 1990a, 1990b).

The historical resources in the reuse plan area were initially studied by the Marine Corps in 1974 when two blimp hangars on the Air Station were recommended eligible for inclusion in the National Register of Historic Places (NRHP or National Register). In 1993, these blimp hangars were studied again by Thirtieth Street Architects as part of a Historic Resources Survey that examined all of the World War II structures on the Air Station (City of Tustin 1993e). In 1994, HNTB, Leighton and Associates prepared a Historic Blimp Hangars Analysis which examined the hangars in more detail. The most recent study on the historical resources on the Air Station occurred in 1998. This study included a condition assessment and economic analysis which discussed the feasibility of reuse of the hangars (U.S. Marine Corps 1998).

A literature review and records search for paleontological resources was undertaken by John Minch and Associates in 1993 (City of Tustin 1993q).

3.6.2 Cultural Environment

The following paragraphs summarize the prehistory and history of the reuse plan area.

Prehistory

The prehistory of the region has been summarized within four major horizons or cultural periods: Early, Millingstone, Intermediate, and Late Prehistoric (Wallace 1955, Warren 1968). Near the coast, the oldest Early period sites date back to at least 9,000 years before present (BP). Tool kits from this period include a variety of stone implements used in processing animal resources. The next cultural period, the Millingstone Horizon, started between 7,000 and 5,000 BP and continued until approximately 3,000 BP. Artifacts from this time period include seed processing equipment, as well as cutting and scraping tools. During the Intermediate or Middle period (circa 3,000 to 1,500 BP) changes occurred that are believed indicative of exploitation of a broader economic base, which relied on hunting and marine resources in addition to plants. An expanded inventory of milling equipment is found at sites dated to this period. The Late Prehistoric, the last archaeological cultural period, began around 1,500 BP and lasted until Spanish contact in 1769. Artifacts from this period include milling implements, as well as bone and shell tools and ornaments.

Ethnohistory

The reuse plan area is located in a region traditionally occupied by the Gabrielino Indians. Prior to European colonization, the Gabrielino occupied a diverse area that included the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; the Los Angeles basin; and the islands of San Clemente, San Nicolas, and Santa Catalina. Beginning with the Mission Period, Native Americans suffered severe depopulation and their traditional culture was radically altered. Nonetheless, Gabrielino descendants still reside in the greater Long Beach area and maintain an active interest in their heritage resources.

History

Although much of the land in the vicinity of the reuse plan area has been used for agriculture throughout much of the 19th and early 20th centuries, all known historic period cultural resources in the reuse plan area are related to military use of the facility. MCAS Tustin was initially commissioned by the U.S. Navy on September 1, 1942, when Holmes and Narver, Consulting Engineers of Los Angeles, were retained to design the Santa Ana lighter-than-air Base. Its original purpose was to support helium-filled airships and personnel conducting anti-submarine patrols off the coast of southern California. This base was part of a network of ten LTA stations commissioned across the coastal lands of the United States. The first phase of development of the LTA base took place between 1942 and 1943 and involved the construction of two blimp hangars (Buildings 28 and

29). The design created by Arsham Amirikian, Principal Engineer of the U.S. Bureau of Yards and Docks, was used for 16 hangars around the nation as well as the two blimp hangars at MCAS Tustin (City of Tustin 1994b). Due to shortages brought on by World War II, the structures were entirely wood-framed, using Oregon douglas fir. Several structures and utilities, which supported the base operations, were built at the same time as the hangars (1942-1943).

By 1944, the need for blimp patrols dwindled and most of the newly constructed structures functioned primarily as warehouses and storage buildings. The blimps continued to use the LTA base in a diminished capacity until 1949, when the facility was officially decommissioned and was designated for use by other military units in the area. On May 1, 1951, the site was recommissioned as a Marine Corps Air Facility in preparation for U.S. involvement in the Korean War. At that time, it was devoted entirely to helicopter use (City of Tustin 1993a).

The Air Facility continued to be used for helicopter-related activities. On September 1, 1969 it was redesignated Marine Corps Air Station (Helicopter), Santa Ana. On April 23, 1976, after annexation to the City of Tustin, it became the Marine Corps Air Station (Helicopter), Tustin. Finally, it was administratively redesignated as Marine Corps Air Station Tustin on June 1, 1985 (City of Tustin 1993e). Over the years, the Air Station continued to expand, including over 200 structures, until 1991 when it was targeted for closure.

3.6.3 Previous Cultural and Paleontological Resource Investigations

Cultural Resources

Archaeological Resources

A total of six archaeological surveys have been conducted in the reuse plan area. The first of these surveys was conducted by the PCAS in 1971 (USACOE 1972). This survey covered roughly half of the area encompassed by the Air Station. The remaining areas were either restricted entry or were previously disturbed by construction of buildings. One of the purposes of the PCAS survey was to locate an archaeological site that was reported to exist in the area near the main entrance of the Air Station.

This site was originally located by Mr. George Padias, a local farmer, between 1930 and 1932. In 1966, he brought the site to the attention of Paul Chace, then Museum Technician for the Bowers Museum in Santa Ana. He reportedly told Chace that the site was "about 100 or 200 yards east of Red Hill Boulevard inside the base fence; and about 0.0125 of a mile south of the main entrance to the base on Red Hill

Boulevard" (U.S. Marine Corps 1966). The site was described as extending across approximately two acres and containing shell. Padias recovered a double-grooved arrowshaft straightener, a mortar, and a metate from the site and loaned the artifacts to the Bowers Museum (U.S. Marine Corps 1993). It is not clear where these artifacts are today. Field crews from the 1971 survey examined the area Padias had described and found no archaeological remains. They concluded that construction of two large concrete tanks had destroyed the area and any possible sites along with it. They completed a site form based entirely on the recollections of Paul Chace and the site was designated CA-ORA-381.

In addition to site CA-ORA-381, the survey crew also noted marine shell (*Pecten*, *Chione*, and *Haliotis*) in the northernmost corner of the Air Station and extending off the Air Station into an orange grove. No lithic material or other artifacts were noted. In keeping with the archaeological standards of the times, they did not record the shell scatter but did recommend trenching in the area. This trenching does not appear to have been done. Small amounts (one or two pieces) of shell were also noted in five other areas of the Air Station. These included open spaces located in the northern and southern portion of the Air Station. These were also not recorded.

The next survey of the Air Station occurred in 1979 (U.S. Marine Corps 1979). It was accomplished by Theo Mabry of Archaeological Planning Collaborative and involved a survey of 110 acres in the northeast corner of the Air Station. No archaeological resources were found.

A survey in 1983 involved examining a 45-acre parcel along the northern boundary of the Air Station as well as two parcels, at that time, outside the boundaries of the Air Station (U.S. Marine Corps 1983). This parcel had most likely been surveyed in 1972, but there were no survey maps in the Sperry report and the survey methods were not described. In 1984, Cottrell surveyed another 40 acres immediately to the southeast of the 1983 survey (U.S. Marine Corps 1984). No archaeological resources were found on either survey by Cottrell.

In 1988, John Murray (Staff Archaeologist, USACOE, Los Angeles District) conducted an archaeological resources assessment that included examination of the three surveys accomplished to that date. It also included a record search of the area within a 0.5 mile perimeter of the Air Station. Based on these studies, Murray stated that all open spaces on MCAS Tustin had been previously surveyed for archaeological resources. Kathryn Gualtieri from the SHPO reviewed Murray's document and concurred with his finding, stating that the previous surveys had been adequate (SHPO 1988).

In 1990, a 16-acre parcel along the northern boundary of the Air Station (in section 46) and a 40-acre parcel in the eastern corner of the Air Station were surveyed (U.S. Marine Corps 1990a, 1990b). It is not clear whether the survey of the 40-acre parcel included the four acres of privately owned land that are included in the current reuse plan. They found no artifacts but recommended that the areas be monitored during construction, as the potential still existed for buried resources. In addition, the remains of three radio towers and a small building were present in the 40-acre parcel. Bissell did not consider these remains significant, and more recent aerial pbotographs confirm that these features have since been removed.

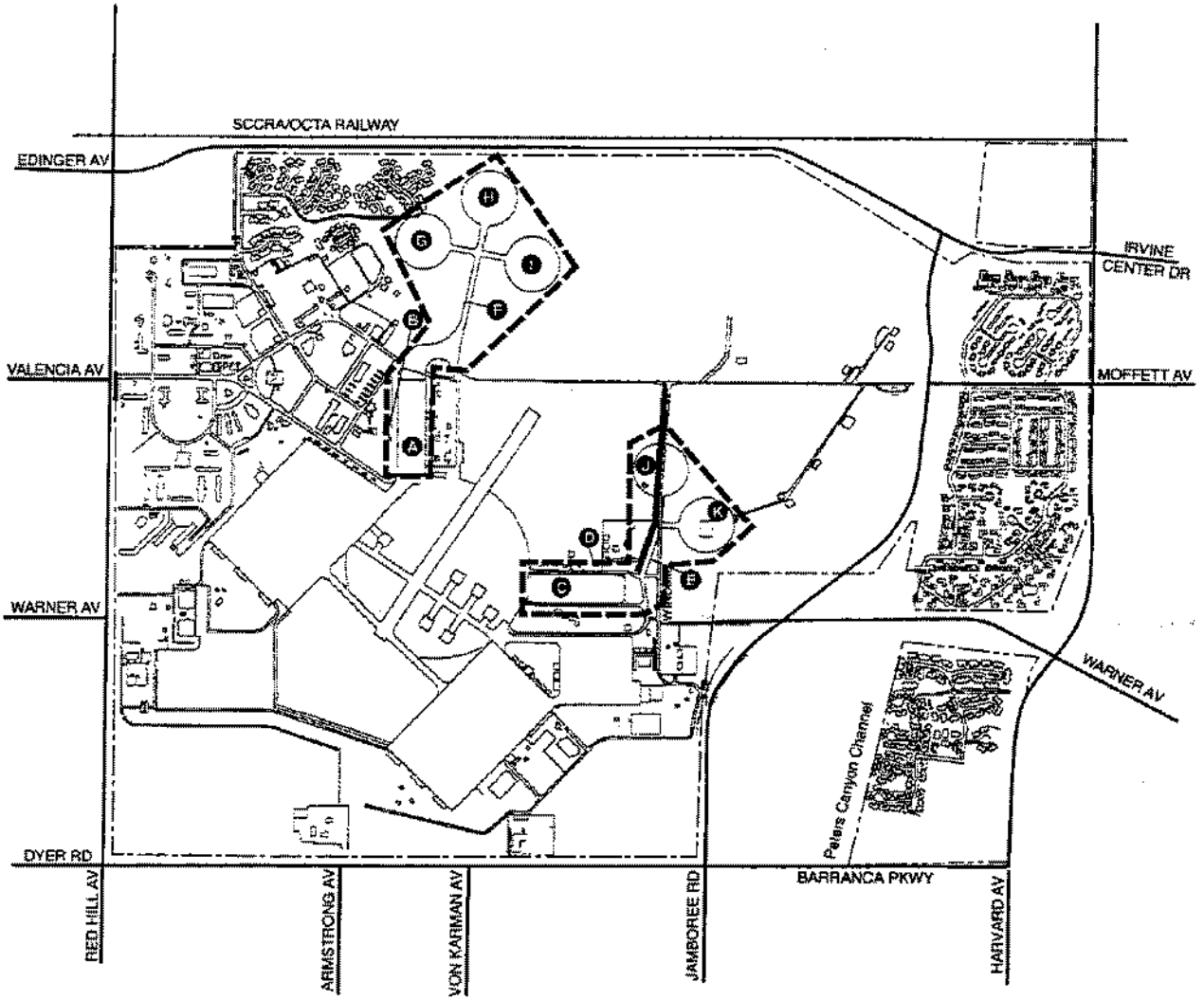
In summary, one archaeological site (CA-ORA-381) has been recorded within the Air Station, but it is believed to have been destroyed. Shell scatters, potentially indicating prehistoric human activities, have also been noted. No other archaeological resources are known to occur at the Air Station.

Historical Resources

Two blimp hangars, constructed in 1942 and 1943, stand on MCAS Tustin. These hangars were nominated to the National Register of Historic Places by the Marine Corps in October 1974 due to their historical association with World War II. In April 1975, they were listed as being historically significant and were entered into the National Register. Along with several ancillary buildings, discussed below, these bangars form two discontiguous historic districts eligible for the inclusion in the National Register.

A Historic Resources Survey of MCAS Tustin, conducted by Thirtieth Street Architects in February 1993, determined that there are several other World War II-era structures on MCAS Tustin. The same study concluded that most of these structures bad been altered from their original appearance and would not contribute to a historic district. However, the study did identify several buildings and structures that were related to the blimp hangars and they recommended including them in a historic district. These include two helium tank buildings (28A and 29A), blimp Mooring Mats 1-5, a connecting road to mats 1-3, and a connecting road to mats 4 and 5. No Cold War-era structures were examined for this study.

Based upon the recommendations of Thirtieth Street Architects, the Marine Corps bas made a determination that the following structures and features constitute two discontiguous portions of an eligible historic district for designation on the National Register (Figure 3.6-1). A letter from SHPO, dated June 28, 1996, concurred with the Marine Corps determination of eligibility.



———	REUSE PLAN BOUNDARY
▬▬▬	DISCONTIGUOUS HISTORIC DISTRICT
A	HANGAR #1 (BUILDING #28)
B	HELIUM TANK BUILDING (BUILDING #28A)
C	HANGAR #2 (BUILDING #29)
D	HELIUM TANK BUILDING (BUILDING #29A)
E	CONNECTION ROAD FOR MOORING MATS #4-#6
F	CONNECTION ROAD FOR MOORING MATS #1-#3
G	MOORING MAT #1
H	MOORING MAT #2
I	MOORING MAT #3
J	MOORING MAT #4
K	MOORING MAT #5
L	MOORING MAT #6 (PREVIOUSLY DEMOLISHED)



Figure 3.6-1
Discontiguous Historic District

The discontiguous eligible district is composed of the following elements:

Element A - Blimp Hangar 1 (Building #28), Helium Tank Building (Building #28A), Mooring Mats 1, 2 and 3, Connecting roads between the Hangar and Mooring Mats.

Element B - Blimp Hangar 2 (Building #29), Helium Tank Building (Building #29A), Mooring Mats 4 and 5, Connecting roads between the Hangar and Mooring mats.

All of these elements were constructed in 1942, except Blimp Hangar 2, which was built in 1943 (City of Tustin 1993e). All of the ancillary features are located in the vicinity of the blimp hangars, which are in the central portion of the Air Station.

Paleontological Resources

Paleontological resources (i.e., fossils) are the remains and/or traces of prehistoric plant and animal life, exclusive of man. They represent a limited, non-renewable, and sensitive scientific and educational resource. Fossil remains such as bones, teeth, shell, leaves and wood are found in the geologic deposits (rock formations) within which they were originally buried. Because of the direct relationship between fossils and the geologic formations within which they are entombed, knowing the geology of an area and the fossil productivity of particular rock formations enables one to reasonably predict where fossils will (or will not) be encountered.

Many fossil sites currently on record have been discovered only during construction projects. The close correlation between fossil sites and construction is due to surface weathering, which quickly destroys most fossil materials, and vegetation cover, which obscures fossil bearing bedrock exposures. Thus it is often not until fresh, unweathered exposures are created by grading that well-preserved fossils can be recovered.

Previous archaeological surveys of MCAS Tustin, geotechnical log borings from drilling efforts for local wells, and record searches reveal evidence of paleontological resources in MCAS Tustin (City of Tustin 1993q). Formations from the Pleistocene (2 million years ago to 10,000 years ago) and Recent (10,000 years ago to present) period are identified as having moderate to high sensitivity for paleontological resources. On site these sediments occur between the site surface and 280 feet in depth (City of Tustin 1993q). These formations correlate to the 30 feet of Holocene alluvium and 250 feet of older alluvium described in Section 3.9 (Soils and Geology). The fossil-bearing formations underlie virtually all of the site.

3.7 BIOLOGICAL RESOURCES

Biological resources include plant and animal species and the habitats or communities within which they occur. This section is divided into discussions of vegetation on site; wetlands; known wildlife species; and known sensitive, threatened, and endangered species.

Several biological surveys have been completed at the Air Station. A review of available literature and a field survey was completed in March 1993 to determine vegetation types, provide a general census of plants and animals (City of Tustin 1993b). This was followed by focused surveys for sensitive species in April and June 1993 and January 1994 (City of Tustin 1993o, 1994f). Even more recent surveys include focused surveys for the burrowing owl (DON 1998c), the southwestern pond turtle (City of Tustin 1999h), and a wetlands delineation (DON 1999b and DON 1999f). Appendix G contains copies of these reports.

3.7.1 Vegetation

Vegetation in the reuse plan area can generally be categorized as cultivated fields or non-native grassland. There are only individual remnants of native plant species. The agricultural fields on the Air Station are regularly cultivated with row crops. The level of soil disturbance is such that only the most ruderal plant species would be expected. Non-native grassland habitat is dominated by annual grasses that are primarily Mediterranean in origin. These grasses typically dominate areas that have been previously disturbed by grading, routine mowing, and past agricultural activities. In addition, ornamental landscaping consisting of lawns/turf, trees, shrubs, and various exotic and non-native plants is scattered throughout the site.

Agricultural and historic military uses have resulted in clearing of the native vegetation. Due to continuing activities, the existing cultivated fields and landscaped areas do not provide suitable habitat for rare or sensitive plant species known from the region. Rare and sensitive plant species which are known to occur in the vicinity of the Air Station include Catalina mariposa lily (*Calochortus catalinae*), turkish rugging (*Chorizanthe staticoides* spp. *chrysacantha*), and many-stemmed dudleya (*Dudleya multicaulis*). No such rare or sensitive plant species were identified during surveys of the Air Station (City of Tustin 1993b, 1993o, 1994f).

Plant species detected at the Air Station are inventoried in the previous studies. All species detected, whether native or non-native, were included in the inventory. Agricultural crops and ornamental plants were considered wildlife habitat, but were excluded from the inventory. Instead, the surveys concentrated on areas with remnants of native vegetation. These were primary disturbed wetland

channels containing black willow (*Salix goodingii)*, mulefat (*Baccharis salicifolia*), cattail (*Typha* sp.), and bulrush (*Scirpus* sp.) plants. Native plants typical of the coastal sage scrub plant community were absent, except for species tolerant of disturbed conditions, including tarragon (*Artemisia dracunculus*), nightshade (*Solanum douglasii*), and morning glory (*Calystegia macrostegia*). The remaining species were indicative of ruderal (weedy) conditions, or were associated with landscaping or agriculture. Of the 90 plant species identified, 70 species (78 percent) were non-native weeds or ornamental plants, including crystalline iceplant (*Mesembryanthemum crystallinum*), foxtail fescue (*Vulpia myuros*), Australian saltbush (*Atriplex semibaccata*), bristly ox-tongue (*Picris echiodes*), and mustard (*brassica* sp.).

Much of the land surrounding the reuse plan area has been developed with industrial complexes and business parks. These urban developments provide minimal habitat value and support a low diversity or abundance of wildlife. Agricultural fields with relatively little human disturbance, water sources, and landscaping in the reuse plan area give the on-site habitat a higher value relative to the surrounding areas.

3.7.2 Wetlands

The reuse plan area is situated in the Tustin Plain, which is underlain by the Irvine groundwater basin (a subbasin of the Los Angeles groundwater basin). The site is situated on historic marshland which was filled over 60 years ago for cultivation.

The Peters Canyon Channel, an unlined drainage channel, traverses or parallels the site from Edinger Avenue to Barranca Avenue. Other smaller drainage ditches also exist on-site. These earthen drainages support cattail and other common marsh plants, as well as the riparian species identified previously. The water source appears to be urban and agricultural runoff from both on-site and off-site sources. The narrow, linear channels seem to experience regular disturbance by scouring during storm events (City of Tustin 1993b).

Natural bottom flood channels are unvegetated or sparsely vegetated drainages. These areas are generally considered "waters of the U.S." by the USACOE. The USACOE exerts jurisdiction over "waters of the U.S.," which include territorial seas, tidal waters, and non-tidal waters. The USACOE also has jurisdiction over wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernable banks and high water marks.

In 1996, the USACOE inspected the site and determined that drainages identified as 5 South and 5 North on the MCAS Tustin installation and restoration maps were subject to their jurisdiction under Section 404 on the Clean Water Act (USACOE 1996). Previous surveys indicated that these

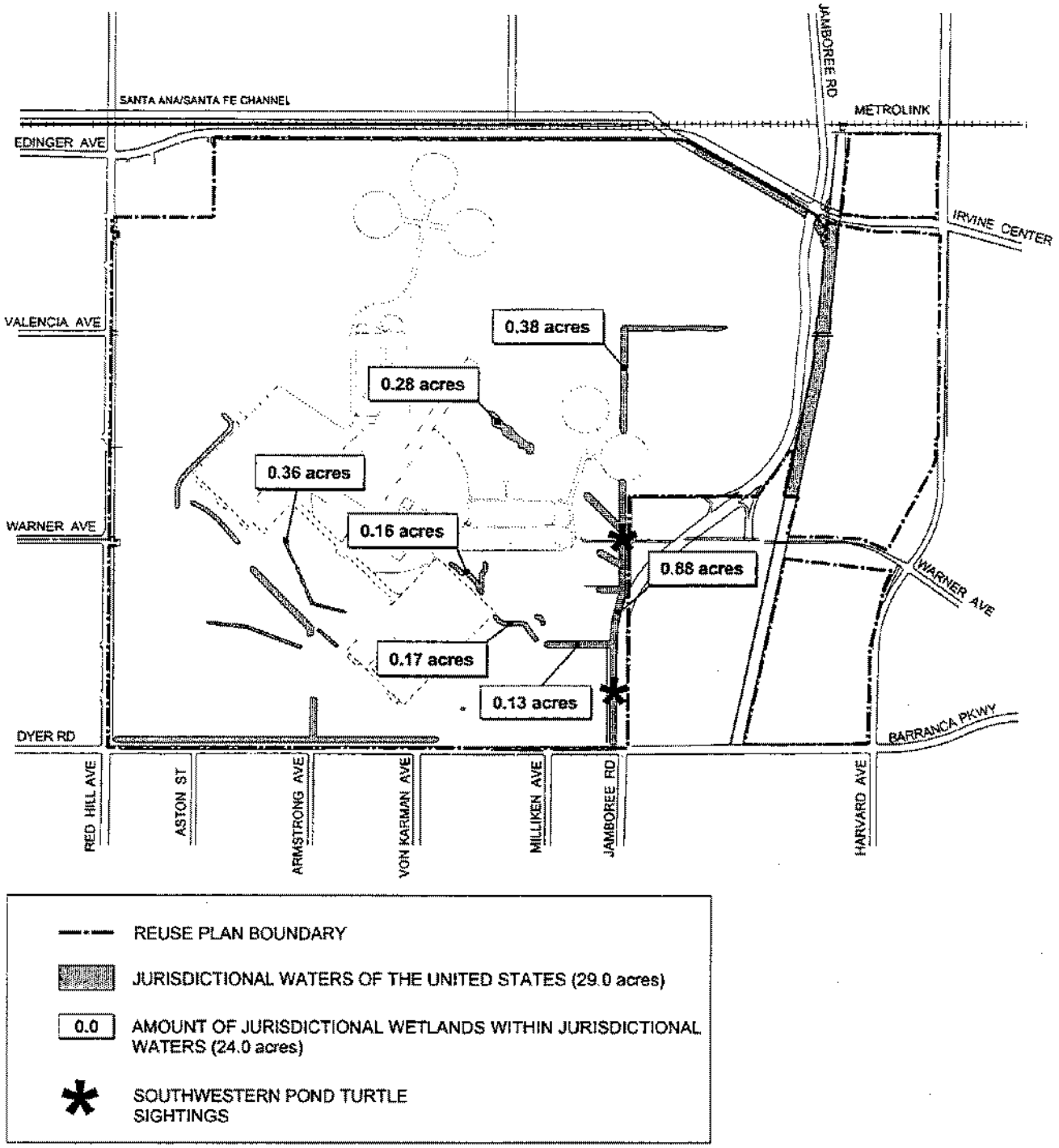
drainages, plus Peters Canyon Channel, and other unnamed channels may qualify as jurisdictional wetlands (City of Tustin 1993b).

In 1999, a wetlands determination was completed to verify the extent and quality of wetland habitat and to provide sufficiently detailed and accurate jurisdictional delineations to support the permit process and mitigation planning (DON 1999b). The 1999 delineation re-evaluated the two drainages previously identified by the USACOE in addition to ~~nine~~ numerous other drainages. Field surveys occurred in February, ~~and~~ April, June and August 1999 and aerial photographs from 1928, 1938, 1953, 1974 and early 1990s were reviewed. Additionally, a joint field visit was undertaken with USACOE staff in June 1999. Of the ~~11~~ 15 locations surveyed, ~~eight~~ 14 were determined to be jurisdictional waters of the U.S. Within those jurisdictional waters, ~~a smaller~~ seven areas ~~was~~ were determined to be ~~vegetated wetlands/seasonal~~ jurisdictional wetlands. Peters Canyon Channel (bank to bank) had previously been acknowledged as jurisdictional waters. Wetland vegetation in Peters Canyon Channel has the potential to exist, and it has been present in the past as indicated in aerial photographs. However, the channel is regularly cleared of vegetation by the OCFCD as part of routine maintenance and in June 1999 there was no wetland vegetation in the channel. The reuse plan area contains an estimated total of ~~32.7~~ 29.0 acres of jurisdictional waters within which ~~3.65~~ 2.4 acres are considered ~~vegetated~~ jurisdictional wetlands ~~defined as existing wetlands or seasonal wetlands~~ (DON 1999~~eb, 1999f~~). Figure 3.7-1 illustrates the location of jurisdictional waters of the U.S. and wetlands and Table 3.7-1 summarizes the amount of jurisdictional waters and ~~vegetated~~ wetlands by category.

~~**Table 3.7-1**~~
~~**Summary of Jurisdictional Waters and Wetlands**~~

~~Category~~	~~Acres~~
~~**Jurisdictional Waters of the U.S.**~~	
~~Peters Canyon Channel Complex[a]~~	~~16.5~~
~~Other Discontiguous Channels~~	~~16.2~~
~~**Total Jurisdictional Waters of the U.S.**~~	~~32.7~~
~~**Wetlands Within Jurisdictional Waters of the U.S.**~~	
~~Seasonal Wetlands~~	~~0.15~~
~~Existing Vegetated Wetlands~~	~~3.5~~
~~**Total Wetlands**~~	~~3.65~~
~~Existing Vegetated Wetlands~~	~~3.5~~
~~Existing Vegetated Wetlands~~	~~3.5~~

~~[a] Complex consists of Peters Canyon Channel from Edinger Avenue south to project boundary and an unnamed tributary parallel to Edinger Avenue.~~



Source: DON 1999b
Tierra Madre Consultants 1994
Base map: HNTB 1999

Figure 3.7-1
Biological Resources

500 0 1000 2000 ft

Table 3.7-1
Summary of Jurisdictional Waters and Wetlands

Category	Acres
Peters Canyon Channel	
Wetlands[1]	0
Waters of the U.S.	12.8
All other Ditches and Channels	
Wetlands	2.4
Waters of the U.S.	16.2
Totals	
Wetlands	2.4
Waters of the U.S.	29.0

(1) Wetland (vegetated) portions visible in aerial photos have since been cleared.

3.7.3 Wildlife

Agricultural, residential, and industrial land uses typically limit a site's value as wildlife habitat. Such areas are low in species diversity and abundance. The low availability, or absence, of essential habitat elements such as food and cover limits habitat value on the site. As a result, the only wildlife using the reuse plan area are species tolerant of disturbed conditions. However, even species adapted to human-dominated habitat occur only in low numbers on the site, indicating its minimal habitat value.

Birds and mammals noted on the site are typical of open grassland communities and suburban neighborhoods in coastal southern California. Animals sighted included rabbits, squirrels, gophers, mice, and coyotes. Forty-eight species of birds (generally the most conspicuous vertebrates) were noted during the field visits in March 1993. Most birds were congregated toward the housing area in the northwestern corner of the site and were in the weedy margins of agricultural fields, particularly those adjacent to the channels. Birds included herons and egrets, swans, geese, ducks, vultures, hawks, sandpipers, gulls, hummingbirds, swallows, crows, sparrows, and other common birds. An area in the southern part of the site, adjacent to the San Joaquin Channel which is parallel to Jamboree Road, was temporarily flooded as a result of heavy rains in Spring 1993 and was found to support various water bird species, such as ducks, shorebirds, and gulls.

Animal species richness and abundance is considered low, as only 25 small mammals were trapped in 349 trap-nights. Western fence lizards (*Sceloporus occidentalis*), one of the most ubiquitous reptiles in coastal southern California, were seen and identified. The southwestern pond turtle (*Clemmys marmorate pallida*) was found in the San Joaquin Channel (see Section 3.7.4 below).

Lists of animal species observed at the site during the 1993 and 1994 field visits are provided in those previously cited reports.

3.7.4 Sensitive, Threatened, and Endangered Wildlife Species

Sensitive wildlife species include those species: (1) listed as threatened or endangered by U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG); (2) proposed for listing by USFWS or CDFG; (3) listed as species of special concern by CDFG; or (4) listed as a special animal by CDFG. Sensitive species observed, or which have the potential to occur, in the reuse plan area are described in more detail below.

American Peregrine Falcon

An American peregrine falcon (*Falco peregrinus anatum*), which is listed as an endangered species by USFWS and CDFG, was observed at the Air Station in Marcb 1993. The falcon was flying around the northern blimp hangar. Following the sighting, focused surveys of potential nest sites were conducted during the nesting seasons in April and May 1993, to determine whether or not the species nested on site. No evidence of nesting was found, and no peregrine falcons were subsequently observed. The biologist concluded that the falcon was an occasional transitory migrant and that the site does not constitute habitat for this species (City of Tustin 1993b, 1993o).

San Diego Fairy Shrimp and Riverside Fairy Shrimp

San Diego fairy shrimp and Riverside fairy shrimp (*Branchinecta sandiegogenensis* and *Streptocelaphus woottoni*, respectively) are listed as endangered by the USFWS and CDFG and occur only in vernal pools. Biological surveys concluded that no vernal pools exist in the reuse plan area (City of Tustin 1993o). Thus, the site does not provide habitat for these species.

Southwestern Pond Turtle

The southwestern pond turtle, identified as a "species of special concern" by CDFG, has been sighted in the San Joaquin Channel (City of Tustin 1993b, 1993o, 1999n). The subspecies sighted at MCAS Tustin is the *Clemmis marmorata pallida*, one of two recognized subspecies.

Southwestern pond turtles live near permanent open water but lay eggs on sand banks or in upland habitat, often well away from streams or ponds. In Orange County, there are at least 19 locations

currently containing relatively small numbers of southwestern pond turtles. These sites range in number from approximately 6 to 36 turtles. These locations are not considered viable to long-term survival of the turtle as all are increasingly threatened by encroaching development and other related factors such as invasion of non-native species. None of these populations are expected to persist into the foreseeable future. MCAS Tustin is included as one of these populations (City of Tustin 1999n).

One turtle was sighted in the San Joaquin Channel in 1993. As part of this environmental process, a focused survey was conducted in September and October of 1998, consistent with protocol recommended by CDFG. Three turtles were sighted (Tierra Madre Consultants 1999). Additionally, a biological survey of the channel whicb included trapping, was conducted in 1991 in connection with the construction of Jamboree Road. At that time, a total of 26 turtles were captured (City of Tustin 1999n).

San Joaquin Channel is located in the southeastern portion of the Air Station, between Jamboree Road and family housing adjacent to Harvard Avenue. It is a narrow, V-shaped flood control channel without nesting habitat within its banks. To build nests, the turtles must climb out of the channel and use adjacent upland habitat. The adjacent upland habitat in the reuse plan area is a disturbed field with compacted soil. There is no appropriate nesting habitat for the turtles at this location.

Loggerhead Shrike

Four loggerhead shrikes, identified as a "species of special concern" by CDFG, were observed on the Air Station in March 1993. Loggerhead shrikes have suffered declines in the Midwestern and Southeastern United States, and they are designated as threatened or endangered by several states. In California, even though loggerhead shrikes have become common to abundant, especially in desert regions as a result of the protected status, they are still identified as species of special concern by the CDFG. They are somewhat tolerant of urban and suburban development, and can be found nesting within city boundaries in many locations (City of Tustin 1993b).

The loggerhead shrike that was observed during the field surveys is presumed to nest on-site, as both the nest sites (shrubs and trees) and foraging areas (agricultural fields) are present. Four individuals were observed, and the reuse plan area could support one or two nesting pairs (City of Tustin 1993b, 1999n).

Burrowing Owl

Burrowing owls (*Speotyto cunicularia*) are identified as a "species of special concern" by CDFG and are protected under the Migratory Bird Treaty Act (MBTA). Burrowing owls inhabit open areas such as grasslands, pastures, desert scrub, and the edges of agricultural fields. Burrowing owls have declined in mucb of their range because of habitat loss due to urbanization, agricultural conversion, and destruction of ground squirrel colonies. (The owls use rodent burrows for shelters and nests.) Burrowing owls are relatively tolerant of human activity, but suffer from human impacts such as shooting and introduction of non-native predators (Remsen 1978, Zarn 1974). A biological survey conducted in July 1998 concluded that no owls or suitable owl habitat exist within the reuse plan area (DON 1998c). Generally, burrowing owls prefer soils with a higher sand content than the silty clay loam and loam soils found on site.

Other

Some sensitive animal species are known to occur in the vicinity of the Air Station, but were not found in the reuse plan area during the biological studies. These wildlife species include the San Diego horned lizard, red diamond rattlesnake, Cooper's hawk, golden eagle, and San Diego pocket mouse (City of Tustin 1993b, 1993o). No suitable habitat is present and thus, no such species were found during biological surveys.

3.8 AGRICULTURAL RESOURCES

The U.S. Natural Resources Conservation Service (NRCS) classifies an area's suitability for agricultural use based on physical and chemical features of the land. The NRCS has seven farmland classifications which are shown in Table 3.8-1. Only four of these categories (Prime Farmland, Farmland of Statewide Importance, Urban and Built-up Land, and Other Land) are located within the reuse plan area, as shown on Figure 3.8-1.

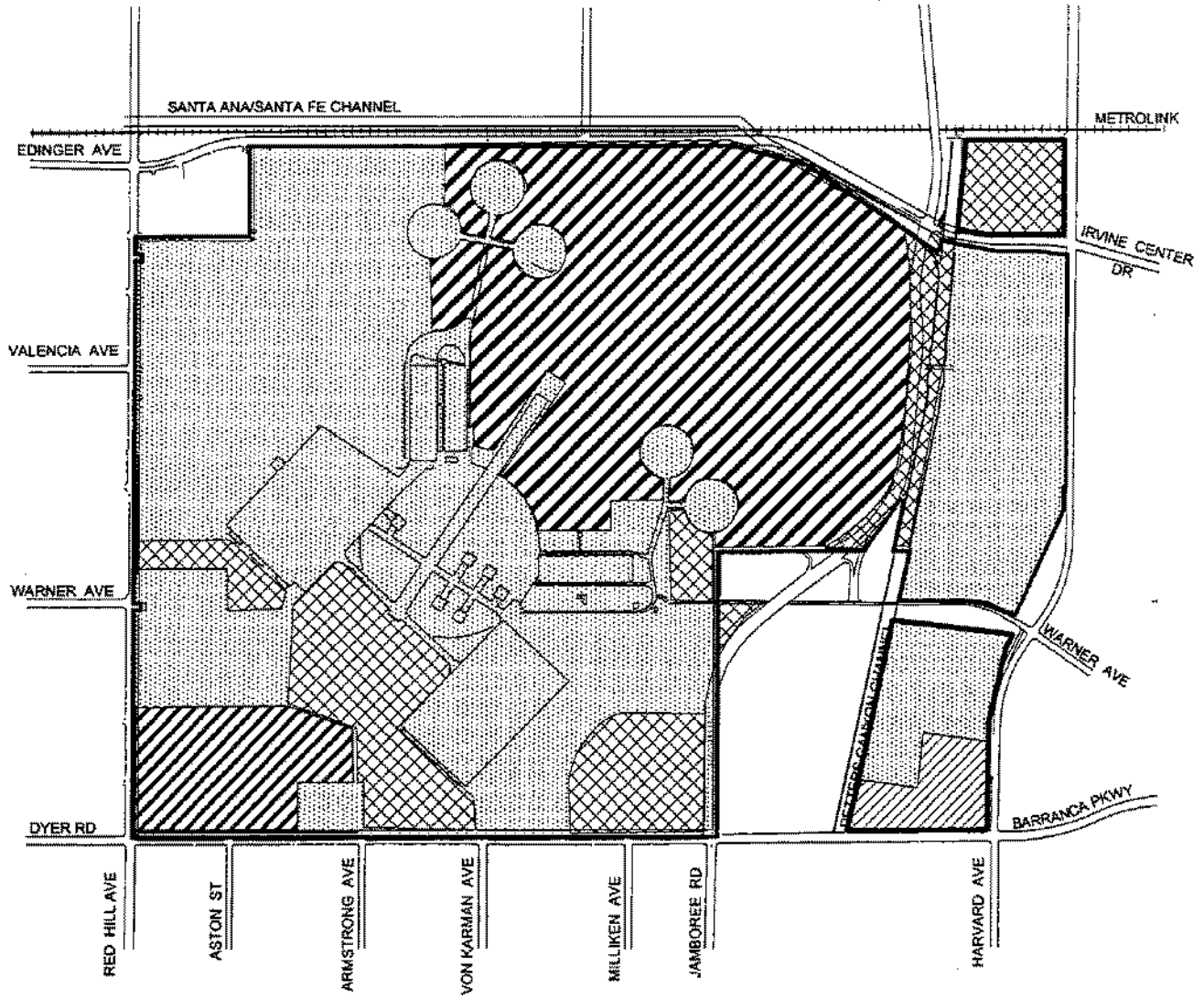
Table 3.8-1
Important Farmland Classifications

Symbol	Category	Description	Acreage
P	Prime Farmland	Land with the best combination of physical and chemical features for the production of agricultural crops	682
S	Farmland of Statewide Importance	Land with a good combination of physical and chemical features for the production of agricultural crops	20
U	Unique Farmland	Land of lesser quality soils used for the production of the State's leading agricultural cash crops	0
L	Farmland of Local Importance	Nonirrigated Prime and Statewide soil mapping units, and cultivated farmlands not covered by any above category, but are of significant economic importance to the County	0
G	Grazing Land	Land on which the existing vegetation is suited to the grazing of livestock	0
D	Urban and built-up Land	Land occupied by structures or infrastructure to accommodate a building density of at least one unit to one and one-half acres, or approximately six structures to ten acres	673
X	Other Land	Land which does not meet the criteria of any other category	231
Total			1,606

Source: Natural Resource Conservation Service 1999

3.8.1 Prime Farmland

In 1993, as well as currently, 530 acres of the 1,594 acres of MCAS Tustin land are in agricultural lease. According to the NRCS, the leased land is mapped as Prime Farmland (NRCS 1999). The Prime Farmland is located within the City of Tustin boundaries. Of the leased property, a 360-acre portion is cultivated for irrigated row crops. The remaining 170 aeres of leased land is operationally constrained due to noise and crasb hazard potential associated with the Air Station's helicopter activities and is classified as a maintenance area for weed control. There is no history of agricultural use on this land, which is located on the east and west edges of the airfield operation area.



Source: Natural Resource Conservation Services 1999; California Department of Conservation Farmland Mapping and Monitoring Program 1990
Base map: HNTB 1999

500 0 1000 2000 ft

Figure 3.8-1
Important Farmlands

3.8.2 Farmlaod of Statewide Importance

A 20-acre parcel in the southern corner of the Air Station is mapped as Farmland of Statewide Importance. This land is undeveloped and located immediately south of the existing military family housing, between Marble Mountain Road and Barranca Parkway, within the City of Irvine boundaries.

3.8.3 U.S. Department of Agriculture, Natural Resources Conservation Service

The Farmland Protection Policy Act (FPPA) (Public L. 97-98; 7 U.S.C. §§ 4201-4209) applies to federal actions that would convert prime or unique farmlands, or farmlands of statewide or local importance, to nonagricultural use. Pursuant to the FPPA, impacts to farmland must be determined if farmland, as defined by Section 1540(c)(1) of the act, is converted to nonagricultural use by a federal agency, in this case DON. Federal form AD-1006, Farmland Conversion Impact Rating, must be completed by the NRCS and the federal agency to assess potential impacts to farmlands. Site assessment is based on agricultural suitability.

The NRCS rates a site on a scale of zero to 100, and the respective federal agency rates the site on a scale of zero to 160. The total of these two ratings (260) is the basis for determining the level of consideration for protection. Sites receiving a total score of less than 160 need not be given further consideration for protection. The Farmland Conversion Impact Rating of MCAS Tustin has been completed (Figure 3.8-2). The NRCS determined that the relative value of the farmland is 80. DON determined a site assessment rating of 51, for a combined rating of 131. No further consideration for federal protection under the FPPA is necessary with this rating.

3.8.34 The Williamson Act

The Williamson Act was adopted in 1965 and established a voluntary farmland conservation program wbich restricts contracted land to agricultural and/or open space uses for at least ten years. Landowners who enroll their lands in contract with a participating local government receive preferential tax treatment based on the actual use of the land for agricultural purposes, as opposed to the unrestricted market value. The contracts are renewed annually unless the non-renewal process is initiated by either party to the contract. Under non-renewal, the contract winds down over the remaining nine-year term, with taxes gradually raising back to the full, unrestricted market value

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: April 1, 1999
Name Of Project: MCAS Tustin Disposal and Reuse EIS/EIR	Federal Agency Involved: U.S. Marine Corps (Tustin)
Proposed Land Use: Residential, Commercial, Institutional	County And State: Orange County, California (City of Tustin)
PART II *(To be completed by SCS)*	Date Request Received By SCS:

Does the site contain prime, unique, statewide or local important farmland? Yes ☒ No ☐ *(If no, the FPPA does not apply – do not complete additional parts of this form).*

Acres Irrigated: 18,000 | Average Farm Size: 280

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount Of Farmland As Defined in FPPA	Date Land Evaluation Returned By SCS
Row crops, citrus	Acres: 37,000 %	Acres: N/A %	5/21/99 RST
Name Of Land Evaluation System Used: Calif Storie Index	Name Of Local Site Assessment System: NONE		

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	1,585			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	1,606			
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	682			
B. Total Acres Statewide And Local Important Farmland	20			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	.002			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	80			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	0			
2. Perimeter In Nonurban Use	10	0			
3. Percent Of Site Being Farmed	20	10			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	0			
6. Distance To Urban Support Services	15	10			
7. Size Of Present Farm Unit Compared To Average	10	10			
8. Creation Of Nonfarmable Farmland	10	10			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	8			
11. Effects Of Conversion On Farm Support Services	10	3			
12. Compatibility With Existing Agricultural Use	10	5			
TOTAL SITE ASSESSMENT POINTS	160	51			
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	80			
Total Site Assessment *(From Part VI above or a local site assessment)*	160	51			
TOTAL POINTS *(Total of above 2 lines)*	260	131			

Site Selected: | Date Of Selection | Was A Local Site Assessment Used? Yes ☐ No ☑

Reason For Selection:

Figure 3.8-2
Farmland Conversion Impact Rating

rate. The program is administered by counties and cities with assistance from the California Department of Conservation. The County of Orange is one of the 42 counties (out of the 58 counties) participating in the program, and administers the program within its jurisdiction. Due to the high land values, particularly in the central and southern portions of the county, that place pressure upon landowners to convert agricultural uses to urban uses, the last of the Williamson Act contracts has been noticed for non-renewal and will be removed from the preserve status in 1999 (County of Orange 1999a). The reuse plan area is not under a Williamson Act contract.

3.8.45 Seasonal Employment Associated with the Leased Agricultural Land

All of the leased land currently under active use is operated by Osumi Farms, Inc. The farming operation employs several hundred people each year for the harvesting and packing of produce. This employment is considered temporary (Osumi 1998).

3.9 SOILS AND GEOLOGY

3.9.1 Soils

There are five soil types that overlay the reuse plan area. These soil associations and their general descriptions are listed in Table 3.9-1.

Table 3.9-1
Soil Properties

Soil Type	Soil Characteristics	Occurrence	Erosion Hazard	Building Site Development	
				Structures	Local Roads
Chino silty clay loam, drained	Somewhat poorly drained soils	Alluvial fans	Slight	Moderate	Severe
Chino silty clay loam	Somewhat poorly drained soils	Alluvial fans	None to Slight	Moderate	Severe
Omni clay	Poorly drained soils	Flood plains and basins	None to Slight	Severe	Severe
Omni clay, drained	Poorly drained soils	Flood plains and basins	Slight	Severe	Severe
Sorrento sandy loam, 0-2 percent slopes	Well drained soils	Alluvial fans and flood plains	Slight	Moderate	Severe

U.S. Department of Agriculture, Soil Conservation Service 1978

The majority of the site, including all of the northern and central area and a portion of the southern area, is covered with Chino silty clay loam, drained. The area adjacent to the Peters Canyon Channel is covered with Chino silty clay loam. Soil classified as Omni clay and Omni clay drained can be found in the military housing area along Harvard Avenue, along with Sorrento sandy loam.

All of the soils in the reuse plan area are characterized by being poorly drained soils in alluvial fans, flood plains, or basins. The on-site soils have only a slight erosion hazard but do have a moderate to severe building site development limitation. A moderate limitation (Chino silty clay loam, drained; Chino silty clay loam; Sorrento sandy loam) indicates that soil properties and site features are unfavorable for urban use, but the limitations can be overcome or minimized by special planning and design. A severe limitation (Omni clay and Omni clay, drained) indicates that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. Remedial measures must be taken prior to construction to prevent damage to foundations, structures, and infrastructure due

to building limitations. These measures could include soil import, soil amendment, and pile foundations.

3.9.2 Geology

Approximately 1,400 feet of unconsolidated to semi-consolidated sediments underlie the reuse plan area and consist of approximately 30 feet of Holocene (recent) alluvium underlain by 250 feet of older alluvium, then an alluvial layer approximately 1,100 feet thick, consisting of semi-consolidated sand gravel and fine-grained deposits of lagoonal and shallow marine origin. This sequence is underlain by older bedrock units of semi-consolidated sandstone, siltstone, shale, and conglomerate lenses. The older units are approximately 2,000 to 2,500 feet thick.

The near-surface sediments in the reuse plan area consist of unconsolidated alluvium. This alluvium is characterized by potential geotechnical hazards including local settlement, regional subsidence, expansive soils, unstable slopes (if cut or excavated), low resistance to erosion, and landslides and mudflows. These issues are discussed below.

Local Settlement

Settlement is the localized lowering of the ground surface due to a decrease in the volume of the underlying soils. Settlement commonly results from consolidation of compressible soils or hydrocompression, which are defined below.

- *Consolidation of Compressible Soils*: Consolidation is the slow reduction in volume and increase in density of the soil under the influence of an increased overlying load. Common causes of increased loads are the weight of a new building or placement of new layers of fill. Recently deposited sediments, such as young alluvium or uncompacted artificial fills, are generally moderately to highly likely to shrink in volume, and likely to settle under a new load. Compressible soils susceptible to some consolidation are likely to occur over the entire reuse plan area, but particularly rear of Peters Canyon Channel.

- *Hydrocompression or Collapse*: This is the decrease in soil volume caused by the addition of water. Subsidence as a result of this phenomenon has been reported in arid to semi-arid areas throughout southern California where previously dry soils have been irrigated extensively for agricultural purposes. Hydrocompression typically occurs in loose alluvial soils in which the sand and silt particles are held together by a weak binder, such as clay. When water is added,

the binder weakens, and the soil collapses under its own weight, or under the weight of a building or fill. Hydrocompression is considered a significant impact at the site if the groundwater table is lowered. At present time, the groundwater table at the reuse plan area is very shallow (approximately 5 to 25 feet below ground surface), and therefore the hydrocompression potential is very low.

Regional Subsidence

Subsidence is the gradual lowering of the ground surface over a wide area as a result of fluid withdrawal, mineral extraction, or seismic forces. When fluids (such as water, oil, gas, or geothermal fluids) are extracted from sediments in the subsurface, the weight of the overlying sediments, which the fluid had previously helped support, is transferred directly to the soil structure. This causes the soil to decrease in volume, resulting in a lowering of the ground surface. Regional subsidence due to groundwater withdrawal is generally not considered to pose a significant impact to buildings and improvements, unless ground cracks or earth fissures develop as a result of elevation changes. However, facilities that are sensitive to slight changes in gradient, such as sewers, canals, and drains, can be affected significantly. The potential for flooding, especially in flat, low-lying areas can also increase.

Subsidence as a result of groundwater withdrawal has not been documented to affect residential or commercial structures at or near the reuse plan area.

Expansive Soils

Expansive soils swell when they become wet and shrink when they dry out. The resulting expansion and contraction can cause damage to structures, including cracking, heaving, and buckling of foundation and slabs, with resulting structural distress to buildings. Alluvial fan environments are common sites for the accumulation of thick clay deposits, many of which may be expansive. Expansive clay was observed during subsurface investigations at adjacent sites. According to the County of Orange, the reuse plan area lies within an area of high to very high expansivity.

Instability

The topography of the reuse plan area is relatively flat. For this reason, the hazard of instability of natural slopes is considered negligible.

Erosion

The erosion potential of most of the soils in the reuse plan area is considered to be moderate because the topsoil is often impacted by strong Santa Ana winds, and concentrated runoff has resulted in erosion along the Peters Canyon Channel and other unlined channels adjacent to the site. Minor erosion has also been observed on the artificial fill slopes on Jamboree Road.

Mineral Resources

No mineral resources are known to occur on the reuse plan area.

Landslides and Mudflows

Landslides and mudflows are not present within the reuse plan area and are not considered likely to occur in the future due to the relatively flat topography of the site and surrounding region. The County of Orange places the site within an area characterized by very low likelihood for seismic landsliding and no likelihood for mudflows.

3.9.3 Seismic Setting

The reuse plan area lies within a region of Southern California which is known to be seismically active. Earthquake-related hazards typically include the following:

- High-intensity ground shaking produced by the seismic waves generated when a fault ruptures during an earthquake. The response of buildings, lifelines, and other structures to strong ground motion produced by these seismic waves is the primary cause of earthquake damage.
- Surface ground failure that occurs when the fault that generates the earthquake, or a related (sympathetic) fault, moves and breaks the ground surface.
- Liquefaction and other types of ground failure, including settlement, lateral flows, or slips, that result from seismic activity in areas where susceptible earth materials are present.

High-intensity Ground Shaking

The primary potential earthquake hazard within the reuse plan area is ground shaking. An earthquake occurs when the elastic strain energy that has accumulated in the bedrock along a fault is suddenly released. The energy propagates as seismic waves that radiate in all directions from the

earthquake epicenter. The strong ground motion produced by these seismic waves is the primary cause of earthquake damage. Brick and masonry buildings, especially if not reinforced, are less tolerant of earthquake-induced vibrations than steel or wood structures. Critical facilities (such as hospitals, police and fire stations, water and gas utilities, and other important infrastructure elements) are commonly designed to provide a higher degree of safety than conventional development.

There are several active faults near the reuse plan area capable of causing ground motions at the site. Three faults closest to the site are the Newport-Inglewood Fault (10 miles), the Whittier Fault (14 miles), and the Elsinore Fault (14 miles) (Figure 3.9-1). More distant faults with a history of causing earthquakes and damage include the Palos Verdes Hills Fault, the Elysian Park Fault, the Sierra Madre Fault, the Cucamonga/San Jose Fault, the San Jacinto Fault, the San Andreas Fault, and the San Clemente Fault. These potentially hazardous faults are depicted on Figure 3.9-1 and are listed in Table 3.9-2.

Table 3.9-2
Seismic Parameters for Maximum Probable Earthquakes

Fault	Distance to MCAS Tustin (miles)	Estimated Probable Maximum Earthquake Magnitude	Estimated Ground Acceleration (g)	Estimated Probability of Occurrence in 100 Years
Newport-Inglewood	10	6.5	0.25	Moderate
Whittier	13	7.3	0.20	Moderate
Elsinore	15	6.5	0.30	High
Palos Verdes Hills	22	6.5	0.15	Moderate
Elysian Park	25	7.0	0.10	Moderate
Sierra Madre	30	6.5	0.15	High
Cucamonga/San Jose	31	6.6	0.10	High
San Jacinto	36	7.0	0.15	High
San Andreas	44	7.8	0.15	High
San Clemente	48	6.6	0.10	Moderate

As sbown in Table 3.9-2, the maximum probable earthquake ranges from magnitude 6.5 to 7.8. The maximum probable earthquake for the three faults closest to the site (described below) is 7.3 (Whittier Fault). An earthquake of magnitude 6.0 to 6.5 generally results in moderate damage to chimneys, brittle masonry structures, and damage to tall, thin structures such as signs and towers, and damage to wall panels. Some building may be shifted off foundations. A magnitude 7.5 or greater earthquake would result in major damage to most facilities and broken utilities.

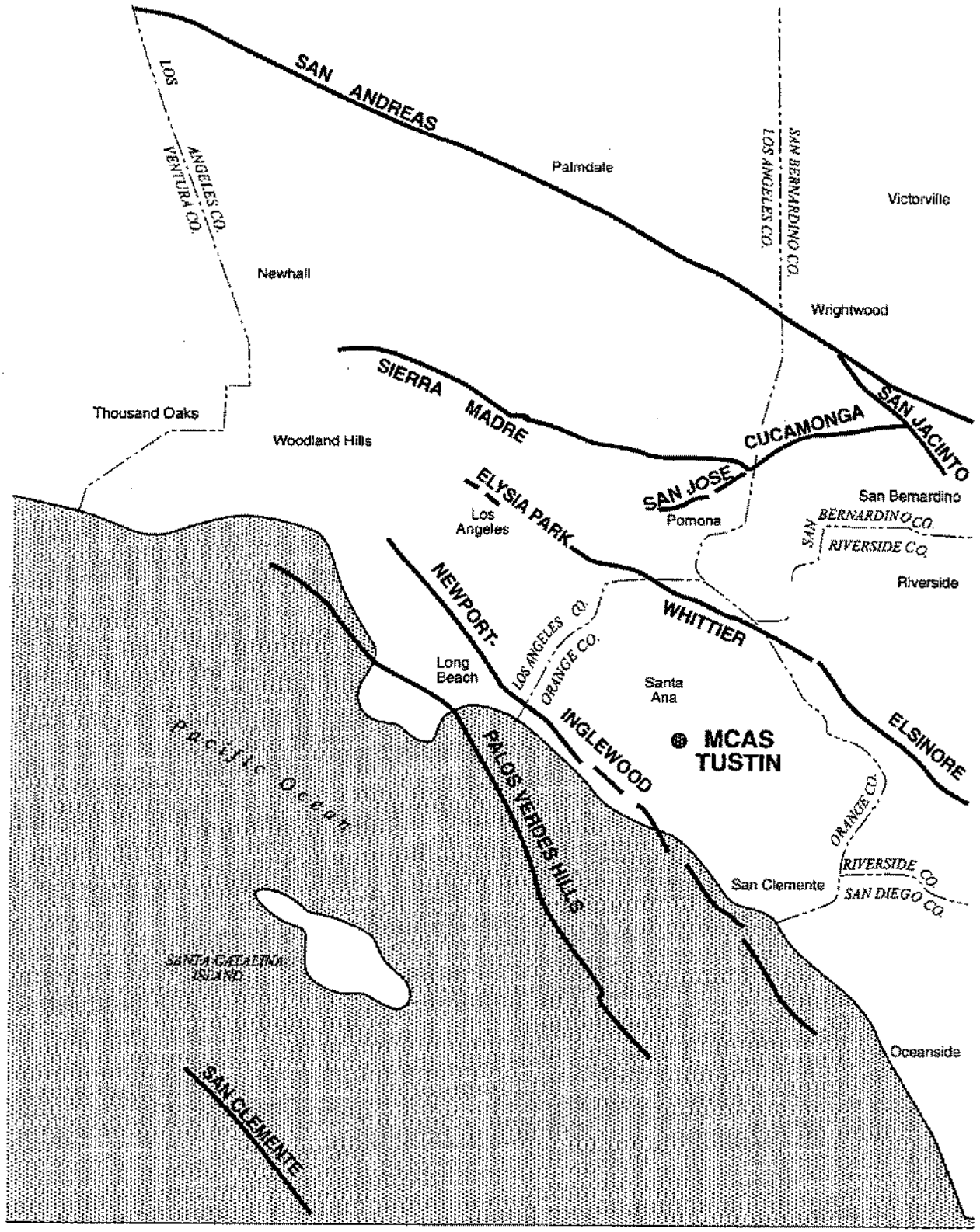


Figure 3.9-1
Active Faults

The Newport-Inglewood Fault lies within a zone of faulting and folding about 10 miles southwest of MCAS Tustin. The fault trends northwest-soutbeast and extends from the Santa Monica Mountains, north of Inglewood, passes below Newport Bay and Balboa Island, and continues southeast to possibly as far as San Diego. This fault has produced many earthquakes, including the March 10, 1933 Long Beach earthquake that registered a magnitude 6.3 on the Richter Scale.

The Whittier Fault is located approximately 13 miles to the north of the site. The fault extends from the Los Angeles area southeasterly to the Elsinore Fault. This fault is considered potentially active and has a maximum probable earthquake magnitude of 7.3.

The Elsinore Fault, approximately 15 miles to the northeast, is a northwest-southeast trending fault that ranges from the southwest corner of San Bernardino County to near the border of Mexico. The maximum probable earthquake magnitude on the Elsinore Fault is 6.5.

The Palos Verdes Hills Fault is approximately 22 miles to the southwest of the site in Pacific Ocean. The Palos Verdes Hills Fault trends northwest-southeast and extends from Santa Monica Bay, across the peninsula of Palos Verdes Hills, under the Los Angeles and Long Beach Harbors, and may extend to Baja California along the Coronado Banks and Aqua Blanca fault zones. There is 3,000 to 4,000 feet of vertical displacement of the basement rocks along the fault zones. The fault has apparently been active during the past 11,000 years, based upon three feet of offset in the sea floor and 10 feet of offset in wbat is considered to the base of the Holocene deposits.

The Elysian Park Fault is a relatively short fault that lies to the northwest of the Whittier Fault and is located approximately 25 miles to the northwest of the reuse plan area. The Sierra Madre Fault is located approximately 30 miles to the northwest. The Cucamonga/San Jose Fault is approximately 31 miles to the north of the site and runs in a southwest to northeast direction.

The San Jacinto Fault is about 36 miles northeast of the reuse plan area, trends northwest-southeast, and extends from the east San Gabriel Mountains to Baja California. Ground ruptures along the fault have occurred historically with the right lateral movements exhibiting a slip rate of 8 to over 12 millimeters of horizontal movement per year. The most recent instance of surface rupture was during the 1968 magnitude 6.5 earthquake in Borrego Valley.

The San Clemente Fault is located approximately 48 miles from the reuse plan area. The fault has an estimated probable maximum earthquake magnitude of 6.6, and a moderate estimated probability of occurrence in 100 years.

The northwest-southeast trending San Andreas Fault marks the boundary between the North American and Pacific tectonic plates and is about 44 miles northeast of the site. The fault line starts out to sea just south of San Francisco, extends through southern California, and ends near the Mexican border. Surface ruptures have occurred at various locations. Movement is lateral at rates estimated between 20 to 30 millimeters of horizontal movement per year. There is greater than 60 percent probability of a magnitude 7.5 earthquake with the next 30 years.

There are two other faults in the vicinity of the site: Peralto Hills-El Modena Fault and Pelican Hills Fault (Figure 3.9-1). Both faults are considered to the non-active and of low seismic potential. Should they become reactivated, there is low potential for large earthquakes due to their limited lengths.

Surface Fault Displacement

Fracturing and displacement of the ground surface commonly occurs during an earthquake along a fault (referred to as primary fault rupture), or as a result of movement on zones of weakness nearby, such as older fault traces (referred to as secondary fault ruptures). Generally, primary fault rupture results in larger surface displacements, while secondary fault rupture produces smaller, but more widespread offsets. Either type of fault rupture is damaging to surface improvements built across the zone where rupturing takes place.

To protect structures from these hazards, the California Division of Mines and Geology, under the state-mandated Alquist-Priolo Act of 1972, has delineated Special Study Zones (now called Earthquake Fault Zones) along active and potentially active faults that intersect the ground surface. The reuse plan area is not located within an Alquist-Priolo Earthquake Fault Zone, and no active or potentially active fault is known to exist at the ground surface in, or immediately adjacent to, the site.

Liquefaction

Liquefaction occurs when loose, water-saturated soils (generally fine-grained sand) are subjected to strong seismic ground motions of significant duration. These soils essentially behave as liquids, losing all weight-bearing strength. Structures built on these soils tilt or sink when the soils beneath them liquefy. Liquefaction commonly occurs in earthquake-prone areas underlain by young alluvium where the groundwater table is less than 50 feet below the ground surface.

The reuse plan area may be underlain locally by loose sands and shallow water table, especially near the Peters Canyon Channel. The County of Orange considers the liquefaction potential of this site

to be moderate to high. Recent investigations near Peters Canyon Channel have identified layers of potentially liquefiable deposits at shallow depths (City of Tustin 1995b). The state geologist has mapped the entire site within a liquefaction hazard zone (California Division of Mines and Geology 1998).

Ground Lurching

Certain soils have been observed to fail as the ground moves in a wave-like manner in response to intense shaking, forming ridges or cracks on the ground surface. Typically, only the general probability of the phenomenon known as ground lurching can be predicted at a given point. Areas underlain by thick accumulations of alluvium appear to be more susceptible to ground lurching than bedrock. Under strong seismic ground motions, lurching can be expected within loose, cohesionless soils or plastic earth materials with high moisture content. In general, only light structures such as pavements, fences, pipelines, and walkways are damaged by ground lurching; heavy structures such as buildings, resist damage. The reuse plan area is underlain by a thick accumulation of alluvium, and is thus susceptible to ground lurching during periods of strong seismic ground motions.

Seismically Induced Settlement

Seismically induced settlement occurs when shallow, loose, sandy deposits form a more densely packed structure during the shaking by seismic waves. The tighter packing of the sand grains reduces the volume of the deposit, which expresses itself as settlement of the ground surface. In the reuse plan area, seismically induced settlement is most likely to occur only in the youngest alluvial deposits adjacent to Peters Canyon Channel.

Tsunami and Seiches

Low-lying coastal areas may be subject to flooding or other damage from large earthquake-induced ocean waves known as tsunami. According to the County of Orange, the reuse plan area does not lie within an area of tsunami run-up risk.

Confined bodies of water may be subject to large earthquake-induced water waves known as seiches. As with tsunami, these waves can cause flooding and other related property damage to adjacent areas. Confined bodies of water do not exist either within or near the reuse plan area.

Flooding Attributable to Dam Failure After an Earthquake

Strong seismic ground motion can cause dams and levees to fall allowing flood water to damage downstream structures and other property. Currently only Peters Canyon and Rattlesnake reservoirs exist upstream of the reuse plan area.

3.10 WATER RESOURCES

This section discusses groundwater resources and water quality. Other water-related issues, such as stormwater runoff and contamination, are discussed in Utilities (Sections 3.3 and 4.3) and Hazardous Wastes, Substance, and Materials (Sections 3.11 and 4.11), respectively.

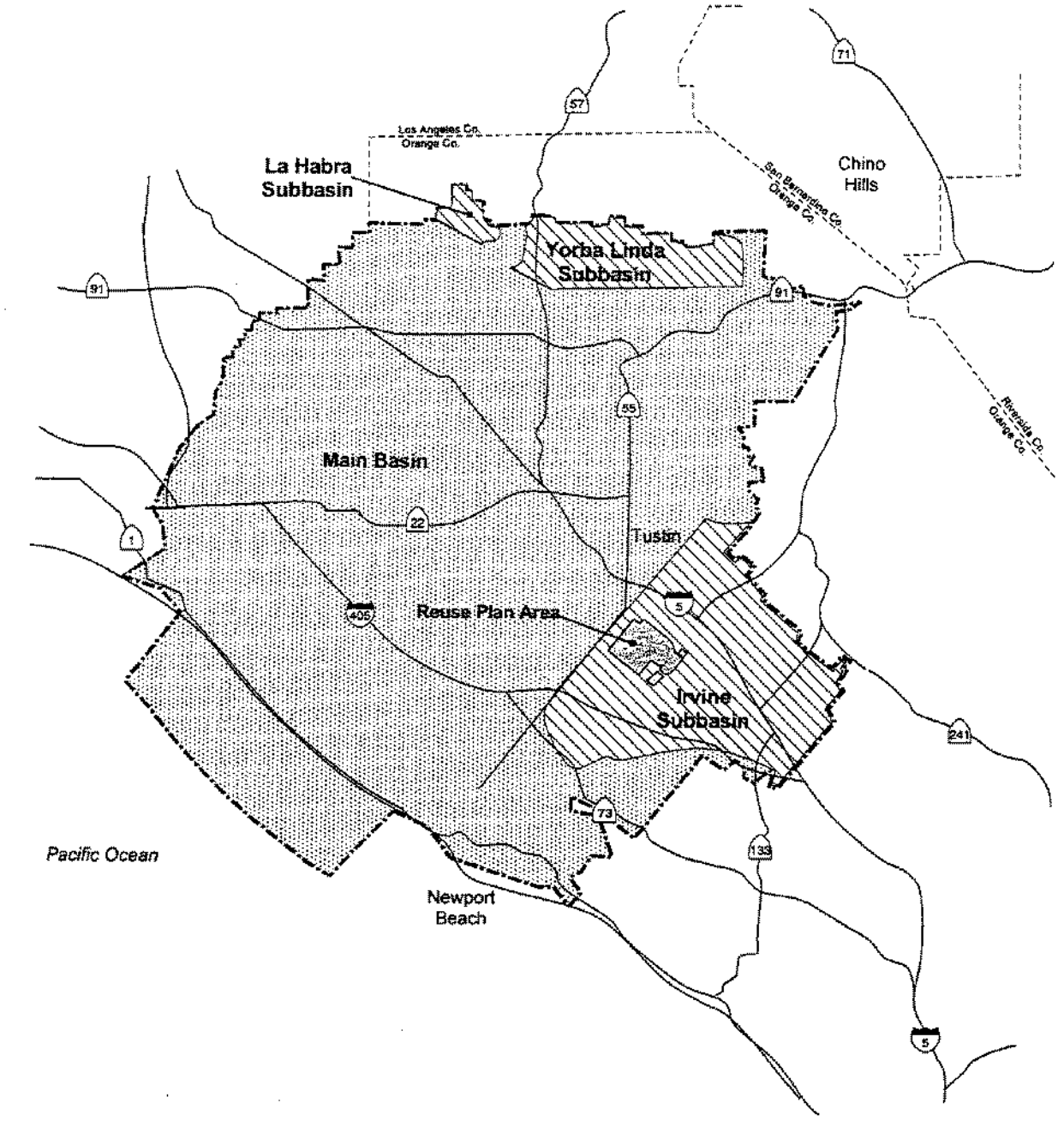
3.10.1 Groundwater Resources

The reuse plan area overlies a portion of the Irvine Subbasin of the greater Orange County Groundwater Basin (Figure 3.10-1). The Orange County Groundwater Basin consists of the Main Basin, the Irvine Subbasin, the La Habra Subbasin, and the Yorba Linda Subbasin.

The Irvine Subbasin forms the southeastern-most portion of the Orange County Groundwater Basin. It is bounded by the Santa Ana Mountains and the San Joaquin Hills. The Costa Mesa Freeway (SR-55) marks its boundary with the Main Basin. This freeway approximates where the principal aquifer rapidly deepens and thickens to the west (Orange County Water District 1999b).

Irvine-area aquifers are thinner and contain more clay and silt deposits than aquifers in the Main Basin. The base of the aquifer system in the Irvine Subbasin ranges from approximately 1,000 feet deep beneath MCAS Tustin to less than 200 feet deep at the eastern boundary of MCAS El Toro. East of MCAS El Toro, the aquifer further thins and transitions into lower-permeability sandstones and other semi-consolidated sediments that have minor water-producing capacity (Orange County Water District 1999b).

Groundwater levels in the regional aquifer have varied over the past several decades in response to the history of withdrawal and recharge. The water table was generally lowest in the 1950s during a period of heavy agricultural pumping. It had gradually recovered by 1971 to elevations above its undisturbed condition in the 1930s, due to decreased pumping combined with recharging of the Subbasin with imported water from the Colorado River. Since 1971, the regional water table has continued to rise, but has been marked by periods of wide fluctuations due to variations in the amount of natural recharge and local pumping (City of Tustin 1995b). In the vicinity of the reuse plan area, the regional aquifer occurs approximately 90 to 150 feet below ground surface (bgs) or (-40) feet mean sea level (msl) (DON 1998b).



Source: Orange County Water District Master Plan Report 1999

Figure 3.10-1
Orange County Water District Groundwater Basins

Groundwater production within the Irvine Subbasin is primarily from the Irvine Company and is used for agricultural irrigation and urban uses. Groundwater typically flows out of the Irvine Subbasin westerly into the Main Basin since the amount of natural recharge in the area (predominantly from the Santa Ana Mountains) is typically greater than the approximately 8,000 acre feet per year (AFY) of pumping. In the future, with the anticipated operation of the Irvine Desalter Project, groundwater production in the Irvine Subbasin may exceed the natural replenishment from the adjacent hills and mountains, in which case groundwater would be drawn into the Irvine Subbasin from the Main Basin (Orange County 1999b).

Underlying MCAS Tustin, a shallow aquifer exists in water bearing zones (WBZs) within the upper 90- to 150-foot soils. The elevation of the water table varies from 30 to 60 feet msl (5 to 15 feet bgs). Groundwater flow in the shallow aquifer zones is controlled by the three main drainage channels (Peters Canyon Channel, Santa Ana-Santa Fe Cbannel, and the Barranca Channel) surrounding the Air Station, which incise below the groundwater table and act like dewatering trenches. As a result, the shallow groundwater flows toward tbe three drainage channels. The drainage cbannels bave no influence on the regional aquifer. The shallow aquifer does not contain potable water and is hydraulically separated from the regional aquifer (DON 1998b).

3.10.2 Groundwater Quality

Groundwater recharge from the Santa Ana Mountains tends to have high total dissolved solids (TDS) concentrations, presumably because of the flow through marine sedimentary rocks in the mountains. TDS concentrations in the deep regional aquifer range from 250 to 1,700 milligrams per liter (mg/L) and average about 800 mg/L. The average TDS concentration is below the secondary drinking water standard of 1,000 mg/L recommended by the Orange County Department of Health Services, but above the quality objective of 700 mg/L designated by the State of California Regional Water Quality Control Board (RWQCB) for irrigation uses. Water from the deep regional aquifer is generally suitable for irrigation, but not for drinking water. This groundwater generally contains sodium and calcium (DON 1998b).

The deep regional aquifer under the reuse plan area contains water that is used for agriculture and to supplement reclaimed water (City of Tustin 1995b). However, groundwater quality in the shallow aquifer beneath the site ranges from brackish to saline (DON 1998b). The TDS concentrations exceeded 10,000 mg/L in the uppermost or first WBZ in the downgradient lowland areas of the Air Station along Peters Canyon Channel. The primary causes of the bigh TDS in the shallow

groundwater at MCAS Tustin are leaching of salts by infiltrating water from precipitation and irrigation and loss of moisture through evaporation from the shallow water table (DON 1998b).

Past Air Station operations also resulted in several localized releases of hazardous substances within the upper 50 feet of the shallow aquifer beneath MCAS Tustin, as discussed in Section 3.11 and indicated on Figure 3.11-1. These plumes are being remediated pursuant to DON cleanup activities at MCAS Tustin and do not affect the deep regional aquifer from which water is pumped for agriculture and to supplement reclaimed water.

3.10.3 Groundwater Usage

Groundwater in the vicinity of the reuse plan area is pumped from the deeper regional aquifer. Six agricultural wells are located within a 3.5-mile radius of the center of MCAS Tustin. Of these wells, only one is located on the Air Station. This well is operated by Osumi Farms and is called OSUM-T (DON 1998b). The IRWD also has rights to well sites along Red Hill Avenue including four abandoned wells. In total, sixteen (16) abandoned well sites are located at MCAS Tustin (City of Tustin 1996b).

OSUM-T well is located in the south-central portion of MCAS Tustin (within the reuse plan area). Water pumped from this well is used for irrigation purposes only and supplements reclaimed water. Its pumping capacity is estimated to be 2,000 to 3,000 gallons per minute (DON 1998b). The bottom of the well is approximately 835 feet bgs. Water production from the well varies from year to year and has ranged from a high of approximately 956 AFY in 1991 to a low of approximately 680 AFY in 1996 (Orange County Water District 1999a).

Groundwater pumping in the Orange County Water Basin is not restricted. However, if any producer pumps more than 75 percent of that producer's average historical production, then the producer must pay an additional assessment on that water, which makes it equivalent in cost to the rate of importing the water. Thus, producers have a constraint to pump water over average historical production levels because water in excess of this amount costs them the same amount as imported water (Orange County Water District 1999b). During the 1996-97 water year (November 1 through October 31), approximately 330,000 AFY were pumped from the Orange County Water Basin.

3.10.4 Surface Water Quality

Surface drainage in the vicinity of the reuse plan area is controlled by the local topography and man-made drainage facilities. The site lies at the eastern edge of a broad costal plain that slopes gently south towards the Pacific Ocean. Three drainage channels, the Santa Ana-Santa Fe Channel, Peters Canyon Channel, and the Barranca Channel, are in and/or located adjacent to the site.

The Barranca Channel drains the reuse plan area as well as areas to the north and northwest of the Air Station and discharges into Peters Canyon Channel just to the south of the site. The Santa Ana-Santa Fe Channel drains areas to the north and northeast of the reuse plan area and flows into Peters Canyon Channel at the western corner of the Air Station. Peters Canyon Channel drains areas to the north, northeast and northwest in the County unincorporated area, cities of Tustin and Irvine, including the reuse plan area. This facility discharges into Lower San Diego Creek just south of the reuse plan area, which then empties into Upper Newport Bay and eventually the Pacific Ocean. Lower San Diego Creek and Newport Bay are contaminated from agricultural operations and urban development (County of Orange 1998a).

Stormwater naturally either penetrates the ground or enters surface water conduits, such as rivers and streams. Urban development reduces the amount of permeable surfaces available for water to penetrate into, thus increasing runoff. Urban stormwater runoff carries urban pollutants sucb as trash, grease, oils and other automobile fluids, dirt, sediment, construction debris, etc., in suspension. These pollutants can damage water quality in water bodies downstream from urban areas.

Lower San Diego Creek and Newport Bay

Surface body waters in the vicinity of the reuse plan area are located in the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). The SARWQCB is responsible for the protection of water quality within the Santa Ana watersbed, which includes the Barranca Cbannel, the Santa Ana-Santa Fe Channel, Peters Canyon Channel, San Diego Creek, and Newport Bay. The SARWQCB has prepared the *Water Quality Control Plan for the Santa Ana River Basin* (Basin Plan) (SARWQCB 1995). This document establishes water quality standards for all the ground and surface waters in the Santa Ana watershed pursuant to the California Water Code (§ 13000 et seq.) and the Clean Water Act.

The reuse plan area is located in the 154-square mile Newport Bay watershed, which is part of the greater Santa Ana River watershed. Surface waters in the reuse plan area eventually flow into Newport Bay via Peters Canyon Channel and San Diego Creek. The reuse plan area represents approximately 1.6 percent of the land area within the Newport Bay watershed.

The Basin Plan identifies water quality problems in the Newport Bay watershed. These water quality problems are identified as nonpoint source issues that fall into four major categories: siltation, bacterial contamination, eutrophication, and toxic substance contamination. Those four categories are further defined in the following text.

Siltation results from erosion in the watershed due to grading for development, channel erosion due to increased runoff from development, and erosion of agricultural land. This increased erosion is carried in suspension by surface waters and then deposited, leading to siltation, which is a problem in Newport Bay. Siltation in Newport Bay has been reduced by implementation of best management practices (BMPs) (see discussion below), resource conservation plans, grading ordinances, and direct dredging of the bay (SARWQCB 1995).

Bacterial contamination of coliform is carried by drainage channels into Newport Bay. This contamination has resulted in the closure of Upper Newport Bay to shellfish harvesting since 1978. Ships are prohibited from discharging sanitary wastes into the bay. There has been a reduction of bacterial concentrations in the Upper Bay in recent years (SARWQCB 1995).

Eutrophication occurs when seasonal algal blooms become more widespread and lasting due to nutrient loading (nitrates) of surface waters leading to Newport Bay. The principal source of these nutrients are from the irrigation of agricultural crops. The amount of nutrient loading can be reduced by controlling and/or treating runoff from agricultural operations. The amount of nitrates in Newport Bay has declined, but it is expected that eutrophication will be a problem for many years to come (SARWQCB 1995).

Toxic substance contamination occurs when toxic substances enter the watersbed through dumping or runoff and collect in certain areas. Studies have shown high levels of certain trace metals and organics in San Diego Creek and at certain locations within Newport Bay. Efforts to reduce erosion and control nutrient inputs also limit toxic substance contamination. Metal concentrations within the bay have been improving (SARWQCB 1995).

Lower San Diego Creek and Newport Bay are both deemed "impaired" and in need of improvements above and beyond current water quality conditions (Orange County 1998a). In order to improve water quality within these water bodies, the SARWQCB is in the process of implementing Total Maximum Daily Load (TMDL). TMDL studies will be prepared for the following categories: (1) sediment; (2) nutrients (e.g., fertilizers); (3) fecal-coliform (e.g., pathogens), and (4) toxics (e.g., pesticides). Of these, only the nutrient and sediment TMDLs have been prepared, adopted and incorporated into the Basin Plan. The fecal-coliform and toxics TMDLs are expected to be adopted by late 1999 or early 2000.

The TMDL for sediment (SARWQCB 1998a) provides a methodology to determine if sediment is accumulating in Newport Bay. It also requires that sediment control measures be implemented and maintained to comply with the following load allocations for discharges into Newport Bay from the watershed: no more than 28,000 tons per year of sediment from open space areas; no more than 19,000 tons per year from agricultural land; no more than 13,000 tons per year from construction sites, and no more than 2,500 tons per year from urban uses. The TMDL for sediment includes monitoring and reassessment measures to continue to decrease sediment loading into the system.

The TMDL for nutrients (SARWQCB 1998b) includes a variety of measures to reduce nutrients, and thus eutrophication, within the Newport Bay watershed. These measures require the preparation of nutrient management programs for agricultural operations, analysis of the appropriate BMPs within the watershed, reductions of phosphorous discharges, monitoring, and review/revision of these requirements. As part of these measures, total nitrogen loads are limited to 8.5 pounds per day from the San Diego Creek.

National Pollution Discharge Elimination System (NPDES)

Stormwater runoff is regulated under the National Pollutant Discharge Elimination System (NPDES). The NDPES stormwater permit provides a mechanism for monitoring the discharge of pollutants and for establishing appropriate controls to minimize the entrance of such pollutants into stormwater runoff. MCAS Tustin is permitted to discharge surface runoff under NPDES Permit No. CA0106607. The cities of Tustin and Irvine are co-permittees under the NPDES stormwater permit covering Orange County (NPDES No. CAS618030). As co-permittees, Tustin and Irvine require all development projects over five (5) acres in size within their jurisdiction to abide by the NPDES requirements for construction and operations as appropriate.

MCAS Tustin is in the process of completing environmental cleanup activities in response to past releases of hazardous substances, pollutants, contaminants, or hazardous solid wastes posing a threat to human health and the environment. The Marine Corps obtained a Groundwater Cleanup NPDES permit (NPDES Permit No. CAG918001, SABWQCB Order No. 96-18-067) to allow discharge of 150,000 gallons per day of treated groundwater from various investigation and remediation activities.

In compliance with NPDES permits, developers are typically required to implement BMPs to minimize the potential for construction activity to impact water quality. Additionally, a Storm Water Pollution Prevention Plan (SWPPP), which specifically spells out what BMPs are to be implemented, must also be acquired.

County of Orange Drainage Area Management Plan (DAMP)

The County of Orange has prepared a Drainage Area Master Plan (DAMP) (County of Orange 1999c). According to the DAMP, the County and cities within the County have been performing practices and procedures that protect the quality of stormwater runoff, such as monitoring to identify problems, implementing construction site and agriculture erosion and sediment control programs, implementing a watershed sediment control program on San Diego Creek and Upper Newport Bay, sweeping streets, managing solid waste, initiating recycling programs, maintaining storm drains and catch basins, enforcing prohibitions on illegal discharges, controlling spills, supervising industrial waste discharges through permitting, and enforcing ordinances prohibiting certain discharges. The DAMP provides the County and cities within the County guidance to improve storm water quality management practices, to address identified problems, and to implement new practices. It contains very specific BMPs to be implemented during construction in the design of structures, as well as non-structural measures regarding housekeeping and on-going maintenance to protect stormwater quality.

In order to implement the DAMP, the county and cities in the county have enacted regulations to improve water quality in the county. In the City of Tustin, a water quality management plan must be prepared and submitted to the city prior to the issuance of a grading or building permit for each development project.

3.11 HAZARDOUS WASTES, SUBSTANCES, AND MATERIALS

This section describes the existing conditions within the reuse plan area with regard to potential environmental contamination and debris on the site that may be sources of releases to the environment. The focus is the approximately 1,602-acre area under military control because military activities are the source of hazardous materials within the plan area. The four-acre privately owned parcel has heen used for agriculture in the past as is now undeveloped.

DON has identified all known areas of contamination on the Air Station and will implement appropriate response actions to protect human health and the environment. Information provided in this section is primarily from data presented in the *Draft Basewide Environmental Baseline Survey (EBS), Marine Corps Air Facility, Tustin, California* (DON 1998b) and the *Base Realignment and Closure Business Plan for Marine Corps Air Facility, Tustin, California* (DON 1999). One of the main objectives of the EBS for MCAS Tustin was to evaluate the environmental condition of the property to facilitate the property disposal process. The Business Plan serves as the most current update of the BRAC Cleanup Plan (BCP), and describes the status, management, response strategies, and action items for environmental restoration and compliance programs at MCAS Tustin. This section describes the known areas of contamination at MCAS Tustin and the on-going remediation efforts. Remediation will continue to be performed by DON after the property has been transferred.

3.11.1 Historic and Cnrrent Hazardous Material Use and Hazardous Waste Generation

Prior to 1942, when MCAS Tustin was commissioned as a DON LTA base, the property was privately owned and used for agriculture. From 1942 to 1949, hazardous materials were reportedly used in the construction of the base and helium purification for blimp use. MCAS Tustin was inactive from 1949 to 1951, and was reactivated for helicopter operations in 1951. Since that time, daily operation and support activities for helicopters have included the use, storage, transfer, and disposal of hazardous materials. Hazardous materials are used at MCAS Tustin during the routine maintenance of helicopters, ground support equipment, vehicle engines, and the sampling of engine fluids. These operations generate the majority of the wastes that include oil, solvents, jet fuel, hydraulic fluid, and rags and absorbent material contaminated with these substances. Other hazardous wastes that are generated to a lesser amount include paint, antifreeze, paint thinner, aerosol paint cans, asbestos, and sludge from the cleaning of tanks and fuel filters.

Waste transportation, treatment, and disposal are currently handled through various contractors under the direction of the Defense Reutilization and Marketing Office (DRMO) or the Energy/

Environmental Office. At present, the Air Station does not have any permanent treatment or disposal facilities other than the basic sanitary sewer system, oil/water separators, and less than 90-day hazardous waste storage facilities.

Current long-term waste storage activities at MCAS Tustin are conducted in accordance with a Resource Conservation and Recovery Act (RCRA) Part B Permit application approved by the California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC). The permit allows the storage of waste at three locations, however; these three facilities have been recently closed or inactivated with decommissioning activities.

3.11.2 Existing Regulatory Requirements

Hazardous materials and waste regulations are implemented by a number of government agencies including, but not limited to, U.S. Environmental Protection Agency (USEPA), the RWQCB, CalEPA, Orange County Health Department, and local fire departments. Each agency has established regulations regarding the proper transportation, handling, management, use, and disposal of hazardous materials ~~and hazardous waste~~ for specific operations and activities. Besides established regulations, other BMPs are utilized to minimize the amount of hazardous materials or reduce the hazard of a product's use. One example is integrated pest management methods that are in place for agricultural use on MCAS Tustin to reduce the amount and risk of pesticides.

All construction projects equal to or greater than five acres in size require an NPDES General Construction Stormwater Discharge Permit. As part of the permit, a SWPPP must be prepared to identify all material storage areas and construction vehicle/equipment staging areas and any other areas where hazardous materials are used and stored. The SWPPP must include BMPs to ensure that unauthorized discharges of hazardous material will not occur during construction.

3.11.3 Environmental Program Status

DON is in the process of planning and executing environmental restoration programs in response to releases of hazardous substances for MCAS Tustin. There are two major environmental programs: IRP and the Compliance Program. The IRP identifies, assesses, characterizes, and remediates or manages contamination from past hazardous waste disposal operations and hazardous material spills. The Compliance Program addresses solid and infectious waste management, surface water/groundwater discharge, hazardous materials/waste management, air emissions, storage tanks, oil/water separators, wash areas/grease racks, fuel line closure, well abandonment/destruction

activities, polychlorinated biphenyls (PCBs), asbestos-containing material (ACM), radon, and lead-based paint (LBP). A general overview of the IRP, status of key sites, overview of the Compliance Program, and highlight of programs of concern in property transfer is provided below.

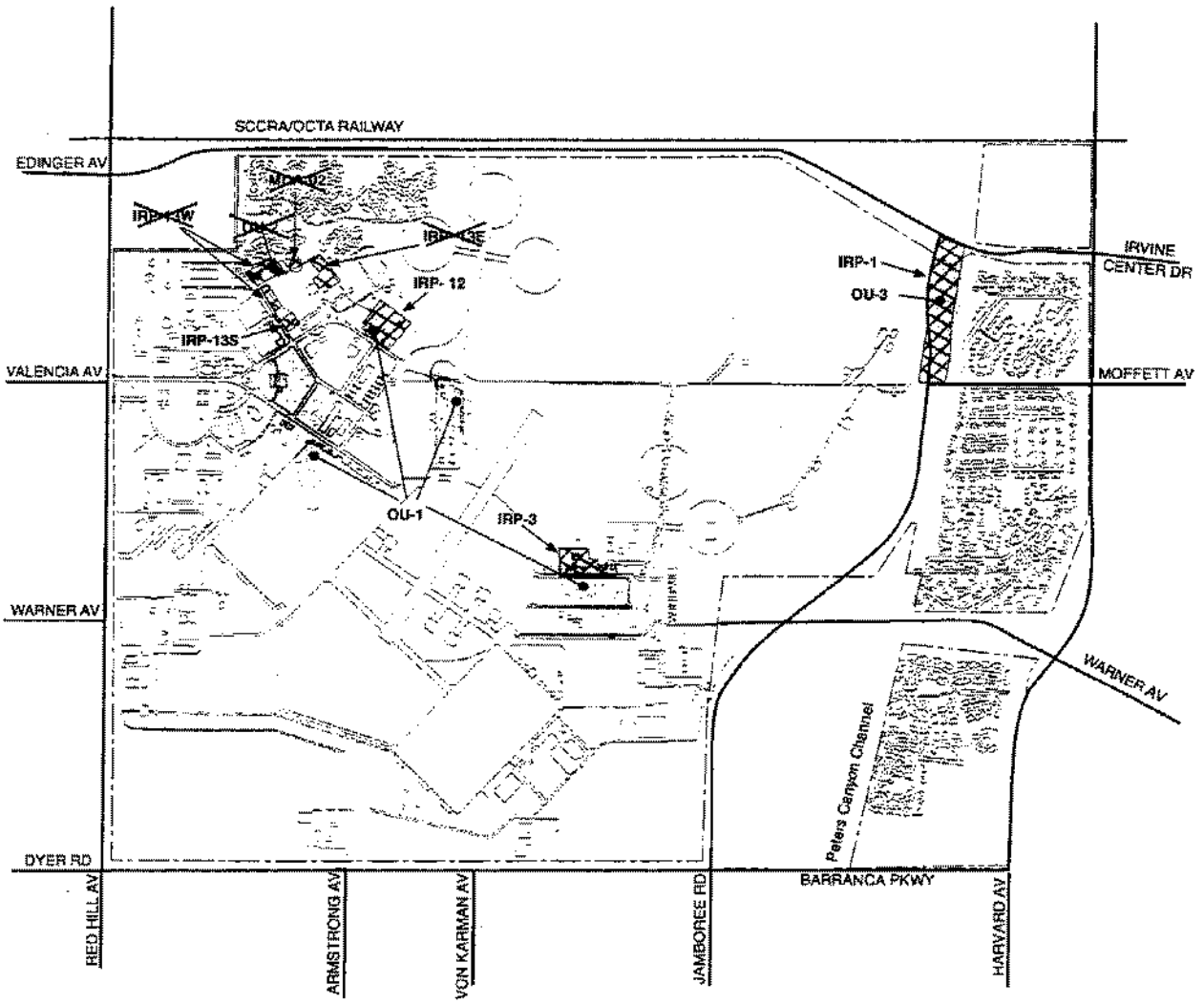
Installation Restoration Program (IRP)/Areas of Concern (AOCs)

The purpose of the IRP at MCAS Tustin is to evaluate the presence or absence of contamination that could pose a potential risk to human health or the environment; to characterize the nature and extent of contamination, if detected; and to implement appropriate response actions to remove the risk. All IRP sites at MCAS Tustin have been investigated, and comprehensive risk assessments have been conducted. Sixteen areas were initially identified as potential IRP sites (IRP-1 through IRP-16). Seven sites (IRP-1, IRP-3, IRP-5, IRP-7, IRP-12, IRP-13, and IRP-16) were identified as requiring a Remedial Investigation/Feasibility Study (RI/FS) under the IRP. Eight sites were identified for Expanded Site Inspections (IRP-2, IRP-4, IRP-6, IRP-8, IRP-9, IRP-10, IRP-11, and IRP-14). The remaining site (IRP-15), an alleged blimp-construction wood disposal area, was recommended for, and received, a No Further Action (NFA) determination since investigative findings and document searches indicate that the site did not exist.

At the time the EIS/EIR was distributed for public review, IRP-1, IRP-3, IRP-12, and IRP-13 were processing through the RI/FS process (Figure 3.11-1). IRP-2, IRP-5, IRP-6, IRP-8, IRP-9, and IRP-11 were either recommended for NFA or included in the operable units (OUs) described below. As a result of detecting primarily petroleum contaminants, IRP-7 and portions of IRP-16 were transferred out of the IRP and are now undergoing Petroleum Corrective Actions overseen by the SARWQCB. Three other sites, IRP-4, -10, and -14, were transferred out of the IRP and assessed as AOCs under the RCRA Facility Assessment Program.

A total of 15 AOCs have been recommended for NFA. These consist of possible disposal trenches areas (AD-04, MDA-02, MMS-05, MDA-04, and MDA-07), temporary storage units/areas (AS-06, AS-08, ST-67), aboveground storage tanks (AST-02, AST-04), collapsed sewer lines (DSS-01, DSS-02), spill areas (MMS-01), and former facilities that utilized hazardous substances (e.g., hobby shop and wash pad) (MMS-04, MWA-03), only MDA-02 is shown on Figure 3.11-1 because it was processing through the RI/FS process (DON 1999d).

To eliminate any imminent danger to the public and the environment, as well as to meet the LRA's need for cleanup of high-priority reuse parcels, the BRAC Cleanup Team (BCT) for MCAS Tustin designated investigation areas on the Air Station as OUs. An OU is defined as a discrete portion of



	REUSE PLAN AREA BOUNDARY
IRP SITE NO.	
1	MOFFETT TRENCHES AND CRASH CREW BURN PITS
3	PAINT STRIPPER DISPOSAL AREA
12	DRUM STORAGE AREA NO. 2
~~13E~~	~~DRUM STORAGE AREA NO. 3 EAST~~ (SEE NOTE)
13S	TEMPORARY STORAGE AREA 72 AND MISCELLANEOUS WASH AREA NO. 3 WEST
~~13W~~	~~DRUM STORAGE AREA NO. 3 WEST~~ (SEE NOTE)
MDA SITE AREA	
~~02~~	~~MISCELLANEOUS DISPOSAL AREA~~ (SEE NOTE)
OU SITE AREA	
OU-1	EXTENT OF GROUNDWATER REMEDIATION AREAS
~~OU-2~~	~~EXTENT OF KNOWN OR POTENTIAL SOIL REMEDIATION AREAS~~ (SEE NOTE)
OU-3	EXTENT OF SOIL AND GROUNDWATER CONTAMINATION AND HISTORIC DISPOSAL AREAS

NOTE:
IRP-13E, IRP-13W, OU-2, AND MDA-02 HAVE BEEN RECOMMENDED FOR NO FURTHER ACTION.

Source: DON 1998a and 1999d



Figure 3.11-1
IRP and MDA Sites of Concern and OUs

a remedial response that manages mitigation, or eliminates or mitigates a release, a threat of release, or a pathway of exposure. OUs allow the coordination and integration of remediation efforts to expedite cleanup and avoid duplication of effort. An OU may consist of any set of actions performed within a specified timeframe, or any set of actions performed at different specified locations within a site. Currently, there are ~~three~~ four OUs at MCAS Tustin. Subsequent to the distribution of the Draft EIS/EIR, OUs were reclassified (DON 1999d). OU-2 and OU-4 are listed below but consist only of sites recommended for NFA and are not shown in Figure 3.11-1. ~~Their l~~Locations of OU-1 and OU-3 are illustrated in Figure 3.11-1.

1. *OU-1.* This OU includes ~~Air Station-wide~~ groundwater plumes at IRP sites -3, -12, and -13 South. ~~as determined by investigation/sampling activities.~~

2. *OU-2.* This OU includes 12 soil investigation areas. Specifically, these include IRP-2, -5, -13E and nine AOCs. Each of these IRP sites and AOCs have been recommended for NFA.~~at IRP-3, -5, -12, -13, and -16 as part of the Remedial Investigation (RI) Program.~~

3. *OU-3.* This OU encompasses IRP-1, the inactive landfill at Moffett Trenches. Within OU-1 are three AOCs associated with the former landfill activities and crash crew burn pits that were operated in the area. Both soil and groundwater contamination areas were investigated as part of OU-1. ~~which includes areas of soil and groundwater contamination and disposal areas. OU-3 is isolated from other IRP sites and presents an opportunity for expedited transfer due to the planned reuse.~~

4. *OU-4.* This OU is a collection of 11 groundwater investigation areas where contaminants were present above Maximum Contaminant Levles (MCLs) set by regulatory standards. Specifically, OU-4 includes IRP-6, IRP-8, IRP-11, IRP-13W, IRP-16, and six AOCs. Each of these IRP sites and AOCs have been recommended for NFA.

~~Key~~ Selected Sites

As identified in the *Base Realignment and Closure Business Plan for Marine Corps Air Facility, Tustin, California* (DON 1999), ~~key~~ selected sites of concern that are progressing through the RI/FS process are outlined below (Figure 3.11-1).

IRP-1

IRP-1, known as the Moffett Trenches and Crash Crew Burn Pits, has been extensively investigated since 1983 and a number of remedial actions have occurred. This site consists of shallow landfill trenches and burn pits constructed for firefighter training. Municipal solid waste and industrial waste (including paints, oils, solvents, and perhaps PCB-containing transformers) were reportedly disposed of in the trenches. Flammable liquids burned in the burn pits consisted primarily of jet fuel, but also reportedly included oils, fuels, solvents, lacquers, primers, and various chemicals.

In the early 1980's, RWQCB required that much of the site be removed and backfilled with clean material. The remaining landfill is within the groundwater table, which slows the decomposition process and diminishes the amount of gas that may be released. Jamboree Road was widened and reconstructed and now covers approximately 90 percent of the site. Based on RI findings, the principal contaminants detected at IRP-1 were petroleum hydrocarbons from JP-5, volatile organic compounds (VOCs), semivolatile organic compounds, and to a lesser extent, metals. The majority of site-related contamination is in subsurface soil and groundwater in the first WBZ. Groundwater flows in a southwest direction toward Peters Canyon. Groundwater flow is slow enough that no appreciable amount of groundwater flows from the site; however, groundwater is tested quarterly to insure that it continues to meet RWQCB requirements. Estimated human health risks associated with residential use of the groundwater from the first WBZ are above the USEPA's acceptable excess cancer risk range at 10^{-4} to 10^{-6}. Institutional controls, such as deed restrictions and maintenance of the containment wall, ~~and~~ long-term groundwater monitoring and landfill gas monitoring have been identified as components of the preferred remedial action for the site and will become a component of the Remedial Design after the ROD is signed. Signature ~~Approval~~ of the ROD for OU-3 is anticipated by January 2000~~m 1999~~.

IRP-3

IRP-3, the Paint Stripper Disposal Area, operated from 1967 until recently. Several buildings at this site have been used for chemical storage, painting, and paint-stripping operations with four areas used for waste disposal. Solvents, paint stripper, and battery acids were reportedly poured directly onto the ground outside the painting and storage buildings. Trichloroethene (TCE) was found in both soil and groundwater during site investigations, with the likely sources of TCE contamination being inactive oil/water separators and past disposal or spills of TCE to the ground. Estimated health risks with residential exposure to soil were found to be within the USEPA's acceptable range of 10^{-4} to 10^{-6}. One VOC plume has been identified within the first WBZ at IRP-3, with a smaller VOC

plume identified in the second permeable WBZ. The plumes primarily consist of dissolved TCE with minor amounts of other chlorinated VOCs. Estimated human health risks associated with residential use of groundwater from the plume in the first WBZ are above the USEPA's acceptable limits of 10^{-4} to 10^{-6}. Modeling for groundwater indicates the VOC plumes will continue to migrate downgradient and off-site at concentrations above the maximum contaminant level for drinking water in both WBZs and that TCE in soil may act as a contributing source of groundwater contamination. The ~~Draft Final~~ RI Report recommends the development and evaluation of remedial alternatives in an FS currently being prepared. The FS considers remediation alternatives such as natural attenuation, hydraulic containment, groundwater extraction and treatment, and permeable reaction walls. A preferred remediation alternative has not yet been identified for this site.

IRP-12

IRP-12, known as Drum Storage Area No. 2, operated from the mid-1960s to 1975. IRP-12 contains three subareas where various solvents, crankcase oil, and hydraulic fluids are reported to have leaked from storage drums and containers. TCE was found in both soil and groundwater at this site, which likely was from past surface spills or leaky containers. Soil contamination exists to a depth of approximately 25 feet below ground surface and estimated health risks associated with residential exposure were found to be below the acceptable USEPA level of 10^{-4} to 10^{-6}. However, modeling shows that under pumping conditions, TCE in soil may act as a continuing source of groundwater contamination. Two VOC plumes have been identified in the first permeable WBZ and a much smaller VOC plume has been identified in the second permeable WBZ. The plumes consist primarily of dissolved TCE with trace amounts of other chlorinated VOCs. Estimated human health risks associated with residential use of groundwater from the first WBZ are greater than the USEPA acceptable level of 10^{-4}. There are no current groundwater receptors identified for this site. Groundwater monitoring indicates that VOC plumes will continue to move downgradient in the future and will mingle with the plumes of IRP-3. Remediation alternatives being considered include natural attenuation, hydraulic containment, groundwater extraction and treatment, permeable reaction walls, and vacuum-enhanced extraction and treatment. A preferred remediation alternative has not yet been identified for this site.

IRP-13

IRP-13, Drum Storage Area No. 3, is divided into three parts: IRP-13 East, IRP-13 West, and IRP-13 South. IRP-13 East and IRP-13 West are now recommended for NFA. A Technical Memorandum is anticipated by December 1999 that will more fully delineate the MTBE plume and determine to

what, if any, extent it is commingled with the IRP-13 South plume. The MTBE plume is also known as Site 222; it is currently considered a separate cleanup project.

IRP-13 East consists of a large stained area where drums of chemicals were historically stored, including hydraulic fluid, diesel fuel, leaded gasoline, oil, paint strippers, battery acids, and solvents. IRP-13 West consists of two past disposal areas. Materials similar to those stored at IRP-13 East were disposed of onto the soil in one of the IRP-13 West areas and the second IRP-13 West area was used for disposal of solvent-contaminated washwater from floor cleaning activities.

Petroleum hydrocarbons, selected metals, and polynuclear aromatic hydrocarbons (PAHs) were found in soils at both IRP-13 East and IRP-13 West. TCE was also found in soils and groundwater at IRP-13 West. No chemicals of potential concern were identified in groundwater at IRP-13 East. The risks posed by chemicals detected in soil at IRP-13 West were determined to be within the acceptable USEPA risk range of 10^{-4} to 10^{-6} for residential use, and the Draft Final RI Report recommends NFA in these portions of IRP-13. However, the risk posed by chemicals in the soil at IRP-13 West was estimated to be above the acceptable USEPA risk range for residential use. Therefore, a soil removal action was recommended for this site and soil removal and site restoration activities at IRP-13 West were completed in 1997.

The IRP-13 South site consists of two areas: Temporary Storage Area (ST)-72 and Miscellaneous Wasb Area (MWA)-18. TCE and 1,2,3-trichloropropane (TCP) were found in both soil and groundwater at this site. ST-72 has been identified as the source of an extensive 1,2,3-TCP plume and MWA-18 as the source of a large TCE plume. A large VOC plume has been identified in the first WBZ bencath IRP-13 South and a smaller VOC plume has been identified in the second permeable WBZ. Seasonal downward migration of 1,2,3-TCP from the second WBZ into the third WBZ has also occurred through a localized stratigraphic discontinuity. The plumes at IRP-13 South consist primarily of dissolved TCP and TCE with trace amounts of chlorinated VOCs. Estimated human health risks associated with residential use of groundwater from the first WBZ are above the USEPA acceptable level of 10^{-4}. There are no current groundwater receptors identified. Groundwater modeling indicates the VOC plumes will continue to migrate downgradient and off-site at elevated concentration in both the first and second WBZs. Consequently the Draft Final RI Report recommends the development and evaluation of remedial alternatives such as monitored natural attenuation, hydraulic containment, groundwater extraction and treatment, permeable reaction walls, and vacuum enhanced extraction and treatment. A preferred remediation alternative has not yet been identified for the site.

A gasoline additive, methyl ter-butyl ether (MTBE), was also detected in several IRP-13 South wells during the post-RI groundwater monitoring. The source of the MTBE plume was identified as the former service station located northwest of IRP-13 South. The extent of the MTBE plume is being determined by ongoing investigation. Results of the investigation may impact the evaluation of remedial alternatives for IRP-13 South if the MTBE plume mingles with the 1,2,3-TCP plume at IRP-13 South.

Miscellaneous Disposal Area (MDA)-02

MDA-02 is located in the northern portion of MCAS Tustin south of Copeland Street. MDA-02 is located at Building 19, which was the Station Armory from the 1950s until it was replaced in 1990. Weapons were reportedly cleaned regularly outside the building. This site had possible releases of chemicals associated with armory activities such as solvents, lubricants, and waste oils. Soil sampling at MDA-02 revealed VOCs, PAHs, and one PCB reading. Concentrations of two metals (barium and mercury) in the soil exceeded background concentrations. No metals in groundwater exceeded background concentrations. VOCs were reported in the groundwater and TCE was also reported in the soil. Sampling showed that TCE in groundwater was limited to the immediate vicinity of MDA-02 and downgradient. In October 1999, this AOC became part of OU-4. This site has been recommended for NFA. ~~Additional characterization is being performed for MDA-02 and it is expected that the site will be included in the upcoming No Action Remedial Action Plan/ ROD.~~

~~It originally was intended by DON to have all remedial actions in place and their success of operation demonstrated to the regulatory agencies by July 1999. Based on additional characterization, the forecast for demonstrating the remedy at OU-3 and OU-1 is April 2000 and August 2002, respectively. Except for groundwater remediation, all remedial activities will be in place by the end of 1999.~~

3.11.4 Compliance Programs

As listed above under Section 3.11.3, numerous compliance programs are currently in place to ensure that waste management practices are conducted in a manner that protects human health and the environment. It should be noted that many of the compliance programs allow for on-going clean-up after the Air Station has been transferred. Key programs which may be of concern in the transfer of the property are highlighted below.

Storage Tanks

A total of ~~149~~ 150 storage tanks have been identified at MCAS Tustin, and include ~~124~~ 125 USTs and 25 ASTs. Of the ~~124~~ 125 USTs, all but one ~~4 are inactive and have not been removed and 120~~ have been removed. ~~Two sets of USTs (USTs 105A, B, C, D, E, F and USTs 222A, B, C, D, G, H, and I) have been removed and remedial activities have occurred. Future work at these sites will include in-site and ex-site treatment of groundwater. UST 29A and UST 90 have been removed but are located within IRP Sites. Future work will be conducted under the CERCLA program. The remaining USTs (105) are recommended for no further action or have received no further action letters from the Regional Water Quality Control Board (RWQCB).~~

Of the 25 ASTs, one is inactive, one active and will be transferred in place, and the remaining 23 are recommended for no further action or have received no further action letters from the RWQCB.

It is anticipated that during closure activities, former UST locations may require soil excavation and treatment due to potential contamination. Subsequent to soil excavation and treatment activities, various UST locations may have residual concentrations of fuel in the groundwater that exceed action levels. In this instance, the groundwater will be characterized and treated by DON ~~when a UST is pulled~~ by using appropriate technology that may include air sparging, extraction, and natural attenuation.

Fuel Line Closure

A fuel line serves MCAS Tustin from a connection to the eight-inch Norwalk fuel line (JP-5) located along Irvine Boulevard north of the Air Station. This connection is known as the "Tustin Spur." The Tustin Spur is a six-inch steel pipe that extends from the intersection of Irvine Boulevard and Browning Avenue, where the pipe continues southwest within the Browning Avenue right-of-way. The line turns southeast on Walnut Avenue, then southwest along an existing drainage channel near Alder Lane, and extends to MCAS Tustin. The six-inch line terminates between the northern blimp hangar and mooring mat 1. A four-inch fuel line extends from that location, through the northwestern half of the Air Station, and terminates at the former IRP-7 South site. The four-inch line on the Air Station and the Tustin Spur were emptied of fuel and debris, filled with grout, capped off, and closed in place in 1998. A Fuel Pipeline Closure Report for the fuel line was submitted to the California Fire Marshall in January 1999. According to the California Fire Marshal's Office, soil sampling beneath the pipeline was not required due to extensive pressure testing which did not indicate leaking along the Tustin Spur or the four-inch line on the Air Station.

Polychlorinated Biphenyl (PCB)

An inventory of items and equipment other than transformers and fluorescent light fixtures was conducted at MCAS Tustin. Seventeen oil-filled cut-out switch sets were discovered to contain dielectric fluid. Sixteen of the sets were replaced with dry switches and the other set of switches was not tested for PCBs because it was adjacent to an off-station privately owned well. A separate PCB study for transformers was also performed. Eight transformers were found to contain in excess of 50 parts per million (ppm) of PCBs, and were replaced in 1997. The PCB-containing transformers were disposed of by DRMO.

Asbestos-containing Material (ACM)

DON's policy on asbestos management is to conduct abatement or maintenance as necessary to protect human health and the environment, and to comply with all federal, state, and local laws and regulation governing ACM. Asbestos surveys performed at MCAS Tustin revealed that 77 buildings are known to contain ACM. All buildings known to contain ACM must be disclosed at the time of transfer. If an ACM is known to be damaged, it will be abated in accordance with proper asbestos removal procedures prior to transfer. If the property is transferred, future management of ACM would be the responsibility of the transferee, who would be required to manage the ACM in accordance with applicable laws and regulations. Any ACM removal or remediation due to renovation or demolition after base closure would be the responsibility of the transferee.

Lead-based Paint (LBP)

It is the policy of DON to manage LBP in a manner that protects human health and the environment, and to comply with all applicable federal, state, and local regulations that govern LBP. Housing constructed at MCAS Tustin before 1978 will be inspected by DON for LBP and LBP hazards. Housing constructed prior to 1960 must meet the same inspection criteria outlined for housing constructed after 1960; however, any hazards identified in the pre-1960s housing must be abated prior to transfer. The results of the LBP surveys, a lead hazard information packet, and a lead warning statement will be provided to the prospective purchaser or transferee of the property.

Non-residential buildings built or maintained before 1980 are assumed by DON to contain LBP. LBP in non-residential buildings would be maintained and transferred in good condition, but would not be abated prior to transfer.

3.11.5 Other Concerns

One other hazardous substances of concern that is not part of an IRP or Compliance Program is pesticide use at agricultural areas on the Air Station. A pesticide investigation for agricultural areas revealed that pesticides in the soil are at levels below or within the statistical range calculated for other similar use areas at MCAS Tustin. As a result, the BCT agreed with the regulatory agencies (USEPA, DTSC, and RWQCB) that residual levels of pesticides in the soil do not constitute a threat to human health or the environment.

3.12 TRAFFIC/CIRCULATION

The principal resource for the preparation of the Traffic/Circulation section of this EIS/EIR is the *Marine Corps Air Station (MCAS) Tustin Disposal and Reuse Traffic Study* (Austin-Foust 1999), which is included as Appendix F to this EIS/EIR (bound separately).

3.12.1 Study Area

The study area used in this analysis, shown in Figure 3.12-1, includes most of the City of Tustin and portions of the City of Irvine, City of Santa Ana, City of Newport Beach, and the unincorporated County of Orange. This area was established as being the sphere of impact of the proposed project. The study area boundary has been the subject of discussions and agreements with the adjacent cities of Irvine and Santa Ana. The general criteria used in establishing the study area are based on including those roadways which would show differences in traffic volume between baseline and proposed alternative conditions of more than 1,000 vehicles per day, average daily traffic (ADT). This is a criterion that has been used by the County of Orange in transportation studies and has been accepted as a general guideline for establishing an appropriate study area for impact analysis purposes. Within this study area, all major intersections are analyzed. In addition, four intersections west of the study area (Bristol Street at MacArthur Boulevard, Segerstrom Avenue, Warner Avenue and Edinger Avenue) were analyzed in response to requests by the City of Santa Ana to identify potential project impacts at these specific locations.

Irvine Business Complex (IBC)

The study area includes the IBC, an area noted separately because standards for traffic performance within the IBC are different than in other parts of the study area. The IBC Rezoning Mitigation Program includes ongoing short- and long-term improvements to roadways within the IBC.

3.12.2 Roadway Network

Regional and Local Access

Three freeways provide regional accessibility to the site: I-5, known as the Santa Ana Freeway, to the northeast; SR-55, the Newport-Costa Mesa Freeway, to the northwest; and I-405, San Diego Freeway, to the southwest. The west leg of the ETC, also known as SR-261, is located northeast of the site in the vicinity of Jamboree Road and Edinger Avenue, and provides regional access. Local

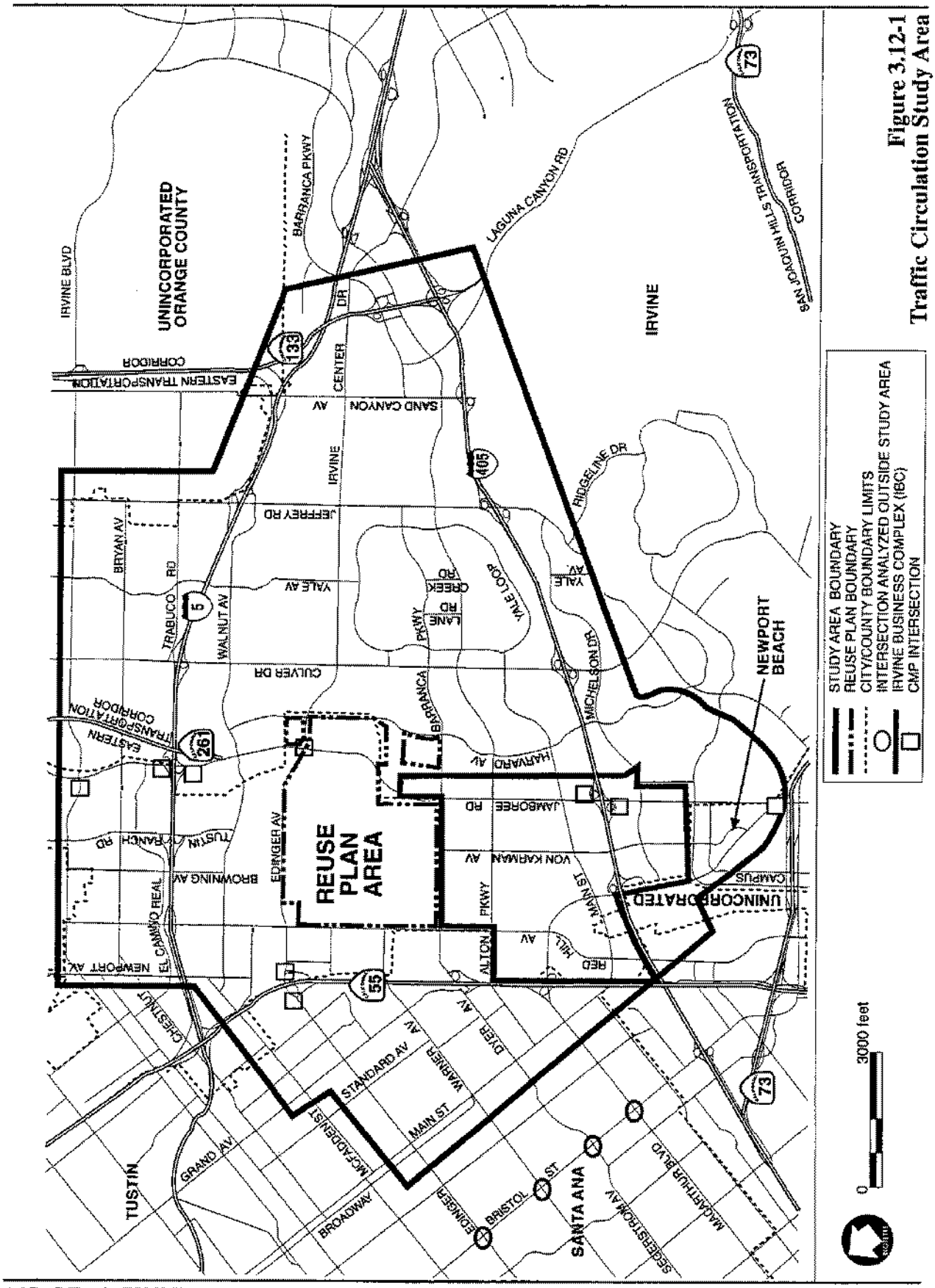


Figure 3.12-1
Traffic Circulation Study Area

access to the Air Station portion of the project site is currently via two gates, one off Red Hill Avenue at Valencia Avenue/Moffett Drive, and the other off Harvard Avenue at Moffett Drive. The detached southern portion of the site has access to Harvard Avenue via Marble Mountain Road, a local roadway.

Congestion Management Program (CMP) Intersections

The CMP is a state program mandated by Proposition 111, passed in 1990. CMP requires that designated intersections throughout Orange County maintain a specified level of service (LOS), and standards for traffic performance at CMP intersections are different than in other parts of the study area. Locally, CMP is administered by the OCTA. There are nine designated CMP intersections in the study area:

- Jamboree Road and Irvine Boulevard
- Jamboree Road and I-5 northbound ramps
- Jamboree Road and I-5 southbound ramps
- SR-55 northbound ramps and Edinger Avenue
- SR-55 southbound ramps and Edinger Avenue
- Jamboree Road and Edinger Avenue
- Jamboree Road and I-405 northbound ramps
- Jamboree Road and I-405 southbound ramps
- MacArthur Boulevard and Jamboree Road

Freeways are a part of the CMP system, administered by Caltrans.

Reuse Area

The existing roadway network within MCAS Tustin is shown in Figure 3.12-2.

3.12.3 Roadway Performance Criteria

Level of Service

Traffic conditions are commonly expressed in terms of the LOS of an intersection or road segment. LOS are designated "A" through "F," with LOS "A" representing free flow conditions and LOS "F"representing severe traffic congestion. Table 3.12-1 defines LOS for signalized intersections in

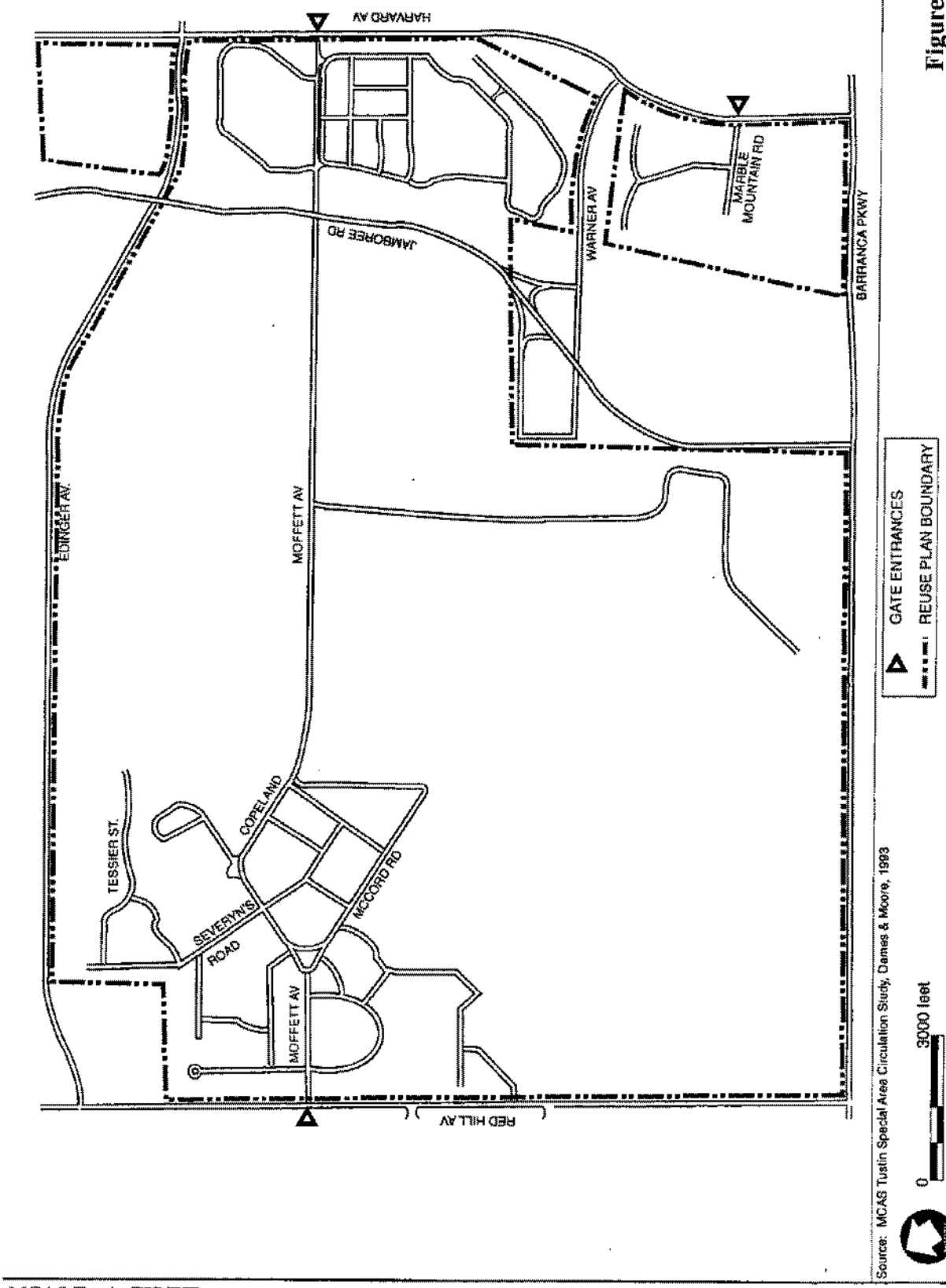


Figure 3.12-2
Existing (1997-1998)
MCAS Tustin Roadway Network

terms of the intersection capacity utilization (ICU). The ICU value is a summation of the volume-to-capacity (v/c) ratio for each of the critical movements of an intersection.

Table 3.12-1
Level of Service Definitions for Signalized Intersections

LOS	Interpretation	ICU Value
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0 to 0.60
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.61 to 0.70
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.71 to 0.80
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.81 to 0.90
E	Poor operation. Some long-standing vehicular queues develop on critical approaches. Delays may be up to several minutes.	0.91 to 1.00
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Over 1.00

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 1985 and Interim Materials on Highway Capacity, NCHRP Circular 212, 1982.

Performance Criteria

Various operating LOS standards have been established in Orange County which serve as guidelines for evaluating observed traffic conditions and as targets or goals when evaluating future development plans and circulation system modifications. The performance criteria used in the traffic analyses for this EIS/EIR are based on peak hour volumes and are summarized in Table 3.12-2. The table includes a criterion for mid-block lane capacity, which is analyzed to satisfy the City of Irvine's requirement for peak hour link analysis. While the principal analyses are on intersection performance, the mid-block lane analysis is used to verify consistency of results.

Table 3.12-2
Performance Standards for Signalized Intersections and Freeway Ramps

Roadway Element	Acceptable performance LOS (or better)	Acceptable Performance V/C or ICU
CMP intersection	E	≤1.00
IBC intersection	E	≤1.00
CMP freeway ramp intersections	E	≤1.00
All other intersections	D	≤0.90
Mid-block lanes	D	≤0.90

3.12.4 Existing Traffic Conditions

Existing traffic conditions described in this EIS/EIR are for the late 1997/early 1998 time period, which is when the most recent traffic count data were collected for use in the EIS/EIR. At that time, the western and eastern legs of the ETC had not opened, and the traffic count data used for existing conditions descriptions and analyses does not reflect the opening of these facilities. Figure 3.12-3 shows the existing (1997/1998) roadway system. The roadways included are those designated in the County of Orange Master Plan of Arterial Highways (MPAH) (or in individual city Circulation Elements in cases where they differ from the MPAH), which were in existence in 1997. Existing traffic volumes are included in Appendix F.

To determine peak hour operating conditions on the study area circulation system, existing AM and PM peak hour turn movement counts were obtained for all major intersections. ICU values were calculated using these peak hour counts in combination with the geometric lane configurations of each location. Under existing conditions, ten intersections were found not to meet the acceptable performance criteria. These intersections are listed in Table 3.12-3 and shown in Figure 3.12-3.

3.12.5 Future Roadways

Project impacts are examined in Chapter 4 in two future time frames. The project buildout is forecast for 2020, and an interim analysis is set at 2005. The year 2020 analysis is based on the "committed" roadway network, which includes those roadway improvements that are ~~planned for~~

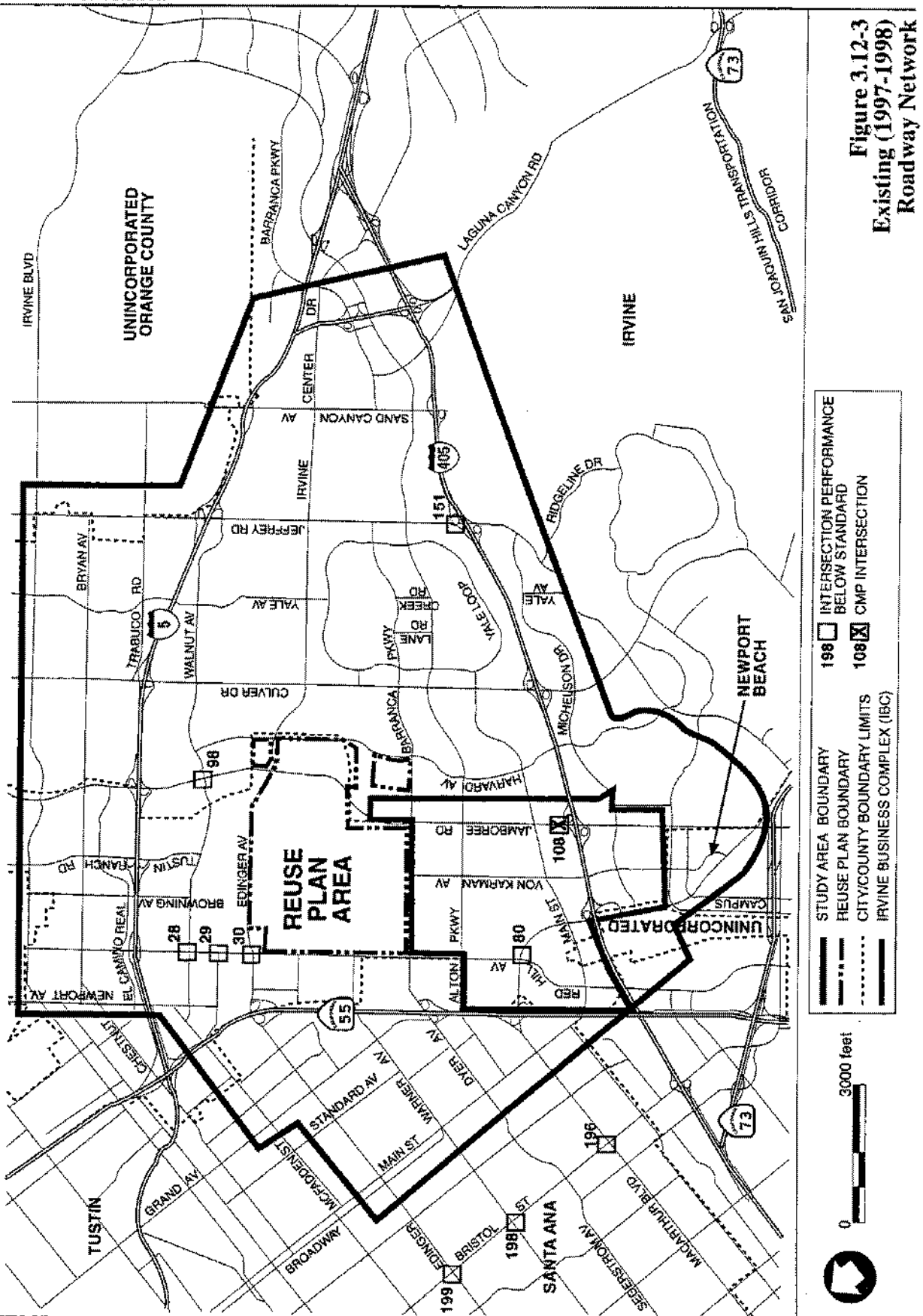


Figure 3.12-3
Existing (1997-1998) Roadway Network

9902 MCAS Tustin EIS/EIR\Figures\Fig 3.12-3 Roadway Network 6/7/99

Table 3.12-3
Existing Intersection Deficiencies

Location		Peak Hour	ICU	LOS
Tustin				
28	Red Hill and Walnut[1]	AM	.97	E
29	Red Hill and Sycamore[1]	AM	.94	E
30	Red Hill and Edinger[1]	PM	1.00	E
Santa Ana				
196	Bristol and MacArthur	PM	.93	E
198	Bristol and Warner	PM	.91	E
199	Bristol and Edinger	AM	1.13	F
		PM	.98	E
Irvine				
80	Red Hill and MacArthur[2]	PM	1.01	F
98	Jamboree (southbound) and Walnut	AM	.93	E
108	Jamboree and I-405 northbound ramps[3]	AM	1.21	F
		PM	1.06	F
151	Jeffrey and I-405 northbound ramps	AM	.91	E

[1] TSIA intersection
[2] IBC intersection
[3] CMP monitored intersection

~~funding in a manner such as a~~ "probable projects" per CEQA (§ 15130). Such probable future projects include roadway projects that are in capital improvement programs of a jurisdiction, ~~a special funding program,~~ or conditions of approval ~~on specific~~ of a specific projects, or required mitigation measures in a previous environmental document, or projects included in a specific fee program. The network thereby represents a set of improvements that are expected to be in place by 2020. Figure 3.12-4 illustrates the committed roadway network in and around the study area.

Table 3.12-4 lists the specific improvements, with the basis for their inclusion in the committed network. The facts supporting the committed roadway network assumptions were reviewed following distribution of the Draft EIS/EIR. The corrected committed roadway network is described in this section. Several improvements outside the study area are included in Figure 3.12-4 because major roadways outside the study area are included in the traffic model, and the committed improvements to these segments will influence the traffic distribution.

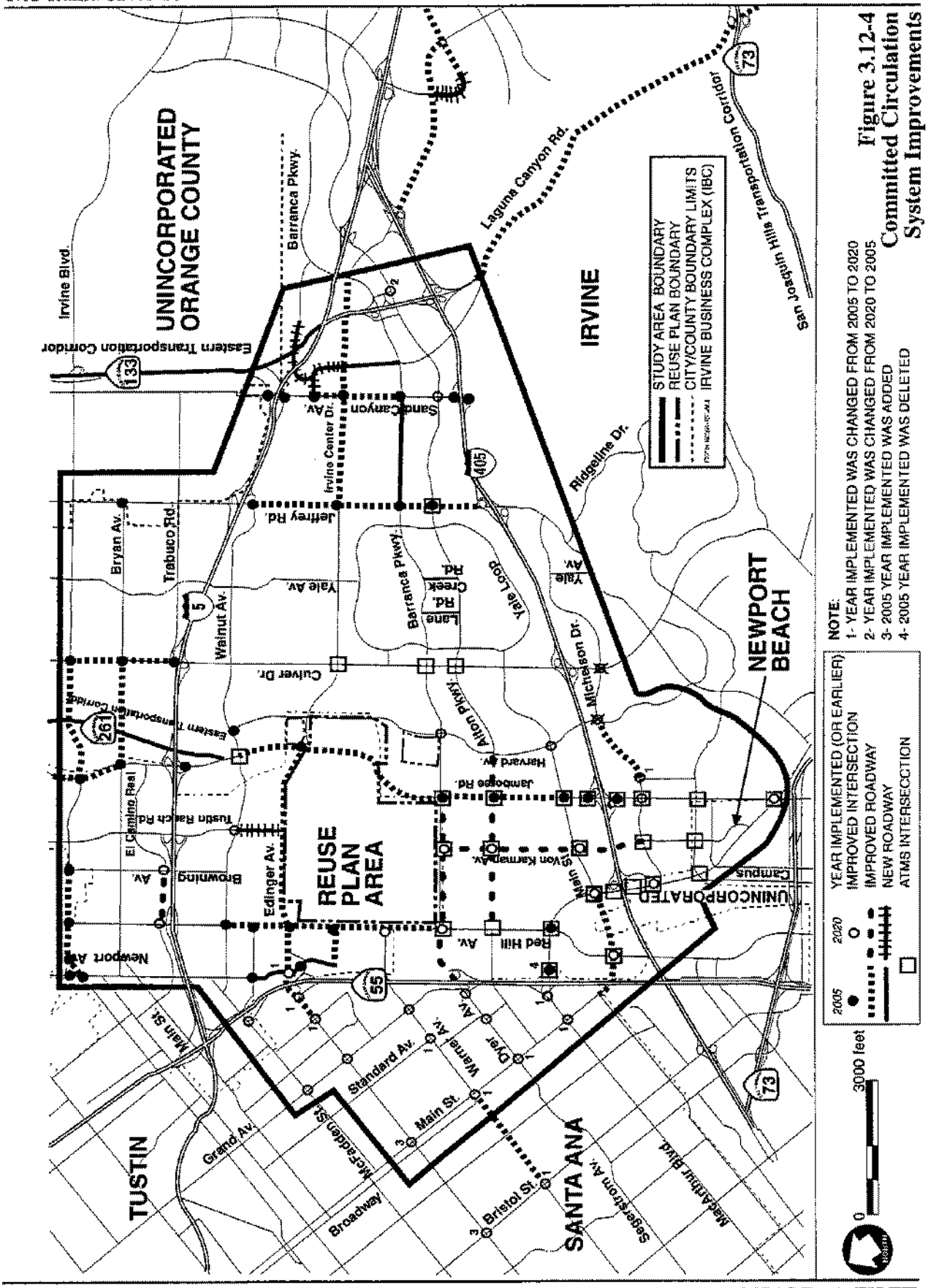


Figure 3.12-4
Committed Circulation System Improvements

Table 3.12-4
Roadway System Committed Improvements

Facility	Limits	Jurisdiction	Improvement	Source	Year
FREEWAY/TRANSPORTATION CORRIDOR IMPROVEMENTS					
Eastern Transportation Corridor (ETC) East Leg	SR-91 to ETC West Leg	Anaheim/TCA	Construct as tollway with six multi-purpose lanes	1	2005
ETC East Leg	ETC West Leg to I-5	TCA	Construct as tollway with six multi-purpose lanes and with an interchange at Irvine Blvd	1	2005
ETC West Leg	ETC East Leg to Walnut Ave	Irvine/TCA	Construct as tollway with six multi-purpose lanes and with interchanges at Portola Pkwy and Irvine Blvd	1	2005
Foothill Transportation Corridor (FTC)	Portola Pkwy to ETC East Leg	TCA	Construct as tollway with six multi-purpose lanes and with an interchange at Portola Pkwy	1	2005
FTC	Antonio Pkwy to Oso Pkwy	TCA	Construct as tollway with six multi-purpose lanes	1	2005
FTC South	Oso Pkwy to I-5 Fwy	TCA	Construct as tollway with six multi-purpose lanes	2	2020
ARTERIAL IMPROVEMENTS	**Note: many intersection improvements are included as part of the arterial improvements; please see individual improvement descriptions.**				
Alton Pkwy	Red Hill Ave to Harvard Ave	Irvine	Improve to six lanes including associated improvements at the Von Karman Ave Intersection	3	2020
Bake Pkwy	Irvine Center Dr to Lake Forest Dr	Irvine	Construct as six-lane major arterial	9	2020
Barranca Pkwy	Red Hill Ave to Jamboree Rd	Irvine	Improve to eight lanes including associated improvements at the Von Karman Ave intersection	3	2020
Barranca Pkwy	Jeffrey Rd to Sand Cyn Ave	Irvine	Construct as four-lane primary arterial including associated improvements at the Jeffrey Rd and Sand Cyn Ave intersections.	5	2005
Bison Ave	SR-73 to California Ave	Irvine	Construct as four-lane arterial	1	2005
Bryan Ave	Jamboree Rd to Culver Dr	Irvine	Improve to four lanes including associated improvements at the Culver Dr intersection	1	2005
Culver Dr	north of Irvine Blvd to I-5	Irvine	Improve to six lanes including associated improvements at the Irvine Blvd, Bryan Ave, and I-5 ramp intersections	1	2005
Culver Dr	north of Irvine Blvd to Portola Pkwy	Irvine	Construct as six-lane major arterial	1	2005
Dyer Rd	SR-55 to Red Hill Ave	Irvine/Santa Ana	Improve to eight lanes including associated improvements at the Red Hill Ave and Pullman St intersections	3	2020
Edinger Ave	Lyon St to east of Red Hill Ave	Santa Ana/Tustin	Improve to six lanes including associated improvements at the Red Hill Ave and SR-55 ramp intersections	2,4,6	2005
Edinger Ave	east of Red Hill Ave to Jamboree Rd	Tustin	Improve to six lanes	2,12	2005
El Camino Real	Red Hill Ave to Browning Ave	Tustin	Improve to four lanes including associated improvements at the Red Hill Ave and Browning Ave intersections	7,12	2020
Irvine Ave	Bristol St to University Dr	Newport Beach/ Orange County	Improve to six lanes including associated improvements at the Mesa Dr and University Dr intersections	2	2005

Table 3.12-4. Continued

Facility	Limits	Jurisdiction	Improvement	Source	Year
Irvine Blvd	Newport Ave to Browning Ave	Tustin/Orange County	Improve to six lanes including associated improvements at the Newport Ave, Red Hill Ave, and Browning Ave intersections	2,7	2005
Irvine Blvd	Jamboree Rd to Culver Dr	Irvine	Improve to six lanes including associated improvements at the Jamboree Rd and Culver Dr intersections	1	2005
Irvine Center Dr	Jeffrey Rd to Sand Cyn Ave	Irvine	Improve to six lanes including associated improvements at the Sand Cyn Ave intersection	5	2005
Irvine Center Dr	Sand Cyn Ave to Barranca Pkwy	Irvine	Improve to six lanes including associated improvements at the Sand Cyn Ave intersection	1	2005
Irvine Center Dr	I-405 to Lake Forest Dr	Irvine	Improve to six lanes including associated improvements at the Bake Pkwy, Lake Forest Dr, and I-405 ramp intersections	9	2005
Jamboree Rd	Irvine Blvd to Tustin Ranch Rd	Tustin	Improve to six lanes including associated improvements at the Tustin Ranch Rd, Portola Pkwy, and Irvine Blvd intersections	7	2005
Jamboree Rd	Bryan Ave to Irvine Blvd	Tustin	Improve to eight lanes including associated improvements at the Bryan Ave intersection	7	2005
Jamboree Rd	Walnut Ave to Barranca Pkwy	Irvine/Tustin	Improve to eight-lane thoroughfare with an urban interchange at Edinger Ave and associated improvements at the Barranca Pkwy intersection[6]	1,2,15	2005
Jamboree Rd	Barranca Pkwy to Main St	Irvine	Improve to eight lanes including associated improvements at the Barranca Pkwy and Main St intersections	1,15	2005
Jeffrey Rd	I-5 to I-405	Irvine	Improve to six lanes including associated improvements at the Walnut Ave, Irvine Center Dr, Barranca Pkwy and Alton Pkwy intersections	5	2005
Laguna Cyn Rd	Sand Cyn Ave to Irvine Center Dr	Irvine	Construct as four-lane primary arterial	8	2010
Laguna Cyn Rd	Irvine Center Dr to Barranca Pkwy	Irvine	Construct as four-lane primary arterial	8	2005
Laguna Cyn Rd	I-405 to El Toro Rd	Irvine/ Orange County	Improve to four lanes	2	2005
Lake Forest Dr	I-5 to west of Moulton Pkwy	Irvine/ Laguna Hills	Improve to six lanes including associated improvements at the Irvine Center Dr/Moulton Pkwy intersection	9	2005
Lake Forest Dr	west of Moulton Pkwy to Bake Pkwy	Irvine	Construct as six-lane major arterial	9	2020
Main St	Sunflower Ave to MacArthur Blvd	Irvine	Improve to six lanes	1	2005
Michelson Dr	Carlson Ave to Harvard Ave	Irvine	Improve to four lanes including associated improvements at the Carlson Ave intersection	1	2005

Table 3.12-4. Continued

Facility	Limits	Jurisdiction	Improvement	Source	Year
Newport Ave	Sycamore Ave to Valencia Ave	Tustin	Construct as six-lane major arterial and relocate SR–55 northbound ramps to south of Edinger Ave including the associated improvements at the Sycamore Ave and Edinger Ave intersections	6	2005
Portola Pkwy	Jamboree Rd to ETC	Irvine/ Orange County	Construct as six-lane major arterial	1	2005
Portola Pkwy	ETC to Culver Dr	Irvine/ Orange County	Construct as two-lane arterial	7	2005
Portola Pkwy	Culver Dr to Jeffrey Rd	Irvine/ Orange County	Construct as two-lane arterial	10	2005
Red Hill Ave	Walnut Ave to Valencia Ave	Tustin	Improve to six lanes including associated improvements at the Walnut Ave, Sycamore Ave, Edinger Ave, and Valencia Ave intersections	2,4,12	2005
Red Hill Ave	Valencia Ave to Dyer Rd/Barranca Pkwy	Tustin/Santa Ana	Improve to eight lanes including associated improvements at Valencia Ave, Warner Ave, and Carnegie Ave intersections	3	2020
Sand Cyn Ave	Oak Cyn Rd to Barranca Pkwy	Irvine	Improve to six lanes including associated improvements at the Oak Cyn Rd, Irvine Center Dr, and Barranca Pkwy intersections	5	2005
Technology Dr	west of Barranca Pkwy to Laguna Cyn Rd	Irvine	Construct as four-lane arterial	8	2020
Tustin Ranch Rd	Walnut Ave to Edinger Ave	Tustin	Construct as six-lane major arterial including a grade-separated interchange at Edinger Avenue and the associated improvements at the Walnut Ave intersection	12	2020
Valencia Ave	Newport Ave to Red Hill Ave	Tustin	Improve to four lanes including associated improvements at the Red Hill Ave intersection	6,12	2005
Von Karman Ave	Barranca Pkwy to Michelson Dr	Irvine	Improve to six lanes including associated improvements at the Barranca Pkwy, Alton Pkwy, and Main St intersections	3	2020
Walnut Ave	Jamboree Rd to Harvard Ave	Irvine	Improve to six lanes including associated improvements at the Harvard Ave intersection	1	2005
~~Walnut~~ Warner Ave	Bristol St to Main St	Santa Ana	Improve to six lanes including associated improvements at the Bristol St and Main St intersections	14	~~2005~~ 2020
INTERSECTION IMPROVEMENTS WITHIN STUDY AREA			**Note: Additional intersection improvements are included in the arterial improvement projects described above.**		
Culver Dr	at Irvine Center Dr	Irvine	ATMS	13	2005
Culver Dr	at Barranca Pkwy	Irvine	ATMS	13	2005
Culver Dr	at Alton Pkwy	Irvine	ATMS	13	2005

Table 3.12-4. Continued

Facility	Limits	Jurisdiction	Improvement	Source	Year
Jamboree southbound ramps	at Walnut Ave	Irvine	ATMS	13	2005
Jeffrey Rd	at Alton Pkwy	Irvine	ATMS	13	2005

TCA - Transportation Corridor Agencies

Source column:

1. Under construction or recently completed
2. Included in the OCTA Regional Transportation Improvement Program or Combined Transportation Improvement Funding Program
3. Implemented through the Irvine Business Complex (IBC) Rezoning Mitigation Program
4. Implemented through the Tustin/Santa Ana Improvement Agreement (TSIA)
5. Conditioned for implementation with development of Irvine Planning Area 12 (PA12)
6. Conditioned for implementation with development of Pacific Center East
7. Conditioned for implementation with development of Lower Peters Canyon
8. Conditioned for implementation with development of Irvine Planning Area 31 (PA31)
9. Conditioned for implementation with development of Irvine Spectrum 5
10. Conditioned for implementation with development of Northwood Point
11. Conditioned for implementation with development of MacArthur Place
12. City of Tustin project
13. Implemented through the City of Irvine's Advanced Transportation Management Systems (ATMS) Program
14. City of Santa Ana project
15. Currently unidentified future improvements beyond 2005 will be made to the Jamboree Road and Barranca Parkway intersection pursuant to the 1998 Memorandum of Agreement (MOA) between the TCA and Cities of Irvine and Tustin to achieve an acceptable level of service.

~~(1) Consideration has been given to grade separate the Jamboree Road and Barranca Parkway intersection. For example, the overall IBC Rezoning mitigation program contains a measure calling for a grade separation at this location.~~

Since the 2020 land use database for the study area includes development that has yet to undergo a formal entitlement/approval process, it is likely that improvements in addition to the committed roadways will be implemented to service the yet to be approved land uses. Therefore, the committed roadway network used for this analysis represents a conservative case for impact analysis purposes.

The circulation system for the 2005 analysis derives from the committed network and includes those roadway projects anticipated to be completed in this time frame (Appendix F). Figure 3.12-4 also identifies the year 2005 improvements.

The committed intersection network configurations for Jamboree Road/Barranca Parkway is based in part upon a 1998 MOA between the City of Tustin, the City of Irvine, and the Transportation Corridor Agency (TCA). In that MOA, some interim improvements were defined, that have now been constructed, and a funding agreement with a maximum dollar amount was established for future improvements to maintain an acceptable level of service at this location. Those future improvements are currently being negotiated between the Cities of Irvine and Tustin. Per the MOA, a future grade-separated intersection at this location was determined to be financially infeasible.

3.12.6 Traffic Forecasting

Traffic forecast data for the analysis have been derived from the Central County Traffic Model (CCTM), a subarea derivation of the Orange County Traffic Analysis Model (OCTAM). The current version of OCTAM, OCTAM 2.8, was used. Socioeconomic data forecasts adopted by the County of Orange as OCP-96 Modified (July 1997) and quantified in OCTAM 2.8 were used as the basis for the 2005 and 2020 traffic forecasts. These provide an areawide set of demographic projections that are consistent with local and regional forecast data.

CCTM, the subarea model, was prepared using the consistency guidelines for subarea traffic model derivation prepared by OCTA. Those guidelines require subarea model derivation from the current version of OCTAM. The demographic database in the CCTM is that contained in the OCTAM 2.8, and corresponds to the OCP-96 Modified projections used for transportation planning in Orange County.

The trip generation procedures in the CCTM are those used in OCTAM 2.8, and they incorporate an allowance for home-based work trips. This does not respond to TDM requirements established as part of local and regional trip reduction plans and ordinances. However, to maintain consistency with OCTAM 2.8, no additional trip reduction has been assumed in the traffic analysis.

OCP-96 Modified contains data for MCAS El Toro that is not consistent with the currently adopted MCAS El Toro Community Reuse Plan, which assumes a 38 million air passenger (MAP) airport plus ancillary activities (County of Orange 1996). To incorporate the reasonably foreseeable 38 MAP airport in this traffic analysis, the 2005 and 2020 forecasts incorporate trip generation data from the *MCAS El Toro Disposal and Reuse Draft EIS* (preliminary) which is currently being prepared by DON.

3.12.7 Baseline Traffic Conditions

The traffic impact analyses compare traffic conditions for each reuse alternative and the No Action Alternative with a corresponding reference data set which includes baseline traffic data under existing, short-range and long-range time frames. The use of baseline data for comparative analysis in BRAC evaluations, instead of the use of existing or No Action conditions, is discussed in Section 3.0 of this EIS/EIR. The baseline condition for each of the time frames analyzed assumes that traffic generation for the project area is maintained at the volumes which were present when Congressional action was taken to close MCAS Tustin (1993). The most representative data for the baseline traffic generation at MCAS Tustin was found in the *Tustin Special Area Traffic Circulation Study* (City of Tustin 1993m). The estimated external trip generation included at the baseline condition for each of the time frames is shown in Table 3.12-5.

Table 3.12-5
Baseline Trip Generation for Reuse Plan Area
(External Vehicle Trips)

Access Location	Am Peak Hour	PM Peak Hour	ADT
Valencia Avenue/Moffett Drive			
(Red Hill Avenue)	500	700	4,900
Moffett Drive			
(Harvard Avenue)	750	800	4,700
Marble Mountain Road			
(Harvard Avenue)	300	300	2,800
Total	1,550	1,800	12,400

Source: City of Tustin 1993m.

Existing Conditions Prior to Reuse

The analysis of existing conditions is based on study area traffic counts made in 1997 and 1998, as described in Sections 3.12.4. In the 1997/1998 period there were still a considerable number of external vehicle trips generated by activities at MCAS Tustin, despite the previous closure designations. Comparison between the 1997 data and the 1993 project site trip generation data shows similar peak hour volumes for the two years. In other words, 12,400 ADT in the baseline for 1993 were still represented in the 1997/1998 counts for MCAS Tustin and surrounding areas, and the 1997/1998 existing conditions are appropriate as a reference data set for the existing plus project impact analysis, referred to as the project "stand-alone" analysis.

2005 Conditions Without Reuse

For the 2005 analyses, the reference (cumulative) traffic condition combines the baseline trip generation for the reuse plan area, shown in Table 3.12-5, with the projected 2005 traffic generation and road network for the remainder of the study area. Analysis of the 2005 reference (cumulative) traffic intersection performance indicates that ~~five~~ 11 intersections would operate below desired performance criteria. These intersections are listed in Table 3.12-6 and shown in Figure 3.12-5.

Table 3.12-6
2005 Conditions Intersection Deficiencies
Without Reuse

Location		Peak Hour	ICU	LOS
Tustin				
21	Red Hill and Irvine	PM	~~0.91~~ 0.99	E
42	Tustin Ranch and Walnut	PM	1.14	F
Santa Ana				
47	Main and Warner	PM	1.05	F
48	Main and Dyer	PM	1.03	F
51	Main and MacArthur	PM	1.02	F
75	SR-55 SB Ramps and Edinger	PM	1.19	F
196	Bristol and MacArthur	PM	0.96	E
197	Bristol and Segerstrom/Dyer	PM	0.94	E
198	Bristol and ~~Walnut~~ Warner	PM	~~0.96~~ 1.08	~~EF~~
199	Bristol and Edinger	AM PM	1.09 1.06	F F
Irvine				
120	Harvard and Michelson	AM	0.91	E

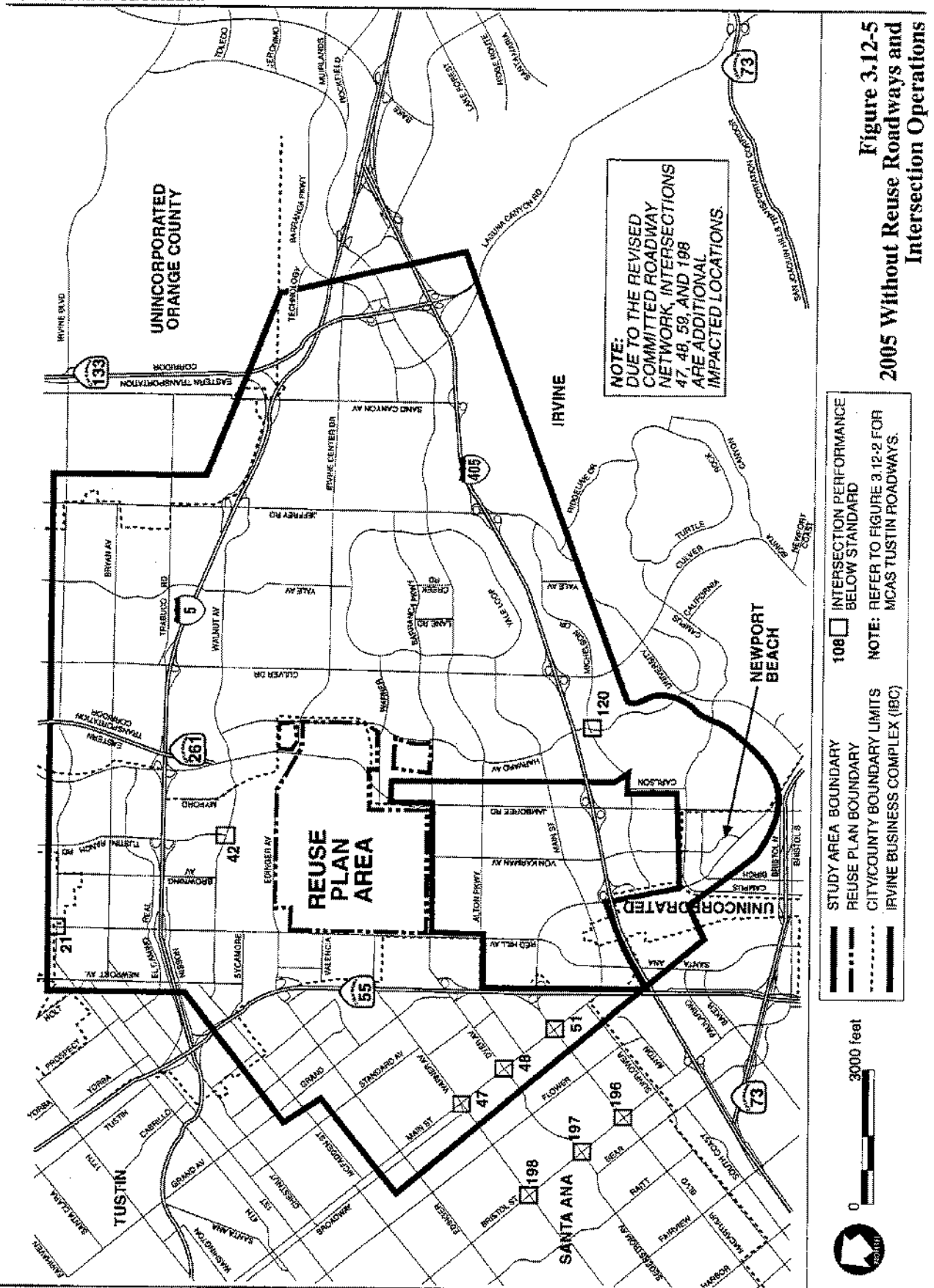


Figure 3.12-5
2005 Without Reuse Roadways and Intersection Operations

2020 Conditions Without Rense

For the 2020 analysis, the reference (cumulative) traffic condition combines the baseline trip generation for the reuse plan area shown in Table 3.12-5, with the projected 2020 traffic generation and 2020 committed road network for the remainder of the study area. Analysis of the 2020 reference (cumulative) traffic intersection performance indicates that ~~24~~ 19 arterial intersections and 5 freeway ramp intersections would operate below desired performance criteria. These intersections are shown in Figure 3.12-6 and listed in Tables 3.12-7 and 3.12-8.

3.12.8 Rail Transportation

Existing Operations

The railroad right-of-way along the northeast boundary of the reuse plan area is owned by OCTA. The SCRRA, a five-county joint powers authority, operates the Metrolink commuter rail system along the OCTA line. Amtrak also runs daily passenger service on the line. The nearest stops for both systems are at the Santa Ana and Irvine stations (Metrolink 1999, Amtrak 1999).

Planned Improvements

Additional commuter rail service is planned under the Los Angeles/San Diego (LOSSAN) Corridor Commuter Rail Action Plan. Commuter service within the corridor will require stations at different locations. A commuter rail station is being developed adjacent to the reuse plan area, in the City of Tustin on the northwest corner of Jamboree Road and Edinger Avenue. At maximum operation capacity, the LOSSAN line could also include as many as nine commuter rail round trips, nine Amtrak round trips, and four freight trains.

OCTA is also evaluating the regional rail system through its Countywide Rail Study. This study is assessing congested traffic corridors and identifying rail and bus enhancement for the existing transportation system. While additional rail lines and improved service are being evaluated as part of this study, stops in Tustin are not currently proposed.

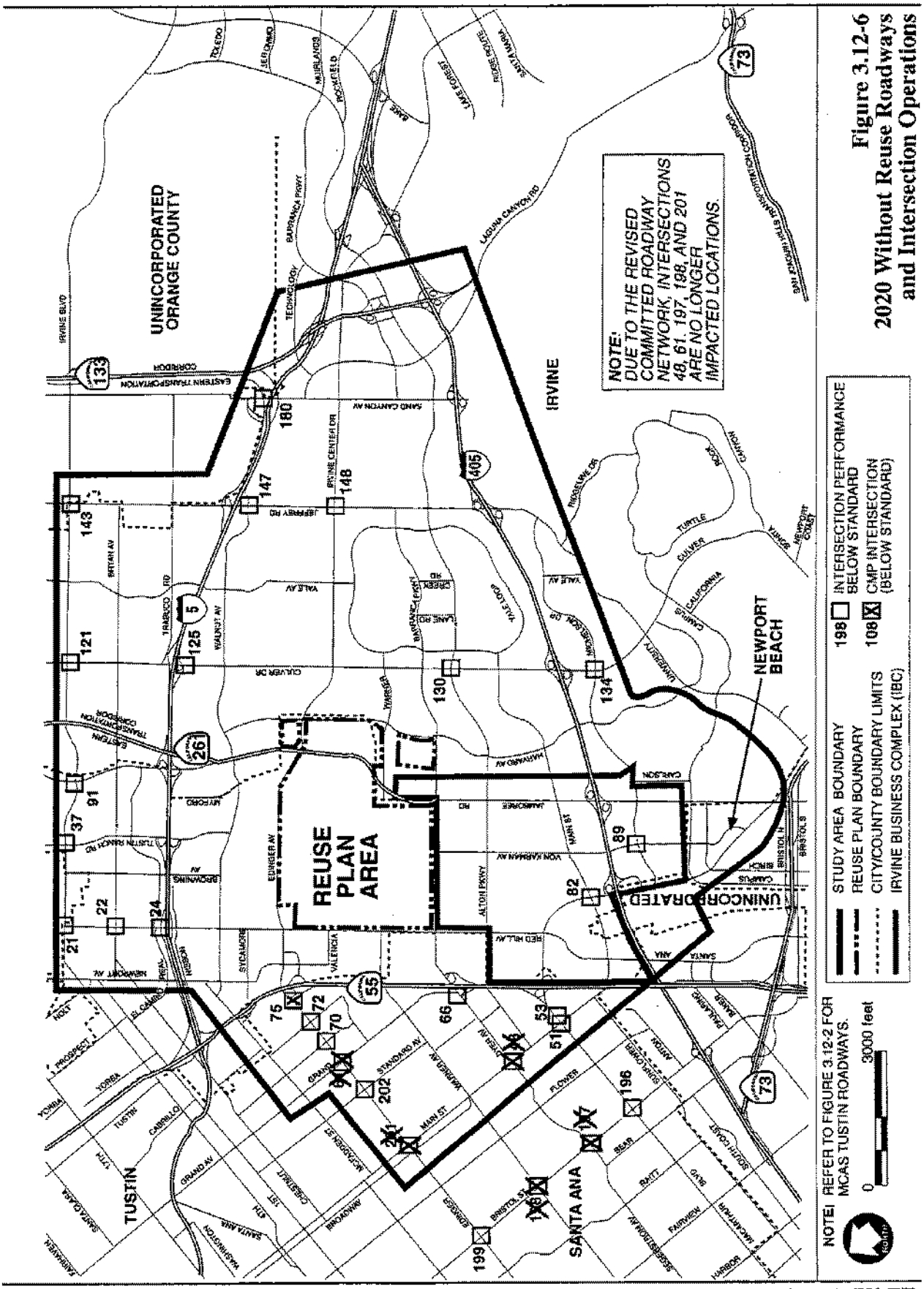


Figure 3.12-6
2020 Without Reuse Roadways and Intersection Operations

9902 MCAS Tustin EIS/EIR\Figures\Fig 3.12-6 2020 Baseline 6/7/99

Table 3.12-7
2020 Conditions Intersection Deficiencies
Without Reuse

Location		Peak Hour	ICU	LOS
Tustin				
1	Holt and Irvine	AM/PM	1.04/1.02	F/F
21	Red Hill and Irvine	PM	~~0.99~~ 0.98	E
22	Red Hill and Bryan	AM	~~0.96~~ 0.91	E
37	Tustin Ranch and Irvine	AM/PM	1.00/1.16	F/E
Tustin/Irvine				
91	Jamboree & Irvine	AM/PM	0.93/0.95	E/E
103	Jamboree and Barranca	PM	1.15	F
Santa Ana				
~~48~~	~~Main and Dyer~~	~~PM~~	~~1.10~~	~~F~~
51	Main and MacArthur	PM	0.98	E
53	Hutton Centre and MacArthur	PM	0.91	E
~~61~~	~~Grand and Edinger~~	~~AM/PM~~	~~0.98/1.05~~	~~F~~
66	Grand and Dyer	PM	~~0.97~~ 0.94	E
70	Lyon and Edinger	PM	0.97	E
72	Ritchey and Edinger	PM	0.96	E
196	Bristol and MacArthur	AM/PM	0.91/~~1.14~~ 1.05	E/F
~~197~~	~~Briston and Segerstrom/Dyer~~	~~PM~~	~~1.09~~	~~F~~
~~198~~	~~Bristol and Warner~~	~~PM~~	~~1.01~~	~~F~~
199	Bristol and Edinger	~~AM~~/PM	~~1.24/1.31~~ 0.94	~~F/F~~ E
~~201~~	~~Main and Edinger~~	~~PM~~	~~1.04~~	~~F~~
202	Standard and Edinger	PM	0.95	E
Irvine				
82	MacArthur and Main	PM	1.18	F
89	Von Karman and Michelson	PM	1.07	F
121	~~Carlson~~ Culver and Irvine	PM	0.91	E
130	Culver and Alton	PM	0.94	E
134	Culver and Michelson	PM	~~0.92~~ 0.99	E
143	Jeffrey & Irvine	AM/PM	1.06/1.11	F/F
148	Jefffrey and Irvine Center	PM	1.02	F

Table 3.12-8
2020 Conditions Freeway Ramp Intersection Deficiencies
Without Reuse

Location		Peak Hour	ICU	LOS
Tustin				
24	Red Hill and I-5 Northbound Ramps	AM/PM	0.93/1.00	E/E
Santa Ana				
75	SR-55 Southbound Ramps and Edinger	PM	1.19	F
Irvine				
125	Culver and I-5 Southbound Ramps	PM	0.92	E
147	Jeffrey and Walnut/I-5 Southbound	AM	0.94	E
180	Sand Canyon and I-5 Northbound Ramps	AM/PM	1.11/0.92	F/E

3.12.9 Bus Service

Existing Operations

OCTA operates a network of public bus routes within the study area providing access to employment centers, shopping, and recreational areas as listed in Table 3.12-9. It is the policy of the City of Tustin to work with OCTA on an ongoing basis to maximize the services provided to the City. The City of Tustin has a policy to provide bus turnouts wherever possible.

Paratransit

Paratransit services, or transportation services for the mobility-impaired, are provided by OCTA's Dial-A-Ride for senior citizens and the disabled, and by special services for senior citizens participating in programs at senior centers.

3.12.10 Air Transportation

John Wayne Airport, located less than five miles from the project site, provides a comprehensive schedule of commercial flights for Orange County. Airports at Los Angeles (LAX), Long Beach, and Ontario provide regional, national, and international flight service.

Table 3.12-8
2020 Conditions Freeway Ramp Intersection Deficiencies
Without Reuse

Location		Peak Hour	ICU	LOS
Tustin				
24	Red Hill and I-5 Northbound Ramps	AM/PM	0.93/1.00	E/E
Santa Ana				
75	SR-55 Southbound Ramps and Edinger	PM	1.19	F
Irvine				
125	Culver and I-5 Southbound Ramps	PM	0.92	E
147	Jeffrey and Walnut/I-5 Southbound	AM	0.94	E
180	Sand Canyon and I-5 Northbound Ramps	AM/PM	1.11/0.92	F/E

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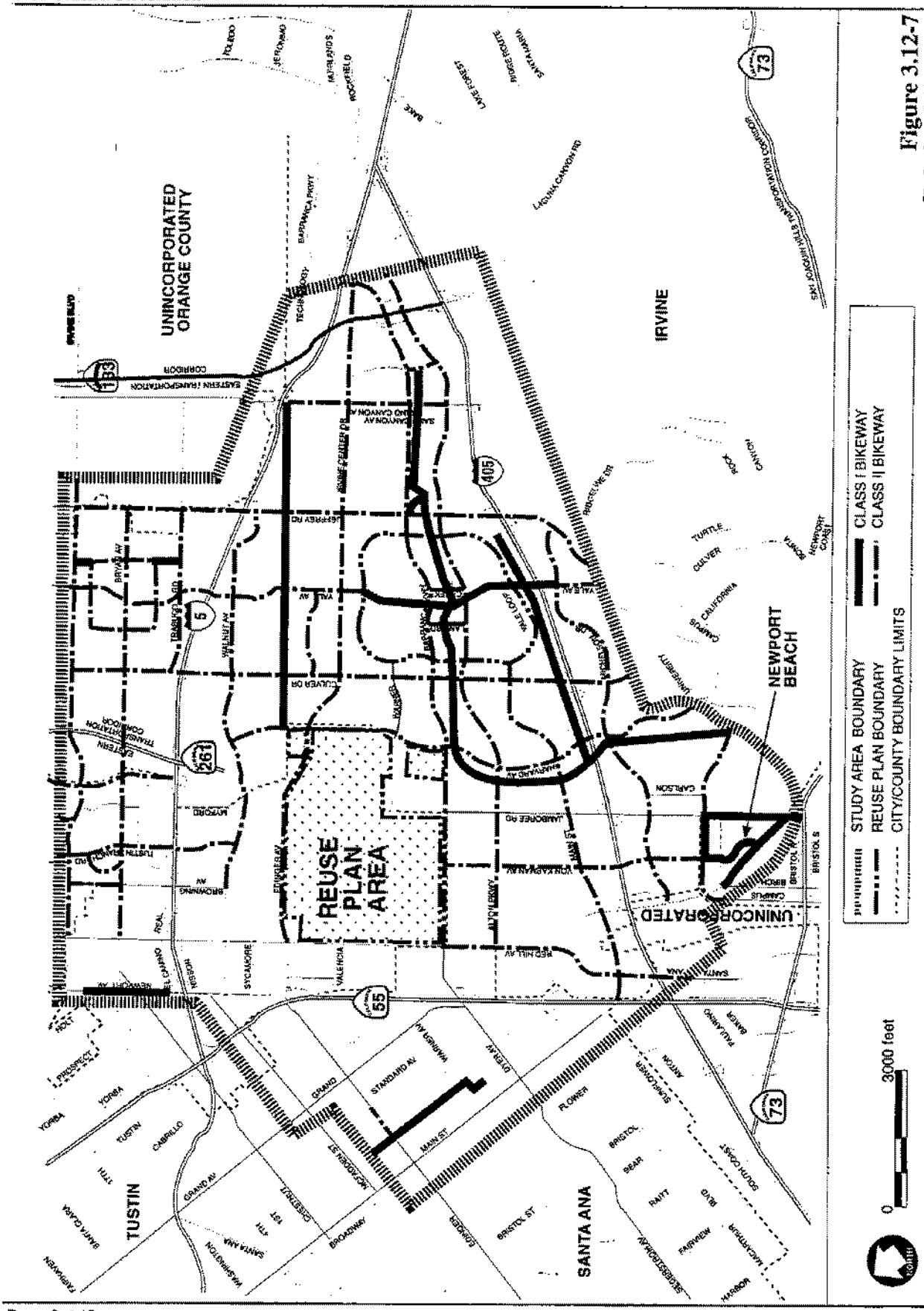


Figure 3.12-7
Existing Bikeways

Planned

The Orange County Master Plan of Bikeways, developed to accommodate future bikeway needs, is illustrated in Figure 3.12-8. Missing links in the existing system and constraints for future routes were considered which resulted in this Bikeway Plan. The future network is comprehensive, with several new facilities and extensions to existing routes. To the extent possible, this Plan achieves a continuity of routes and trails that do not terminate except at logical locations such as schools or parks.

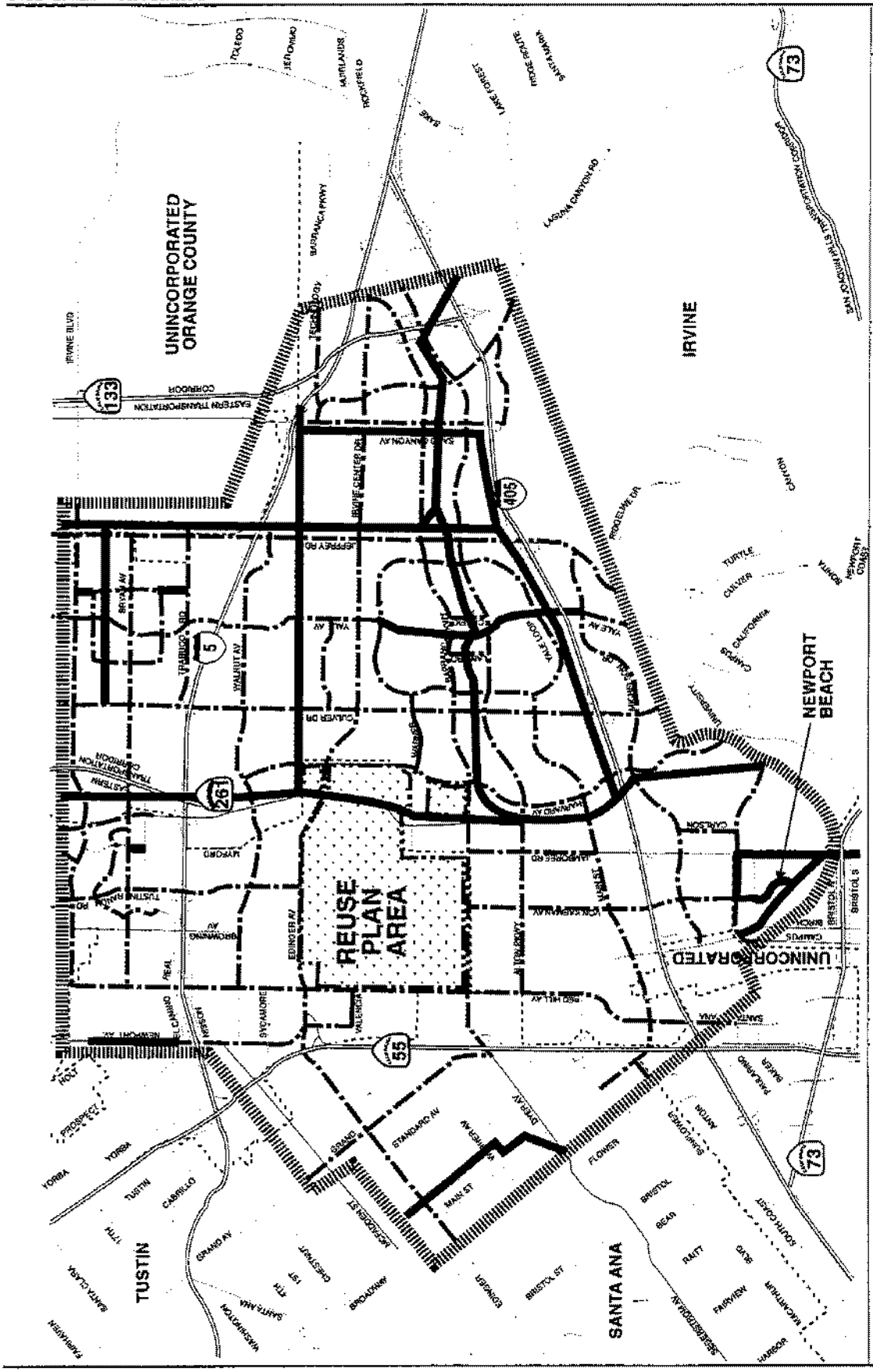


Figure 3.12-8
Orange County Master Plan of Bikeways

3.13 AIR QUALITY

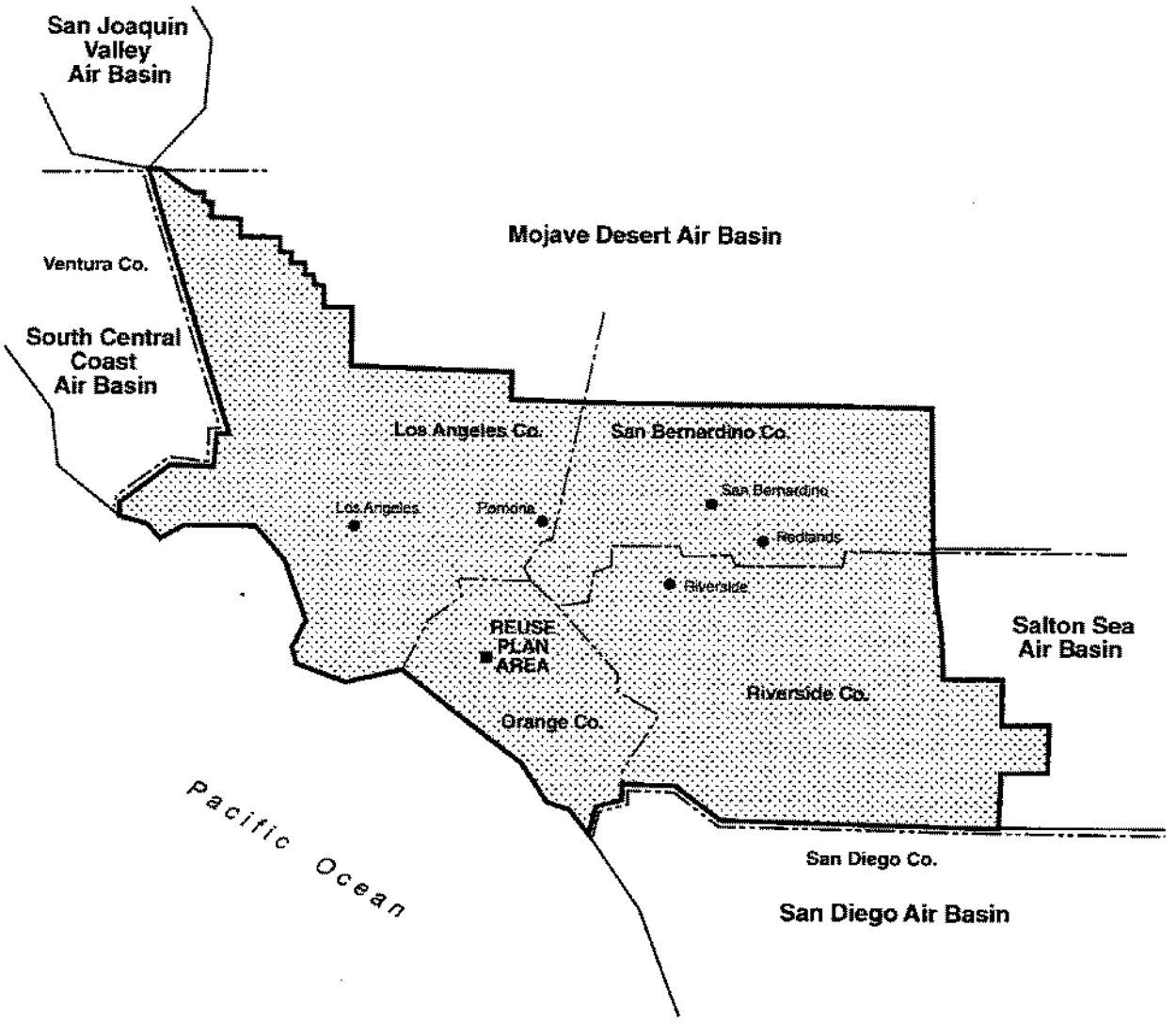
MCAS Tustin is located within the South Coast Air Basin, a 6,600-square mile area encompassing all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The South Coast Air Basin is defined by a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean on the southwest and by mountains of up to 11,000 feet msl around the remaining perimeter. To the north of the South Coast Air Basin is the high desert, and to the southeast are the low desert and San Diego County (Figure 3.13-1).

3.13.1 Climate and Meteorology

The climate of the South Coast Air Basin is determined by latitude, proximity to the Pacific Ocean, and topography. The climate in this region is generally dominated by the Hawaiian subtropical high-pressure zone of the eastern Pacific Ocean. The climate is mild because of the cool sea breezes, but does experience periods of extremely hot weather, winter storms, or Santa Ana winds. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local and regional topography, provide the links between air pollutant emissions and air quality. The South Coast Air Basin generally has a limited capability to disperse air contaminants because of its low wind speeds and persistent temperature inversions.

In the Tustin area, the coolest months are November through March, with an average temperature of 58.6° F. The warmest months are July through September, with an average temperature of 70.1°F. The mean annual precipitation at MCAS Tustin is 11.4 inches. Ninety-nine percent of the annual precipitation occurs November through April.

Predominant daily winds consist of a morning onshore air flow from the west/southwest, and afternoon and evening offshore air flows from the north/northeast with little variability between seasons, although summer wind speeds average slightly higher than winter wind speeds. The typical wind condition is from the west/southwest at less than about 11 miles per hour. The prevailing winds carry air contaminants east and northward. On occasion, during fall and winter months, offshore winds, known as Santa Ana winds, may develop as a result of a high-pressure system situated over the Mojave and Colorado deserts and the Great Basin east of the South Coast Air Basin. Santa Ana winds are usually warm and dry, and can reach speeds in excess of 50 miles per hour. Strong Santa Ana winds produce some of the Basin's best air quality because they push poor air to the west over the ocean.



Note: Air basin boundaries do not necessarily coincide with county boundaries. Los Angeles, San Bernardino and Riverside counties all extend into adjacent air basins.

Source: California Air Resources Board, 1996

Figure 3.13-1
South Coast Air Basin

One of the dominant meteorological conditions that influences air quality in the South Coast Air Basin is the inversion layer. Cooler air from the ocean underlies air which has been warmed by land surface contact, giving rise to a persistent capping inversion which resists the transfer and dispersion of pollutants. This phenomenon occurs on almost every day of the year, reaching heights above ground of perhaps 1,200 feet on some summer afternoons, and frequently remaining ground-based during the coldest months of the year. The altitude of the cool air/warm air mixing height normally increases during the day as the base of the inversion erodes because of surface heating. The average occurrence of ground-based inversions is 11 days per month and ranges from two days in June to 22 days in December and January. High inversions with heights less than 2,500 feet msl occur an average of 22 days each month.

In the South Coast Air Basin, the potential for adverse air pollution conditions is particularly high during the period from June through September. Frequently, the light winds and shallow vertical mixing fail to disperse the large quantities of pollutants generated in the basin. In addition, the plentiful sunshine in the basin provides the requisite energy to produce the photochemical reactions which convert two air pollutants, reactive organic compounds (ROC) and oxides of nitrogen (NO_X), to ozone (O_3), commonly referred to as "smog." In this reaction, ROC and NO_X are called "precursors."

3.13.2 Applicable Regulations, Plans, and Policies

The Federal Clean Air Act (42 U.S.C. § 7401 et seq., as amended in 1977 by Pub. L. 95-95, 91 Stat. 685-796 and Pub. L. 95-190, 91 Stat. 1399-1404) requires the adoption of national ambient air quality standards (NAAQS) to protect the public health, safety, and welfare from known or anticipated effects of air pollution. The NAAQS have been updated occasionally. Current standards are set for sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), O_3, particulate matter equal to or less than 10 microns in size (PM_{10}), fine particulate matter equal to or less than 2.5 microns in size ($PM_{2.5}$), and lead (Pb). In the most recent change, the 8-hour O_3 and $PM_{2.5}$ standards became effective on September 15, 1997, and policies and systems to implement these new standards are being developed. No new controls with respect to the new standards will be required by the USEPA until after the year 2002. The State of California Air Resources Board (CARB), has established additional standards, generally more restrictive than the NAAQS. Federal and state standards are shown in Table 3.13-1.

Table 3.13-1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m3)	0.12 ppm (235 µg/m3)	Same as Primary Standard
	8 Hours[6]	-	0.08 ppm	-
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m3)	9.0 ppm (10 mg/m3)	-
	1 Hour	20 ppm (23 mg/m3)	35 ppm (40 mg/m3)	
Nitrogen Dioxide (NO_2)	Annual Average	-	0.053 ppm (100 µg/m3)	Same as Primary Standard
	1 Hour	0.25 ppm (470 µg/m3)	-	
Sulfur Dioxide (SO_2)	Annual Average	-	80 µg/m3 (0.03 ppm)	-
	24 Hours	0.04 ppm (105 µg/m3)	365 µg/m3 (0.14 ppm)	-
	3 Hours	-	-	1300 µg/m3 (0.5 ppm)
	1 Hour	0.25 ppm (655 µg/m3)	-	-
Suspended Particulate Matter (PM_{10})	Annual Geometric Mean[7]	30 µg/m3	-	-
	24 Hours	50 µg/m3	150 µg/m3	-
	Annual Arithmetic Mean[7]	-	50 µg/m3	
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	-	65 µg/m3	-
	Annual Arithmetic Mean	-	15 µg/m3	-
Sulfates (SO_4)	24 Hours	25 µg/m3	-	-
Lead (Pb)	30-Day Average	1.5 µg/m3	-	-
	Calendar Quarter	-	1.5 µg/m3	Same as Primary Standard
Hydrogen Sulfide (HS)	1 Hour	0.03 ppm (42 µg/m3)	-	-
Vinyl Chloride (chloroethene)	24 Hours	0.010 ppm (26 µg/m3)	-	-
Visibility Reducing Particles	8 hours (10 am-6 pm, Pacific Standard Time)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.	-	-

Source: CARB 1999a
ppm - parts per million
$\mu g/m^3$ - micrograms per cubic meter

1. California standards, other than ozone, CO, sulfur dioxide (1-hour), nitrogen dioxide, and PM_{10}, are values that are not to be equaled or exceeded. The ozone, CO, sulfur dioxide (1-hour), nitrogen dioxide, and PM_{10} standards are not to be exceeded.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units (given in parentheses) are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar). *Ppm* in this table refers to ppm by volume or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. New federal 8-hour ozone and fine particulare matter standards were promulgated by EPA on July 18, 1997. The federal 1-hour ozone standard continues to apply in areas that violated the standard.
7. The annual PM_{10} state standard is based on the geometric mean of all reported values taken during the year. The annual PM_{10} national standard is based on averaging the quarterly arithmetic means.

The Clean Air Act Amendments of 1990 (Pub. L. 101-549, 104 Stat. 2399) require the USEPA to promulgate rules to ensure that federal actions conform to the appropriate state implementation plan (SIP). These rules, known together as the General Conformity Rule (40 C.F.R. § 51.100 et seq. and § 93.100 et seq.), require any federal agency responsible for an action to determine if its action conforms with pertinent guidelines and regulations. Certain actions are exempt from conformity determination, including those actions associated with transfers of land or facilities where the federal agency does not retain continuing authority to control emissions associated with the properties. Federal actions may also be exempt if the projected emission rates would be less than specified emission rate thresholds, known as *de minimis* limits.

The Clean Air Act and the California Health and Safety Code (Cal. Health & Safety Code § 25270 et seq.) define a group of pollutants called "toxic air contaminants" or "air toxics." Exposure to these pollutants is a concern, as they can cause or contribute to cancer, birth defects, genetic damage, and other adverse health effects. The source and effects are generally local rather than regional. Evaluation is based on case studies, not standards for concentration. Examples of air toxics include benzene, asbestos, and carbon tetrachloride.

The regional authority for air quality matters is SCAQMD, which promulgates rules and regulations that govern the permitting and enforcement processes for emitters of air pollutants. SCAQMD is also responsible for the preparation of the planning documents that guide the efforts necessary to achieve the NAAQS and state ambient air quality standards, as required by the federal and state legislation. The principal planning document is the Air Quality Management Plan (AQMP), which, when approved, functions as that part of the SIP applicable to the SCAQMD. The current USEPA-approved SIP and AQMP are the 1994 revisions. The 1997 AQMP was adopted by the SCAQMD Board in November 1996 and approved by the CARB in late January 1997. The 1997 California SIP have not been approved by the USEPA. A 2000 AQMP is in the draft stage.

At the federal level, Title III of the Clean Air Act provides a program for the control of 189 Hazardous Air Pollutants (HAPs). The first stage of the program involves the promulgating of National Emission Standards for HAPs (NESHAPs) to reduce HAP emissions from new and existing sources. Major sources will be required to implement Maximum Available Control Technology. Area sources will be required to implement general achievable control technology. This will be followed by a second phase in whicb residual risk will be evaluated and further controls considered.

At the state level, the California state legislature has enacted several programs directed at toxic air contaminants (TACs). These programs include the Tanner Toxics Act (AB 1807), Air Toxics Hot

Spots Assessment Program (AB 2588), Toxic Emissions Near Schools Program (AB 3205), and Disposal Site Air Monitoring Program (AB 3374).

CARB must adopt air toxic control measures (ATCMs) to reduce levels of exposure and the risks associated with those levels. At present, the SCAQMD has developed and is implementing eight rules that control emissions from specific sources of TACs. These rules meet and in some instances exceed the requirements set forth in the ATCM. The District continues to implement this program through new rulemaking as CARB adopts additional ATCMs.

The City of Tustin has implemented a Trip Reduction/Transportation Demand Management (TR/TDM) Plan (City of Tustin 1993p) as part of the City's CMP to reduce automobile trips within the City of Tustin in order to reduce vehicular congestion and improve air quality. As part of the plan, all new development projects with 100 or more employees, and all expanded projects where additional square footage will result in a total of 100 or more employees, are required to prepare a TR/TDM strategy plan to achieve the trip reduction goal. The plan is applicable to air quality because it results in a reduction in air pollutant emissions.

The California Public Resources Code Section 21151.8 and Education Code Section 39003 prohibit the approval of an environmental impact report or negative declaration for a project involving the purchase of a school site or the construction of a new elementary or secondary school, unless the following occur:

- Facilities within a ¼ mile radius of the proposed site that might reasonably be anticipated to emit bazardous emissions or handle hazardous or acutely hazardous materials, substances or waste are identified.

- It has been determined that the health risks from the facilities do not and will not constitute an actual or potential endangerment of public health to persons who attend or are employed at the school.

3.13.3 Regional and Local Air Quality

As discussed above, southern California frequently experiences weather conditions which contribute to the formation of air pollutants and inhibit their dispersion. These conditions, combined with emissions from the second largest urban area in the U.S., give the South Coast Air Basin the worst air pollution problem in the nation (SCAQMD 1994).

Specific geographic areas are classified by the USEPA and the CARB as either "attainment" or "nonattainment" for each pollutant, based upon the achievement of federal and state standards. The attainment status for each pollutant in the South Coast Air Basin, and the target date for attainment, are sbown in Table 3.13-2.

Table 3.13-2
South Coast Air Basin Air Quality Attainment Status

Pollutant	Federal Standard		State Standard	
	Status	Attainment Target Date	Status	Attainment Target Date
NO_2	Attainment	NA	Attainment	NA
CO	Nonattainment	2000	Serious Nonattainment	2000
PM_{10}	Serious Nonattainment	2006	Nonattainment	post-2010
O_3	Extreme Nonattainment	2010	Extreme Nonattainment	post-2010
SO_2	Attainment	NA	Attainment	NA
Pb	Attainment	NA	Attainment	NA

Source: SCAQMD 1997, CARB 1999b

Local air quality is not measured at MCAS Tustin. The closest monitoring station is in the El Toro/Saddleback Valley, which is located to the east of MCAS Tustin. The results of the monitoring for O_3, CO, and PM_{10} from 1994 through 1997 are shown in Table 3.13-3. NO_2 is not monitored at the El Toro/Saddleback Valley air monitoring station. Tbe closest station to MCAS Tustin that monitors NO_2 is the Central Orange County monitoring station in Anaheim, located to the northwest of MCAS Tustin. Levels of NO_2 monitored at this station from 1994 to 1997 are shown in Table 3.13-4.

As sbown in Table 3.13-3, neither the federal nor the state standards for CO were exceeded at the Saddleback Valley air quality monitoring station since 1994. Neither the state nor the federal standards for NO_2 were exceeded at the Central Orange County station since 1994 (see Table 3.13-4). For PM_{10} at the El Toro/Saddleback Valley monitoring station, the state 24-hour standard has been exceeded every year since 1994, but the federal standard has not been exceeded. For the state annual standard, levels of PM_{10} were exceeded for the years 1994, 1995, and 1997. The federal annual standard was not exceeded for any of the years recorded. For O_3, both the federal and state standards have been exceeded every year since 1994.

Table 3.13-3
Summary of Air Quality Data
El Toro/Saddleback Valley Air Monitoring Station [1]

Pollutant Standards	1994	1995	1996	1997	1998
Ozone (O_3) State standard (1-hr avg >0.09 ppm) National standard (1-hr avg >0.12 ppm) National standard (8-hr avg >0.08 ppm) (effective 9/97)					
Maximum concentration 1-hr period (in ppm)	0.18	0.15	0.14	0.13	0.16
Maximum concentration 8-hr period (in ppm)	NA	0.10	0.10	0.10	0.11
Number of days state standard exceeded	16	18	20	8	14
Number of days national 1-hr standard exceeded	5	1	2	2	2
Number of days national 8-hr standard exceeded (postulated)	NA	3	8	2	3
Carbon Monoxide (CO) State standard (1-hr avg >20 ppm) National standard (1-hr avg >35 ppm) State standard (8-hr avg ≥9.1 ppm) National standard (8-hr avg ≥9.5 ppm)					
Maximum concentration 1-hr period (in ppm)	8	6	6	5	NA
Maximum concentration 8-hr period (in ppm)	5.4	4	4	3.6	NA
Number of days state 1-hr standard exceeded	0	0	0	0	NA
Number of days national 1-hr standard exceeded	0	0	0	0	NA
Number of days state 8-hr standard exceeded	0	0	0	0	NA
Number of days national 8-hr standard exceeded	0	0	0	0	NA
Suspended Particulates (PM_{10}) State standard (30 $\mu g/m^3$ annual geometric mean) National standard (50 $\mu g/m^3$ annual arithmetic mean)[1] State standard (24-hr avg >50 $\mu g/m^3$) National standard (24-hr avg >150 $\mu g/m^3$)					
Annual geometric mean (in $\mu g/m^3$)	30.3	32.0	27.1	32.5 [2]	NA
Annual arithmetic mean (in $\mu g/m^3$)	33.3	37.6	30.1	34.5 [2]	NA
Maximum 24-hr concentration (in $\mu g/m^3$)	91	124	79	86 [2]	NA
Percent samples exceeding state standard	11.9	18.3	6.6	7.1 [2]	NA
Percent samples exceeding federal standard	0	0	0	0 [2]	NA

ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
NA = not available, not applicable
[1] Station is named El Toro in CARB files, Saddleback Valley in SCAQMD files.
[2] Less than 12 months of data. May not be representative.
Source: SCAQMD 1995-97

Table 3.13-4
Nitrogen Dioxide Emissions
Central Orange County (Anaheim) Monitoring Station

Pollutant Standards	1994	1995	1996	1997
Nitrogen Dioxide (NO_2) State standard (1-hr avg >0.25 ppm) National standard (0.0534 Annual arithmetic mean in ppm)				
Annual arithmetic mean (in ppm)	0.0380	0.0371	0.0319	0.0332
Percent annual arithmetic mean exceeded	0	0	0	0
Maximum 1-hr concentration (in ppm)	0.19	0.18	0.15	0.13
Number of days state 1-hr standard exceeded	0	0	0	0

ppm = parts per million
Source: SCAQMD 1994-97

CARB has calculated 8-hour average O_3 concentrations for the years 1995-1998 in order to evaluate past air quality against the new standard. Those data are included in Table 3.13-3 and show forecast exceedances of the standard in each year.

O_3 continues to be the most severe pollutant concern in the South Coast Air Basin. Within the Basin, the levels of pollution nearer to the coast, which includes MCAS Tustin, are relatively low compared to inland areas. For example, Saddleback Valley exceeded the state O_3 standard 18 days in 1995, while Pomona exceeded the standard 87 days, and four stations in San Bernardino County exceeded the standard 110 or more days each. The distribution is similar for PM_{10}. Pollutant concentrations increase with distance from the coast as a result of transport in the prevailing winds and a higher density of pollutant sources in the inland areas. Therefore, emissions from the coastal areas must be recognized as contributors to inland pollutant concentrations. The roles are reversed occasionally during periods of offshore, or Santa Ana, wind conditions.

3.13.4 Baseline Air Quality Conditions

Baseline emissions were estimated and are included in Table 3.13-5. Helicopter emissions data are the aircraft emissions included for MCAS Tustin in the SCAQMD 1997 AQMP (SCAQMD 1999). Stationary source emissions were calculated by averaging four quarterly reports from MCAS Tustin to SCAQMD from the period January 1, 1994 through June 30, 1995. Using this method, it was estimated that 89 pounds per day, or 16 tons per quarter, of NOx was emitted in the baseline year. However, because these stationary source emissions are part of the RECLAIM program and could occur in other parts of the basin in the future, these emissions are not included as part of the baseline total used for the impact analysis in Section 4.13 of this EIS/EIR.

Table 3.13-5
MCAS Tustin Baseline Emissions

Activity	Emissions - pounds per day					Emissions - tons per year				
	CO	ROC	NO_X	SO_X	PM_{10}	CO	ROC	NO_X	SO_X	PM_{10}
Auto trips (mobile source)[1]	~~5,224~~ 4,686	~~527~~ 362	~~487~~ 438	~~50~~ 31	~~31~~ 48	~~953~~ 855	~~96~~ 66	~~89~~ 80	9 6	~~6~~ 9
Helicopter [2]	1,538	361	702	35	113	281	66	128	6	21
1991~~2~~ Utility Use [3]	21	2	116	9	3	4	<1	21	2	1
Total	~~11,469~~ 6,245	~~1,252~~ 725	~~1,743~~ 1,255	~~125~~ 75	~~195~~ 164	~~2,093~~ 1,140	~~229~~ 132	~~318~~ 229	~~23~~ 14	~~36~~ 30

(1) Baseline traffic generation of 12,400 ADT which is the volume generated in 1993. See Section 3.12
(2) Helicopter activity in 1993, per SCAQMD 1998
(3) Calculated from baseline utility use: see Section 3.3

3.13.5 Sensitive Receptors

Receptors considered sensitive to air pollution are facilities resulting in a concentration of people, especially the young, old, and infirm. Residences, hotels, motels, schools, child care facilities, hospitals, nursing homes, and convalescent homes are such receptors. Sensitive receptors in the project area include military family housing at the Air Station, single-family housing adjoining the Air Station to the northeast and southeast, an elementary school and junior high school, and multi-family housing to the southeast of the Air Station. The Single Room Occupancy (SRO) hotel at the intersection of Warner Avenue at Jamboree Road is also considered a sensitive receptor.

3.13.6 Regional Clean Air Incentives Market (RECLAIM)

The SCAQMD has implemented the Regional Clean Air Incentives Market (RECLAIM). RECLAIM is an alternative means of achieving further emission reductions from stationary sources, different from the traditional source-specific regulatory program. RECLAIM allows for pollution emitters to buy and sell criteria pollutant credits. RECLAIM also calls for declining mass emission limits on the total emissions from all sources within a facility. The facility can choose from a selection of methods for achieving the prescribed emission reductions: add-on controls, use of reformulated products, changes in production, purchase of excess emission reductions from other sources, and/or any other methods that would be enforceable and quantifiable.

MCAS Tustin is a facility that is permitted to emit NO_X under RECLAIM. The SCAQMD, in coordination with MCAS Tustin, has calculated how much NO_X can be emitted from Air Station operations based on estimated past emissions. MCAS Tustin can emit up to the amount established

through this process. If the Air Station were to emit less NO_X than it has credits for, it could sell the credits, transfer the credits, or save them for future years. If the Air Station were to emit more NO_X than it has credits for, it would be required to buy the credits to reflect this increase. Total RECLAIM annual emissions allocations for MCAS Tustin are shown in Table 3.13-6.

Table 3.13-6
MCAS Tustin Total RECLAIM Annual Emissions Allocations

From (Month/Year)	To (Month/Year)	NO_X RECLAIM Trading Credits Allocated (in pounds)[1]	NO_X RECLAIM Trading Credits Holdings (in pounds)
1/94	12/94	99,344	70,342
7/94	6/95	0	13,153
1/95	12/95	26,764	26,764
7/95	6/96	0	12,000
1/96	12/96	22,687	22,687
7/96	6/97	0	25,000
1/97	12/97	18,610	18,610
1/98	12/98	14,533	14,533
1/99	12/99	10,547	10,457
1/00	12/00	6,380	6,380
1/01	12/01	5,793	5,793
1/02	12/02	5,207	5,207
1/03	12/03	4,621	4,621
1/04	12/04	4,621	4,621
1/05	12/05	4,621	4,621
1/06	12/06	4,621	4,621
1/07	12/07	4,621	4,621
1/08	12/08	4,621	4,621
1/09	12/09	4,621	4,621
1/10	12/10	4,621	4,621

[1] Total MCAS Tustin emissions shall not exceed these allocations.
Source: SCAQMD 1997

3.14 NOISE

Noise is often referred to as "unwanted sound." Noise interferes with human activities that depend on audible communication. Noise distracts us from activities that require concentration, and interferes with sleep. At high levels, noise can be painful or can permanently damage our hearing.

Sound is quantified by measuring the energy carried by pressure waves in the air. The sound energy is converted to a numerical value by comparing it to the amount of energy produced by a reference pressure at the threshold of audibility, and the resulting ratio is expressed as a sound level. Because of the wide range of sound energy that is audible to humans, sound levels are expressed on a logarithmic scale of "decibels" (abbreviated as dB), in which an increase of 10 units on the decibel scale reflects a 10-fold increase in sound energy. A 10-fold increase in sound energy roughly translates to a doubling of perceived loudness to humans.

In evaluating human response to noise, acousticians compensate for the response of people to varying frequency or "pitch" components of sound. The human ear is most sensitive to sounds in the middle frequency range used for human speech, and is less sensitive to lower and higher-pitched sounds. The "A" weighting scale is used to account for this sensitivity; thus, most community noise standards are expressed in dB on the "A"-weighted scale, abbreviated dB(A). Zero on the dB scale is set roughly at the threshold of human hearing. Table 3.14-1 shows the relationship of various noise levels to commonly experienced noise events.

3.14.1 Noise Standards

Community noise consists of a wide variety of sounds, some near and some far away, which vary over the 24-hour day. Scientists and planners have found that humans respond generally to the 24-hour variation in noise based on the total energy content of the sound over the day, with a greater sensitivity to noise in the evening and at night.

State of California

California standards for community noise use the Community Noise Equivalent Level (CNEL), in which the energy is averaged over a 24-hour day with a 5-dB penalty from 7:00 p.m. to 10:00 p.m. and a 10-dB penalty from 10:00 p.m. to 7:00 a.m. The USEPA uses the Day-Night Noise Level (L_{dn}) measure, which is identical to the CNEL but without the evening noise weighting. The USEPA has

Table 3.14-1
Sonnd Levels of Typical Noise Sources and Noise Environments

Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Noise Environment	Human Judgement of Noise Loudness*
Military Jet Take-off with After-burner (50 ft) Civil Defense Siren (100 ft)	130	Carrier Flight Deck	
Commercial Jet Take-off (200 ft)	120	Commercial Airport Runway	**Threshold of Pain** *32 times as loud
Pile Driver (50 ft)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft) Newspaper Press (5 ft) Power Lawn Mower (3 ft)	100		**Very Loud** *8 times as loud
Motorcycle (25 ft) Propeller Plane Flyover (1000 ft).	90	Boiler Room Printing Press Plant	*4 times as loud
Diesel Truck, 40 mph (50 ft) Garbage Disposal (3 ft)	80	High Urban Ambient Sound	*2 times as loud
Passenger Car, 65 mph (25 ft) Living Room Stereo (15 ft) Vacuum Cleaner (3 ft) Electronic Typewriter (10 ft)	70		**Moderately Loud** *70 dB (Reference Loudness)
Normal Conversation (5 ft) Air Conditioning Unit (100 ft)	60	Data Processing Center Department Store	*1/2 as loud
Light Traffic (100 ft)	50	Private Business Office	*1/4 as loud
Bird Calls (distant)	40	Lower Limit of Urban Ambient Sound	**Quiet** *1/8 as loud
Soft Whisper (5 ft)	30	Quiet Bedroom	
	20	Recording Studio	**Just Audible**
	10		**Threshold of Hearing**
	0		

*Relative to a Reference Loudness of 70 Decibels

found that the point wbere noise becomes a significant contributor to what most people perceive as the environmental quality of their residential area is 55 dBs. At 65 dBs CNEL or L_{dn}, noise clearly has a significant adverse effect on environmental quality in residential areas.

Title 24 of the California Administrative Code requires that residential structures, other than detached single-family dwellings, be designed to prevent the intrusion of exterior noise so that the interior CNEL with windows closed, attributable to exterior sources, shall not exceed 45 dB in any habitable room. For areas where exterior noise levels are above 60 dB CNEL, a noise evaluation is required to determine if additional sound insulation is required to meet this standard.

City of Tustin

Noise standards for the City of Tustin are contained in the General Plan, Noise Element (City of Tustin 1994) and in the Tustin City Code, Chapter 6, Noise Control. Table 3.14-2 shows the noise and land use compatibility standards in the City of Tustin. These standards limit construction activities to between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, and the hours of 9:00 a.m. and 5:00 p.m. on Saturdays, and never on Sundays or city-observed federal holidays.

City of Irvine

Noise standards for the City of Irvine are contained in the General Plan, Noise Element (City of Irvine 1997) and in the Irvine Municipal Code (Title 6, Division 8, Chapter 1). Table 3.14-3 shows the noise and land use compatibility standards for the City of Irvine. These standards limit construction activities to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and the hours of 9:00 a.m. and 6:00 p.m. on Saturday, and never on Sundays or city-observed federal holidays.

City of Santa Ana

Noise standards for the City of Santa Ana are contained in the General Plan, Noise Element (City of Santa Ana 1997) and in the Santa Ana Municipal Code (Noise Control, Article 6, Subsection 18-314, Subsection E). Table 3.14-4 shows the noise and land use compatibility standards for the City of Santa Ana. These standards limit construction activities to between the hours of 7:00 a.m. and 8:00 p.m., Monday through Saturday, and never on Sundays or city-observed federal holidays.

3.14.2 Sensitive Receptors

Residences, schools, libraries, hospitals, and recreational areas are generally considered sensitive noise receptors. Existing on-site residential developments are considered sensitive noise receptors. The area surrounding the site contains numerous sensitive receptors in the cities of Irvine, Tustin, Santa Ana, and the County of Orange.

Table 3.14-2
City of Tustin
Noise/Land Use Compatibility Standards

Land Use Categories		Community Noise Equivalent Level CNEL (dBA)						
Categories	Uses	<55	60	65	70	75	80>	
RESIDENTIAL	Single Family, Duplex, Multiple Family	A	A	B	C	C	D	D
RESIDENTIAL	Mobile Home	A	A	B	C	C	D	D
COMMERCIAL Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
COMMERCIAL Regional, village District, special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
COMMERCIAL INDUSTRIAL INSTITUTIONAL	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
COMMERCIAL Recreation	Childrens' Amusement Park, Miniature Golf Course, Co-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
COMMERCIAL General, special INDUSTRIAL, INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehouse, Wholesale, Utilities	A	A	A	A	B	B	B
INSTITUTIONAL General	Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
OPEN SPACE	Parks	A	A	A	B	C	D	D
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
AGRICULTURE	Agriculture	A	A	A	A	A	A	A

Interpretation

A – Clearly Compatible: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

B – Normally Compatible: New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

C – Normally Incompatible: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

D – Clearly Incompatible: New construction or developments should generally not be undertaken.

Source: City of Tustin 1994a

Table 3.14-3
City of Irvine
Noise/Land Use Compatibility Standards

Land Use Categories		Energy Average (CNEL)						
Categories	Uses	<55	60	65	70	75	80>	
RESIDENTIAL	Single Family	A	A	B	B	C	D	D
RESIDENTIAL	Mobile Home	A	A	B	C	C	D	D
COMMERCIAL . . Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
COMMERCIAL Regional, village District, special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
COMMERCIAL INDUSTRIAL INSTITUTIONAL General	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
COMMERCIAL Recreation	Childrens' Amusement Park, Miniature Golf Course, Co-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
COMMERCIAL General, special INDUSTRIAL General INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehouse, Wholesale, Utilities	A	A	A	A	B	B	B
INSTITUTIONAL General	Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
OPEN SPACE	Parks	A	A	A	B	C	D	D
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
AGRICULTURE	Agriculture	A	A	A	A	A	A	A

Interpretation

A – Clearly Compatible: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

B – Normally Compatible: New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

C – Normally Incompatible: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

D – Clearly Incompatible: New construction or developments should generally not be undertaken.

Source: City of Irvine 1997

Table 3.14-4
City of Santa Ana
Noise/Land Use Compatibility Standards

Land Use	Desirable Maximum (CNEL)	Maximum Acceptable (CNEL)
Residential, Low Density	55	65
Residential, Medium Density	60	65
Residential, High Density	65	70
Schools	60	70
Commercial, Office	65	75
Industrial	70	75

Source: City of Santa Ana 1997

3.14.3 Existing Noise Sources and Noise Levels

The major noise sources at and near the site are motor vehicles and railroad trains. There are currently no aircraft operations at MCAS Tustin but the historic helicopter noise is addressed under baseline, Section 3.14.4. The MCAS Tustin site is both a source and a receptor of noise.

Traffic Noise

Noise from vehicular traffic generates noise levels of 70 dB CNEL or greater on many streets adjacent to or near the reuse plan area. Adjacent to the Air Station, only Warner Avenue does not have a 70 dB CNEL at 75 feet from the street centerline along abutting properties, due to its low traffic volumes. A listing of selected existing traffic noise levels on major roadways near the site is shown in Table 3.14-5. The noise levels were calculated from the existing traffic volumes listed in the MCAS Tustin traffic study, Appendix F to this EIS/EIR, using the Federal Highway Administration (FHWA) *Highway Traffic Noise Prediction Model* (1978). Noise levels greater than 65 dB CNEL could be incompatible with adjacent land uses, in accordance with the standards shown in Tables 3.14-2 through 3.14-4. However, most of the residential developments on major roadways in the area have solid walls between the roads and the homes. These walls provide noise attenuation, and are likely to reduce the exterior noise levels to 65 dB CNEL or less.

Railroad Noise

The MCAS Tustin site is affected by noise from an existing railroad parallel to Edinger Avenue. Until 1994, noise was generated only by Amtrak passenger trains and Atchison, Topeka and Santa

Table 3.14-5
Selected Existing Traffic Noise Levels

City Roadway	Noise Level (NL) at 75 feet from roadway centerline, dB CNEL		
	NL≤70	65 < NL < 70	NL < 65
Tustin			
Red Hill north of Warner	X		
Red Hill north of Edinger	X		
Red Hill south of Edinger	X		
Red Hill north of I-5	X		
Valencia west of Red Hill			X
Tustin/Santa Ana			
Red Hill north of Dyer/Barranca	X		
Tustin/Irvine			
Barranca east of Red Hill	X		
Harvard north of Warner		X	
Harvard south of Irvine Center		X	
Harvard north of Irvine Center		X	
Harvard north of Warner		X	
Jamboree north of Barranca	X		
Santa Ana			
Warner east of Grand		X	
Irvine			
Barranca east of Jamboree		X	
Harvard north of Barranca		X	
Irvine east of Jamboree		X	
Warner east of Culver			X
Warner west of Culver			X
Warner west of Harvard			X

Fe (AT&SF) freight trains. Noise from the trains, combined with noise from vehicular traffic on Edinger Avenue generated an average noise level of about 70 dB CNEL at the MCAS Tustin northern boundary (City of Tustin 1993a).

In March 1994, the SCRRA began the Metrolink Orange County Line commuter rail service. The current number of Metrolink trains on the line is 19 (Metrolink 1999). The current number of Amtrak passenger trains on the line is approximately 30 (Amtrak 1999). Freight trains of the Burlington Northern Santa Fe also use the tracks. The Draft Noise Element of the City of Tustin General Plan (City of Tustin 1997a) indicates that an increase of railroad noise up to 6 dB CNEL may be expected by the year 2010 due to increased commuter rail traffic. Maintenance of the railroad track, which may occur between midnight and 4:00 a.m., when fewer trains are scheduled to operate, may include noisy, heavy on-track equipment, bright lights, and dust (OCTA 1998).

Aircraft Noise

John Wayne Airport is located about two miles to the southwest. MCAS Tustin is not included in the John Wayne Airport Planning Area. The Airport Environs Land Use Plan does not show a 60 dB CNEL contour over MCAS Tustin from John Wayne Airport (Airport Land Use Commission 1995).

3.14.4 Baseline Noise Sources and Noise Levels

As described in Section 3.0, the noise impact analyses compare traffic conditions for each reuse alternative and the No Action Alternative with a corresponding "baseline" condition. The following sections describe the baseline noise sources and levels.

Traffic Noise

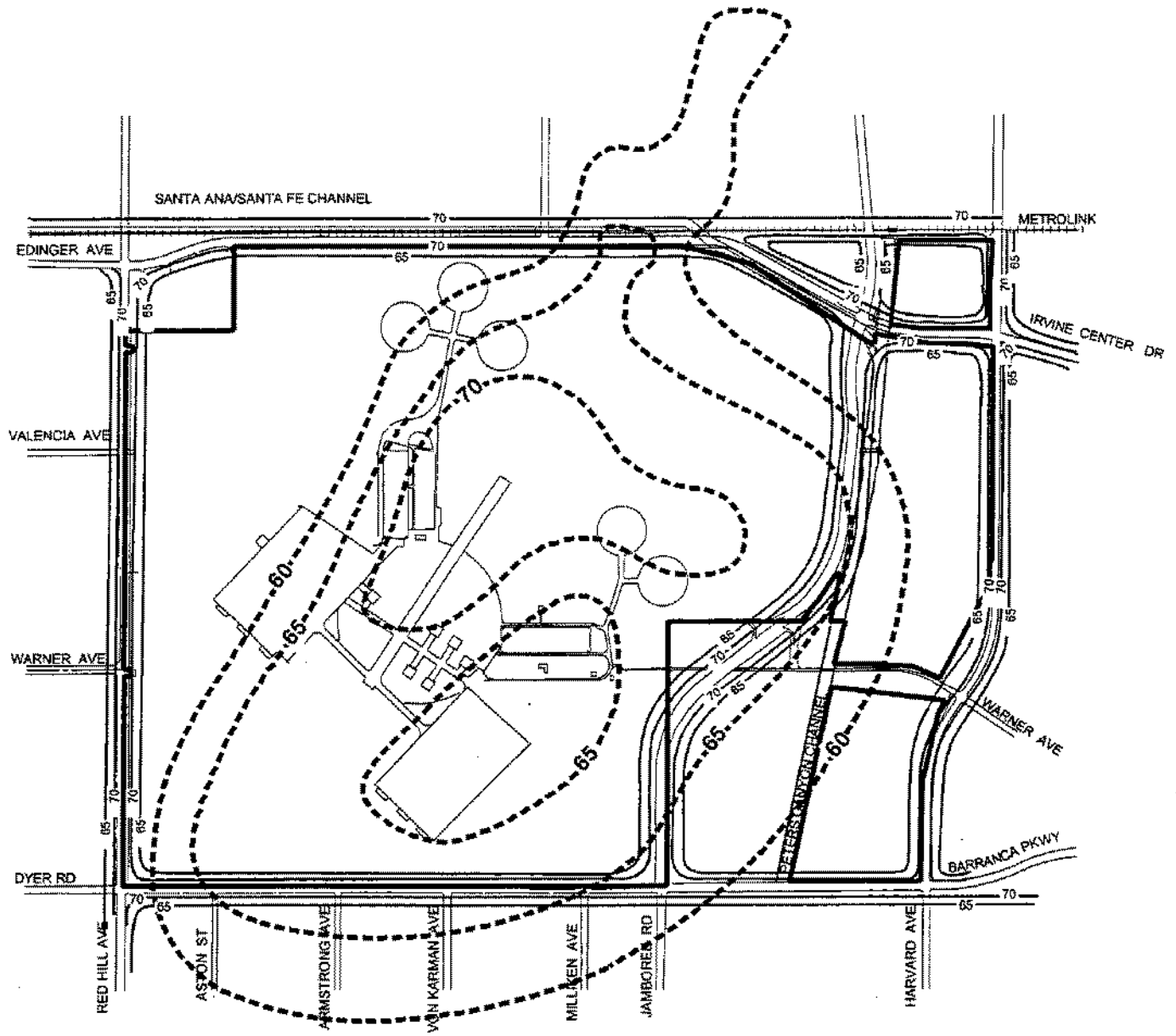
As indicated in Section 3.12 of this EIS/EIR, comparison of traffic counts taken in 1993 and 1997/98 in the reuse plan area indicate similar volumes. Therefore, baseline traffic noise levels are similar to the existing traffic noise levels described in Section 3.14.3 and Table 3.14-5, above. Baseline traffic noise contours are shown on Figure 3.14-1.

Railroad Noise

In the NEPA baseline condition, there were Amtrak and freight operations on the rail line but, as described in Section 3.14.3 above, Metrolink operations had not started. Baseline railroad noise contours are shown on Figure 3.14-1.

Aircraft Noise

In the baseline condition, military helicopter operations generated aircraft noise that affected the areas in the vicinity of the reuse plan area and around the flight paths. The runway is located in the center of the Air Station, and its operations exposed most of the site to a CNEL in the range of 65 to over 70 dB. Aircraft noise contours are shown in Figure 3.14-1. No residential land uses, within or outside of the reuse plan area, are within the 65 dB CNEL aircraft noise contour. Residential land uses within the 60 dB CNEL contour are limited to two portions of military housing on either side of Warner Avenue, adjacent to Jamboree Road.



REUSE PLAN BOUNDARY

70 TRAFFIC AND TRAIN NOISE CONTOURS,dB, CNEL

70 HELICOPTER NOISE CONTOURS, dB, CNEL

NOTE: TRAFFIC AND NOISE CONTOURS ARE FOR FLAT TOPOGRAPHY. THERE ARE WALLS AT RESIDENTIAL PROPERTIES WITHIN THE REUSE PLAN AREA ALONG EDINGER AVENUE AND ALONG HARVARD AVENUE THAT ATTENUATE TRAFFIC NOISE BY AT LEAST 5 dB. THERE ARE ALSO WALLS AT MOST OFF SITE RESIDENTAIL AREAS THAT FACE MAJOR ROADWAYS.

Source: Traffic Noise Contours based on traffic volumes from *MCAS Reuse Plan Traffic Study*, City of Tustin, March 1999; Aircraft Noise Contours from *Masterplan Marine Corps Air Station Tustin*, DON 1989

Base map: HNTB 1999

500 0 1000 2000 ft

Figure 3.14-1
Baseline Aircraft and Traffic Noise Contours

CHAPTER 4.0
ENVIRONMENTAL CONSEQUENCES

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CHAPTER 4.0
ENVIRONMENTAL CONSEQUENCES

Chapter 4 of this EIS/EIR addresses the environmental consequences of the proposed disposal and reuse of MCAS Tustin and an adjacent area with respect to 14 environmental issue areas. The NEPA analysis addresses the direct impacts of the disposal and the indirect impacts of reuse. The CEQA analysis addresses the direct and indirect impacts of reuse. Each issue is addressed in its own section, numbered as follows:

4.1	Land Use	4.8	Agricultural Resources
4.2	Socioeconomics	4.9	Soils and Geology
4.3	Utilities	4.10	Water Resources
4.4	Public Services and Facilities	4.11	Hazardous Wastes, Substances, and Materials
4.5	Aesthetics	4.12	Traffic/Circulation
4.6	Cultural and Paleontological Resources	4.13	Air Quality
4.7	Biological Resources	4.14	Noise

Each of the disposal/reuse alternatives are analyzed from the viewpoint of these 14 environmental issues. Each discussion is organized as follows:

- Significance Criteria - This subsection presents a discussion of the criteria that are used to determine the significance of potential environmental effects.

- DON Disposal of MCAS Tustin - This subsection analyzes the direct environmental effects of DON's disposal of MCAS Tustin, without consideration of reuse options.

- Alternative 1 - This subsection addresses the direct and indirect environmental consequences of the LRA's proposed Reuse Plan for MCAS Tustin and an adjacent area. The reuse plan can be characterized as arterial loop pattern, community care, medium residential. Measures that can be taken to reduce impacts to a level below significant are suggested, as required.

- Alternative 2 - This subsection analyzes the direct and indirect environmental consequences of a reuse plan based on development of the site with a land use plan characterized as an "arterial grid pattern, no community core, high residential."

Measures that can be taken to reduce impacts to a level below significant are suggested, as required.

- Alternative 3 - This subsection analyzes the direct and indirect environmental consequences of a reuse plan based on development of the site with a land use plan characterized as "arterial loop pattern, reserve area, low residential." Measures that can be taken to reduce impacts to a level below significant are suggested, as required.

- No Action Alternative - This subsection addresses the environmental consequences of retaining MCAS Tustin in caretaker status in DON ownership. Measures that can be taken to reduce impacts to a level below significant are suggested, as required.

4.1 LAND USE

The following discussion focuses on compatibility of proposed actions with land uses on the site, compatibility with existing and planned land uses adjacent to the site, consistency with the City of Tustin and City of Irvine General Plans and zoning ordinances as well as the AELUP for the John Wayne Airport.

4.1.1 Significance Criteria

Land use impacts can be associated with physical development and with the compatibility of such development with existing and planned land uses. For the purposes of this analysis, each alternative is assessed in terms of action-related land use impacts in relation to land uses within the study area. For physical development (land use compatibility), a significant adverse impact would occur if the proposed land use, without mitigation to reduce impacts to a level of insignificance, was not compatible with, or conflicted with, adjacent existing or planned land uses in the surrounding area, or within the reuse plan area itself.

Impacts can also be related to the level of consistency with local land use policy plans (general plans, zoning, master plans, etc.) and institutional controls, and with federal and state reuse acts and policies. A significant adverse land use impact would occur if an alternative would not be consistent with the *Tustin General Plan* (City of Tustin 1994), the City of Tustin zoning ordinance, the *City of Irvine General Plan* (City of Irvine 1995a), the City of Irvine zoning ordinance, or the AELUP (Airport Land Use Commission for Orange County 1995), and such inconsistencies could not be mitigated.

4.1.2 DON Disposal of MCAS Tustin

Impacts and Mitigation Measures

DON disposal would not change on-site land uses, and the disposal would be consistent with the City of Tustin and City of Irvine General Plans and zoning ordinances because military land uses would remain consistent with military designations. The disposal of MCAS Tustin in and of itself would not have a significant effect on existing or planned land uses. No mitigation measures would be required.

4.1.3 Alternative 1

Impacts

Land Use Compatibility

Alternative 1 would provide for three major land use areas: residential in the northeast and southeast, mixed-use Community Core and Learning Village in the north-central portion of the site, and local and regional commercial/business uses in the southwestern portion of the site. Within the residential area, schools, parks, and other public facilities would be provided to support the future residential community with adequate infrastructure. The residential area would be cohesive, buffered from the commercial portion of the site by major roadways and an intervening mixed-use commercial core and learning village area. This pattern of development, where similar uses are clustered within a defined area and the mixed-use area provides a transition between residential and commercial development, minimizes the potential for land use conflicts, and helps to provide compatible development within the entire reuse plan area. To further minimize project specific compatibility issues, development standards such as landscaping, setbacks and buffers are appropriate for this alternative.

Development under Alternative 1 would result in a substantial change in existing land use by replacing military and agricultural uses with civilian urban uses. Existing buildings and facilities would be retained and rehabilitated if economically feasible. Some buildings and facilities would be removed if needed for orderly development or if not economically feasible. Agricultural uses are the most likely to conflict with other internal land uses because they generate dust and noise. This interim land use would be phased out concurrent with development. Therefore, land use impacts related to existing facilities at the site as development occurs would be less than significant.

Under Alternative 1, proposed residential and village service uses in the northeasterly portion of the reuse plan area would be situated adjacent to existing residential neighborhoods to the northeast across Edinger Avenue in the City of Tustin. Residential uses located along Harvard Avenue, adjacent to and within the City of Irvine, would be developed with Low Density (1-7 dwelling units per acre), Medium Density (8-15 dwelling units per acre), and Medium High Density (16-25 dwelling units per acre) residential uses. The low density bousing is proposed between Edinger Avenue and Warner Avenue and the medium density housing would be located between Warner Avenue and Barranca Parkway. These locations contain existing military housing that is generally compatible with existing residential development on the other side of Harvard Avenue in the City

of Irvine. Additionally, there is an existing landscape setback and noise wall along Harvard Avenue which buffers these existing uses. The medium high density development would be located on undeveloped land on the other side of Edinger Avenue. This development would be adjacent to higher density development in Village 38 and both would be buffered by an existing setback, landscaping and recreation facilities associated with that existing development. These densities would be generally comparable with residential densities in adjacent residential neighborhoods in Irvine, across Harvard Avenue.

Commercial and Commercial Business uses would be compatible with business park and light industrial uses, across Barranca Parkway in the Irvine Business Center (IBC) in the City of Irvine and across Red Hill Avenue in the cities of Santa Ana and Tustin. A mixture of Learning Village, and Commercial uses in the western portion of the site would be generally compatible with existing light industrial and research and development uses across Red Hill Avenue in both Santa Ana and Tustin.

While in many instances, this alternative would merely continue an existing land use (i.e., military family housing would remain residential), in other locations the alternative would replace a low-intensity use (i.e., cultivated field) with high intensity use (i.e., hotel and ancillary commercial uses at Jamboree Road/Edinger Ave). There is the potential for land use incompatibility with adjacent uses or internally if development is not sensitively designed. Individual, site-specific compatibility impacts could be addressed by appropriate site design such as buffering, screening, setbacks, landscaping, etc. At the level of this general reuse plan there is no mechanism to ensure such features are incorporated, so potentially significant land use compatibility impacts would require mitigation.

Land Use Policy

City of Tustin

The current general plan land use designations for that portion of the Air Station within the City of Tustin are *Military* and *Public/Institutional.* The current zone classification is Public and Institutional. Alternative 1 would be inconsistent with existing general plan designations and zone categories, which is an impact requiring mitigation. The City of Tustin anticipated the disposal and reuse of the Air Station, to the extent possible in 1994, by establishing an MCAS Tustin reuse plan area Special Management Area (SMA). Under the reuse plan area SMA, the site would be governed by a Planned Community District or reuse plan area. There is also a second SMA; Future MCAS

Tustin/Adjoining Area Redevelopment Project. That SMA reflects the City's intent to create a redevelopment project area on the site and an adjacent area for purposes of financing. A preliminary Redevelopment Plan has been adopted which is consistent with the proposed Alternative 1 land use plan.

City of Irvine

The City of Irvine currently designates a 95-acre portion of the site within its boundaries as *Military and Development Reserve* in its general plan and zoning code. These designations and zoning would not be consistent with proposed land uses. Therefore, Alternative 1 would not be consistent with the City of Irvine general plan and zoning ordinance which is an impact requiring mitigation.

County of Orange

Alternative 1 would result in an urban level of development in the reuse plan area. The Airport Land Use Commission for Orange County has a review policy for buildings of certain heights within the reuse plan area to reduce interference with flight operations due to tall structures. The height policy trigger ranges from 110 to 200 feet depending on the location in the site. The height value is not a limit, instead it is a policy guideline to trigger input on appropriate building proposals.

Under Alternative 1, only buildings in the Community Core could exceed the height restrictions for the site. Any structure within the reuse plan area that might trigger the height threshold would be subject to review by the FAA and the Airport Land Use Commission. There would be no significant impact.

Department of the Navy

All flight operations at MCAS Tustin have ceased. The cessation of these activities has resulted in beneficial secondary land use impacts, such as air quality and noise. Flight-related land use restrictions, such as clear zones and APZs have ceased as well. The end of these restrictions, with the exception of the Browning/GCA Corridors discussed below, would not result in any land use impacts.

The Browning Corridor and GCA Corridor easements are terminated once MCAS Tustin was no longer an active military station. The flight-related height restrictions and land use restrictions within each corridor are terminated as well. Existing zoning within the Browning Corridor and GCA

Corridor already control land use and building heights, and the applicable zoning ordinance will continue to restrict land use and building heights, similar to surrounding urban development. Hence, the impact on land use within these easements would be less than significant under Alternative 1. However, the removal of restrictions on residential and institutional uses within Zones A and B (between Bryan Avenue and the reuse plan area) could lead to growth-inducement. This issue is evaluated in Chapter 6. It should be noted that within the easement, the Irvine General Plan currently designates some undeveloped land for residential uses.

Mitigation Measures

LU-1 The City of Tustin shall amend its General Plan and zoning ordinance to be consistent with planned land uses. Any zoning ordinance shall include site design measures such as buffering, landscaping, screening, and setbacks, to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of development on the site is at least similar in quality to other master planned areas in Tustin and other adjacent cities.

LU-2 The City of Irvine shall amend its General Plan and zoning ordinance to be consistent with planned land uses. Any zoning ordinance shall include site design measures such as buffering, landscaping, screening, and setbacks, to ensure high quality development and compatibility between land uses. The goal is to assure that the overall appearance of development on the site is at least similar in quality to other master planned areas in Tustin and other adjacent cities.

4.1.4 Alternative 2

Impacts

Land Use Compatibility

Within the Site

The pattern of land uses under Alternative 2 would address the potential for conflicts and would result in generally compatible development within the site. Low density residential uses would be clustered, away from commercial uses. Higher density residential uses would be the closest to commercial uses, and thus would buffer the more sensitive lower density neighborhoods. Major

roadways would continue to separate different land uses. Individual development projects within the site may have site-specific compatibility impacts that could be addressed by appropriate site design such as buffering, screening, setbacks, landscaping, site design, etc. However, no mechanism exists to ensure these design features would be instituted. Therefore, internal land use compatibility impacts could occur under Alternative 2 requiring mitigation.

Existing buildings and facilities would be retained and rehabilitated if economically feasible. Some buildings and facilities would be removed if needed for orderly development or if not economically feasible. Agricultural uses would be phased out concurrent with development. Therefore, land use impacts related to existing facilities at the site as development occurs would be less than significant.

With Surrounding Uses

Land uses under Alternative 2 would be generally compatible with surrounding land uses. Residential, golf course, and public institutional/commercial uses would be compatible with existing residential and commercial uses across Edinger Avenue in the City of Tustin. Residential uses located adjacent to the City of Irvine are proposed for a mixture of densities reflecting both the existing character of military family housing to be reused/rehabilitated and existing development in Irvine. The higher density would be the Medium High (16-25 dwelling units/acre) located in the undeveloped parcel at Edinger Avenue and Harvard Avenue. Here the density would be generally comparable to residential densities in the vicinity in the City of Irvine (Village 38). Additionally, Village 38 contains a setback from Harvard Avenue with intervening landscaping and recreation facilities which would generally buffer the two uses.

Commercial and Commercial Business uses in the southern portion of the site would be generally compatible with business park and light industrial uses across Barranca Parkway, in the IBC in the City of Irvine. A mix of Learning Village, and Commercial uses would be generally compatible with existing light industrial and research and development uses across Red Hill Avenue, in the cities of Santa Ana and Tustin. Required setbacks, screening, landscaping, and other development standards and regulations would provide buffering between the surrounding uses and the site. However, no mechanism to ensure this compatibility has been formulated. Therefore, potential external land use compatibility impacts would require mitigation under Alternative 2.

Land Use Policy

City of Tustin

Alternative 2 would be inconsistent with existing general plan designations and zoning which is a significant land use impact requiring mitigation. Additionally, under the reuse plan area SMA, any future development in the reuse plan area must adopt a reuse plan area or Planned Community District.

City of Irvine

Alternative 2 designations would not be consistent with the general plan and zoning categories of the City of Irvine. This is a significant impact requiring mitigation.

County of Orange

Alternative 2 would result in an urban level of development in the reuse plan area. The Airport Land Use Commission for Orange County has a review policy for buildings of certain heights (110 to 200 feet) within the reuse plan area to reduce interference with flight operations due to tall structures. This policy is not a height limit. Instead it is a threshold which triggers input on any building proposal. While it is unlikely that building heights would exceed these heights, any structure within the reuse plan area shall be subject to review by the FAA and the Airport Land Use Commission. There would be no significant impacts.

Department of the Navy

All flight operations at MCAS Tustin have ceased, resulting in beneficial secondary land use impacts. Flight-related land use restrictions, such as clear zones and APZs, have become unnecessary. The end of these restrictions, with the exception of the Browning/GCA Corridors discussed below, would not result in any land use impacts.

When the Browning Corridor and GCA Corridor easements expire, applicable zoning will continue to guide building heights and land use types. There would be a potential for residential development to occur where it was previously restricted. Although, even under restrictions, one area in the easement was designated residential under the Irvine General Plan. This is evaluated in growth inducement, which is included in Chapter 6.

Mitigation Measures

Mitigation measures LU-1 and LU-2 shall be implemented to ensure that the cities of Tustin and Irvine General Plans and zoning ordinances are amended, and that appropriate site design policies and a design review process are instituted to address site compatibility issues.

4.1.5 Alternative 3

Impacts

Compatibility of Land Uses

Within the Site

Alternative 3 would generally minimize the potential for conflicts within the site by locating low- and medium-density residential uses away from commercial uses, and by locating public, institutional, and recreation uses in the central portion of the site as a buffer between residential and commercial uses. Major roadways would separate different land uses. There is the potential for individual projects to have site-specific compatibility impacts. Design features to address this issue are not ensured by the standard development process. Therefore, potential land use compatibility impacts would require mitigation.

Some existing buildings and facilities would be retained and rehabilitated if economically feasible. Some buildings and facilities would be removed for orderly development or if not economically feasible. Agricultural uses would be phased out concurrent with development.

With Surrounding Uses

Residential uses under Alternative 3 would be generally compatible with residential uses across Edinger Avenue in Tustin, and residential uses across Harvard Avenue in Irvine. Commercial/ Business uses proposed along Edinger Avenue between Jamboree Road and Harvard Avenue would require buffering from adjacent residentially designated areas in Irvine. Although existing adjacent residential development in Irvine (Village 38) has been designed with buffering from Harvard Avenue, sensitive site design of non-residential uses would be warranted to ensure compatibility between these two types of uses. Public and recreation uses would occupy the northwestern and central portions of the site, compatible with a mix of commercial uses across Red Hill Avenue in

Tustin and Santa Ana. Commercial uses would be concentrated in the southern portion of the site, compatible with the IBC across Barranca Parkway in Irvine.

Setbacks, screening, landscaping, and other development standards and regulations could ensure external land use compatibility, but these elements may not be ensured by the standard development process. Potential external land use compatibility impacts would require mitigation.

Land Use Policy

City of Tustin

Alternative 3 would be inconsistent with the Tustin General Plan and the zoning code which would be a significant land use impact requiring mitigation. Additionally, a Planned Community District or reuse plan area should be adopted to guide detailed development of the site.

City of Irvine

This alternative would be inconsistent with the general plan and zoning ordinances for the City of Irvine, and impacts would be significant.

County of Orange

Alternative 3 would result in an urban level of development in the reuse plan area. The Airport Land Use Commission for Orange County bas a review policy for buildings exceeding certain heights within the reuse plan area to reduce interference with flight operations due to tall structures. Under Alternative 3, only buildings in the Reserve Area may exceed the height restrictions for the site, but they would be subject to appropriate review. There would be no significant impact.

Department of the Navy

The impacts to Alternative 3 associated with the cessation of flight activities at MCAS Tustin and the Browning Corridor and GCA Corridor would be similar to those discussed for Alternative 1.

Mitigation Measures

Mitigation measures LU-1 and LU-2 shall be implemented to ensure that the cities of Tustin and Irvine General Plans and zoning ordinances are amended. Any zoning ordinance amendments shall contain site design policies and a design review process to address site compatibility issues.

4.1.6 No Action Alternative

Impacts

The No Action Alternative would retain the Air Station in a caretaker status under DON control. No disposal action would occur. Military flight and ground operations would cease, but the existing structures and grounds would be maintained to minimize deterioration. Environmental cleanup would continue in conformance with federal requirements and ongoing military programs, but over a longer period of time, as no reuse requirements would need to be met. Under this alternative, existing agricultural leases would continue and/or additional leases could be granted for limited uses.

Land Use Compatibility

The No Action Alternative would cause no physical changes in the existing setting of MCAS Tustin. Environmental cleanup and possibly agriculture would continue. Therefore, there would be no on-site land use compatibility impact. However, such uses would not be consistent with surrounding urban uses in Tustin and Irvine.

Land Use Policy

City of Tustin

As the federal government would retain ownership of the Air Station under the No Action Alternative, the site would remain outside the jurisdiction of the local communities. With no change in land uses, this alternative would be consistent with the existing Military and Public/Institutional land use designations in the of the City of Tustin General Plan. The impact of the No Action Alternative on land use policy plans would be less than significant.

City of Irvine

The caretaker status of the No Action Alternative would be consistent with the current general plan designations of Military and Development Reserve in the City of Irvine. No impact would result.

County of Orange

The No Action Alternative would result in caretaker status of the MCAS Tustin portion of the reuse plan area. No buildings would be constructed to trigger the height limit review. There would be no impact associated with the No Action Alternative.

Department of the Navy

The Browning Corridor and GCA Corridor easements are terminated. The cancellation of these easements has removed the flight-related height restrictions and land use restrictions within eacb corridor.

Existing zoning within the Browning Corridor and GCA Corridor already control land use and building heights, and the applicable zoning ordinance restricts land use and building heights, similar to surrounding urban development. Hence, the impact on land use within these easements would be less than significant under the No Action Alternative. However, the end of restrictions on residential uses within those zones that could otherwise allow such uses may lead to growth-inducement. This topic is discussed in Chapter 6.

Mitigation Measures

The No Action Alternative would not result in significant impacts; therefore, no mitigation measures would be required.

4.2 SOCIOECONOMICS

Potential direct and indirect impacts on population, housing, and employment resulting from the proposed disposal and reuse of MCAS Tustin are discussed in this section. As discussed in section 3.2, under NEPA "economic" and "social" effects are environmental consequences to be examined (40 C.F.R. § 1502.16 and 40 C.F.R. § 1508.8), but CEQA does not require a discussion of socioeconomic effects, only population and housing. According to the implementing guidelines for CEQA: "An economic or social change by itself shall not be considered shall not be considered a significant effect on the environment." However, "a social or economic change related to a physical change may be considered in determining whether the physical change is significant" (Cal. Code Regs. Title 14 § 15382). To the extent the socioeconomic effects discussed in this section are related to potential physical changes to the environment, those environmental effects and mitigation measures, if required, are discussed for CEQA purposes in sections 4.1, 4.3 through 4.14, and Chapters 5, 6, and 7. Where mitigation measures are mentioned in Section 4.2, they are not intended to mean mitigation measures as required by CEQA.

4.2.1 Significance Criteria

Socioeconomic Impacts

Population impacts are considered neither adverse nor beneficial by themselves; however, population impacts may have ramifications for other environmental issues, i.e., increased demand for parks. The significance of other impacts are defined in pertinent sections of this document. The following significance criteria are utilized for assessing socioeconomic impacts:

- *Plans and Policies.* Socioeconomic impacts are considered significant if the alternative would preclude economic recovery as guided by the *Consideration of Economic Needs* (Pub. L. 103-160 § 2903(c)), or would be inconsistent with the objectives of President Clinton's Five Point Program and Governor Wilson's Executive Order W-81-94.

- *Housing.* Because one purpose and need for reuse is to generate housing to satisfy an identified shortfall, any increased housing availability would be beneficial. The Housing Element of the General Plan also identifies an "affordability gap," so increased availability of affordable housing would be beneficial. The more housing generated, the greater the beneficial impact. Any changes that would cause displacement of existing housing or preclude the development affordable housing units would be significant.

- *Employment.* Increased employment opportunities would be beneficial, and the more jobs generated, the more beneficial the impact.

- *Jobs-Housing Balance.* The 2020 Orange County jobs to housing ratio projected by OCP-96 Modified is 1.8. A reduction in the jobs to housing ratio would be considered beneficial. Provision of housing or employment that would increase the jobs to housing ratio above 1.8 would be a significant impact.

4.2.2 Navy Disposal of MCAS Tustin

Impacts and Mitigation Measures

No direct socioeconomic impacts would result from Navy disposal of MCAS Tustin because the disposal is simply a transfer of title. This action, in and of itself, would not affect regional employment, income, population, or housing. No mitigation under NEPA is necessary.

4.2.3 Alternative 1

Impacts

Plans and Policies

Alternative 1 would fulfill the federal purpose of revitalization of closed military installations because it would generate employment and economic benefits, as shown below. It would also meet the objectives of the *California Military Base Task Force Report*, as shown below. The LRA Reuse Alternative would meet the objectives of Governor Wilson's Executive Order W-81-94 because it would create employment, as shown below.

Population

The development of the reuse plan area would result in an increase in Tustin's and Irvine's population through the provision of new housing units. Population has been estimated based on population factors by housing type developed by the City of Tustin. Both the generation factors and the resulting population estimates are shown in Table 4.2-1. As shown, development under Alternative 1 would result in an estimated total population of 12,500 people. Of this total, 10,900 persons would reside in the City of Tustin and 1,600 within the City of Irvine. Subtracting the baseline population of approximately 3,150

Table 4.2-1
Alternative 1 Population Generation[1]

Housing Type	Number Dwelling of Units	Generation Factor (persons/DU)	Total New Population
Low Density	1,165	3.25	3,786
Medium Density	1,023	2.73	2,793
Medium High Density	588	2.12	1,247
Golf Residential	934	2.73	2,550
Community Core Residential	891	2.12	1,889
Transitional/Emergency/Abused Children	N/A	N/A	250
Total			12,514
Existing Military Personnel and Dependents			(3,150)
Net Population Change (see text)			9,350

[1] All figures are estimates and approximations only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.
Source: City of Tustin 1999h

dependents of Marine Corps personnel, the net population increase would be approximately 9,350 persons. The environmental impacts associated with this population increase are discussed in sections 4.1; 4.3 through 4.14; and Chapters 5, 6, and 7.

Housing

Alternative 1 would provide up to 4,601 housing units on the site at build-out (refer to Table 2-6). Over a third of these units, or 1,537 units, are existing military housing that could be converted to civilian use or reconstructed in the event that rehabilitation is not economically feasible; therefore, no displacement of existing housing would occur. This housing is mostly low density (1-7 dwelling units/acre) with some medium density (8-15 dwelling units/acre) and medium high density (16-25 dwelling units/acre). New housing would consist of up to 3,064 units, to be developed over the next 20+ years in stages dependent on market conditions (City of Tustin 1998). Since the military housing units were not previously available to the civilian market the total gain would be 4,601 units.

While the new housing would provide a range of housing types, most units would be in the low and medium density ranges. Up to 1,699 units of medium high density housing, which is generally more affordable than low density housing, would be developed on the site in the areas designated for Medium High Residential Community Core uses. Alternative 1 would also result in affordable

housing in selected areas which would address the needs of the homeless, as well as those of low and moderate income. This reuse alternative would be consistent with Tustin's goal of addressing the housing 'affordability gap' identified in the city's General Plan (Tustin 1997) as well as the goals of the City of Irvine's Comprehensive Affordability Strategy (City of Irvine 1995a).

One of the purposes of civilian reuse of the site identified by the City of Tustin is provision of housing to meet anticipated demand. This alternative would be consistent with that reuse goal which is a beneficial impact.

Through the provisions of affordable housing, Alternative 1 also addresses housing needs of the homeless. In *The Homeless Assistance Submission for MCAS, Tustin* (City of Tustin 1996d), the LRA addresses the issue of accommodating the needs of the homeless in a manner consistent with the policies of both Irvine and Tustin by utilizing the continuum of care model prepared by HUD. The fundamental components of the continuum of care system involving housing to be implemented under Alternative 1 would:

- Provide emergency shelter beds and intake assessment.
- Offer transitional housing and services which enable homeless persons to progress to self-sufficiency.
- Provide opportunities for permanent affordable housing by the private sector.

Housing provision would also be coordinated with other identified service needs for the homeless (and homelessness prevention). The City of Tustin coordinated outreach to representatives of state and local agencies interested in potential public conveyances as well as representatives of the homeless. The City of Tustin would accommodate five service providers as part of Alternative 1. In addition to the accommodated homeless service providers, Alternative 1 would contain a number of other features which support HUD and the continuum of care model.

Through provision of housing for all income levels, Alternative 1 would provide a beneficial impact and would meet one of the purposes of reuse identified by the LRA. Since no existing housing would be displaced, no significant impact would occur.

Employment

Alternative 1 would result in direct, indirect and induced, and construction-related employment. Direct employment would consist of the jobs generated within the reuse plan area. The direct employment would, in turn, generate additional indirect and induced employment throughout Orange County from purchases of goods and services by new businesses and employees. Construction-related employment would consist of the jobs generated during construction of new development or in the rehabilitation of existing development, including infrastructure, in the reuse plan area.

As shown in Table 4.2-2, development anticipated to occur under Alternative 1 would generate approximately 24,900 direct jobs, 15,100 indirect and induced jobs, and 37,500 construction-related jobs in Orange County at build-out, for a total of approximately 77,400 jobs (information on employment generation factors are provided in Appendix E). Generation of this employment would occur in stages over a period of 20+ years, dependent on market conditions, land availability, and other factors.

Table 4.2-2
Alternative 1 Employment Generation

Land Use Designation	Direct Employment	Indirect and Induced Employment	Construction Employment	Total [1] Employment
Low Density Residential	0	0	4,138	4,138
Medium Density Residential	35	10	2,873	2,918
Medium High Density Residential	0	0	1,835	1,835
Transitional/Emergency Housing	45	13	107	165
Commercial/Business	10,960	7,475	8,423	26,858
Commercial	1,117	362	1,391	2,870
Village Services	524	170	653	1,347
Community Core	10,317	6,467	8,786	25,570
Golf Village	437	147	1,460	2,044
Learning Village	395	112	3,339	3,846
Community Park	67	19	84	170
Regional Park	955	306	1,189	2,450
Arterial Roadway/ Infrastructure	0	0	3,188	3,188
Total [1]	24,852	15,081	37,466	77,401

[1] Totals may not add due to rounding.
Note: All figures are approximations only. Figures in text are rounded for discussion purposes. Derivation of employment generation calculations on file with City of Tustin.
Source: City of Tustin 1999e

Not all these jobs would represent new employment, since some of these jobs would replace employment provided at MCAS Tustin. The cessation of military activities at the Air Station under Alternative 1 would eliminate approximately 400 jobs currently beld by civilian personnel.[1] Therefore, Alternative 1 would generate approximately 24,500 direct jobs in the reuse plan area.

This would be a beneficial impact, as one clear goal of the LRA is job generation. This alternative would produce 24,100 more civilian employment than under military operation which is considered beneficial.

Jobs-Housing Balance

In regional terms, Alternative 1 would add both bousing and jobs to Orange County. However, based on the projections prepared by the City of Tustin (City of Tustin 1999i), approximately ten percent of these jobs could be new to Orange County. Communities in Orange County, including the City of Tustin, have been making significant efforts to create jobs for their residents. About 90 percent of the new employment generated under Alternative 1 would be filled by current residents of Tustin, Irvine, Santa Ana, and other communities in Orange County, rather than by people migrating into the County from other regions and seeking housing.

Alternative 1 would generate approximately 24,900 direct jobs. The employment-induced migration into the area from outside the Orange County region would therefore be approximately 2,490 employees. Based on this same methodology, new employees to the county from indirect and induced employment are expected to total approximately 1,510. The simple ratio of 4,000 new jobs (direct, indirect, and induced) divided by 4,601 new housing units results in a jobs-housing ratio of 0.87 which is well below the projected county-wide ratio of 1.8 projected for 2020.

These new employees would generate demand for approximately 2,197 housing units within the county (City of Tustin 1999i). Even if all these employees were to seek bousing in the City of Tustin rather than dispersing throughout the entire county's area, this demand can easily be accommodated by the 4,601 housing units provided in the reuse plan area under Alternative 1.

[1] As noted in section 3.2, military jobs have also been lost through base closure; however, those jobs are not typically considered part of local employment as they are not open to civilian residents of the area. Nor are the individuals holding those jobs calculated as part of the local labor force.

Based on the above analysis, Alternative 1 would readily provide enough housing within its boundaries to balance new employment it generates and would not increase the projected County-wide jobs-housing ratio. Alternative 1 would not result in an adverse jobs-housing balance or a significant impact.

Fiscal and Economic

Table 4.2-3 presents information on the estimated value of proposed improvements on the site under Alternative 1. The information contained in Table 4.2-3 was provided by the City of Tustin (original data on file with the City).

Table 4.2-3
Alternative 1 Construction Value

Characteristic	Number/Amount (DU/Square Feet/Acres)	Construction Value (in 000's)
Residential (measured by number of dwelling units)		
Low Density Residential (1-7 DU/Acre)	1,421	$166,685
Medium Density Residential (8-15 DU/Acre)	1,701	$115,555
Medium High Density Residential (16-25 DU/Acre)	1,479	$79,616
Total Dwelling Units/Assessed Value	**4,601**	**$361,856**
Commercial/Institutional/Recreational (measured by number of square feet)		
Transitional Housing[1]	133,494	$5,000
Commercial/Business	4,305,251	$332,020
Commercial	713,412	$53,805
Village Services	315,592	$25,247
Community Core	3,630,726	$348,165
Golf Village (includes hotel)	280,526	$56,884
Learning Village	1,412,651	$131,474
Community Park	40,531	$3,242
Urban Regional Park	574,992	$45,999
Total Square Feet of Building Floor Area/Construction Value	**11,407,175**	**$1,001,837**
Arterial Roadway/Infrastructure (measured by number of acres)		
Roadway Improvements & Drainage Facilities; Demolition	**187**	**$144,901**
Total Estimated Value		**$1,508,595**

Note: All acreage figures are estimates only. Figures in the text are rounded for discussion purposes.
[1] Transitional housing is classified apart from other residential units for valuation purposes given that: (a) it is institutional in nature; and, (b) valuation is based on square footage rather than number of dwelling units.
Source: City of Tustin 1999e

Under baseline operation, MCAS Tustin had a payroll of greater than $51 million for 4,105 active duty military and 384 civilian personnel. Expenditures to the local economy based on payroll, given a multiplier ratio effect of 1.75 to 2.75, represented a contribution of $121 million to $173 million. Indirect employment based on baseline military and civilian employment is estimated an approximately 2000 jobs generated in the regional economy. Under Alternative 1, direct employment would be approximately 24,900, which is 5.5 times greater than the employment under baseline. While the value of payroll has not been calculated, it is appropriate to assume that direct payroll would be greater under reuse than the baseline condition and the multiplier effect would be greater as well.

Mitigation Measures

Alternative 1 would generate civilian jobs and housing, which would meet two LRA goals for reuse. Because Alternative 1 would not result in significant socioeconomic impacts, no mitigation would be required.

4.2.4 Alternative 2

Impacts

Plans and Policies

Alternative 2 would fulfill the federal purpose regarding revitalization of closed military installations because it would generate employment and economic benefits, as shown below. It would also meet the objectives of the *California Military Base Task Force Report*, as shown below. The LRA Reuse Alternative would meet the objectives of Government Wilson's Executive Order W-81-94 because it would create employment, as shown below.

Population

The development of the reuse plan area would result in an increase in Tustin's and Irvine's population through the provision of new housing units. Population has been estimated based on population factors developed by the City of Tustin and both the generation factors and resulting population estimates are shown in Table 4.2-4. As shown, development under Alternative 2 would result in an estimated total population of approximately 16,400 people. Of this total, approximately 14,800 persons would reside in the City of Tustin and approximately 1,600 in the City of Irvine.

Table 4.2-4
Alternative 2 Population Generation[1]

Housing Type	Number of Units	Generation Factor (persons/DU)	Total New Population
Low Density	1,729	3.25	5,619
Medium Density	2,132	2.73	5,820
High Density	1,309	2.12	2,775
Village Mixed-use	1,035	2.12	2,194
Total			16,409
Existing Military Personnel and Dependents			(3,150)
Net Population Change (see text)			13,250

[1] All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.
Source: City of Tustin 1999h

Subtracting the baseline population of approximately 3,150 dependents of Marine Corps personnel, net population increase would be approximately 13,250 persons. The environmental impacts associated with this population increase are discussed in sections 4.1; 4.3 through 4.14, and Chapters 5, 6, and 7.

Housing

Alternative 2 would provide up to 6,205 housing units at build-out (refer to Table 2-9). Existing housing on the Air Station would be reused and rehabilitated if feasible. A net gain of housing units would be achieved, with the effective net being equivalent to the total gain, as existing units are not available on the civilian market. This increase in housing units would be beneficial because it would satisfy one of LRA's goal for reuse.

About three-quarters of the housing units, or approximately 4,500 units, would be medium and high density housing, which is generally more affordable than low density housing. This provision of higher density housing, combined with the housing affordability plans for other residential areas, would have a beneficial effect of increasing the stock of more affordable housing in Tustin. This housing would help offset the potential for employment-induced demand for such housing in other surrounding communities that have a greater supply of affordable housing. Specifically, this reuse is consistent with Tustin's goal of addressing the housing 'affordability gap' identified in the city's General Plan (Tustin 1997a) as well as the goals of the City of Irvine's Comprehensive Affordability Strategy (City of Irvine 1995a). Since no existing housing units would be displaced and affordable housing would be provided, no significant impact would occur.

Employment

Alternative 2 would result in direct, indirect and induced, and construction-related employment. As shown in Table 4.2-5, approximately 21,400 direct jobs, 11,100 indirect and induced jobs, and 35,200 construction-related jobs would be generated in Orange County at build-out, for a total of approximately 67,700 jobs (information on employment generation factors are provided in Appendix E). Generation of this employment would occur in stages over a period of 20+ years, dependent on market conditions, land availability, and other factors.

Table 4.2-5
Alternative 2 Employment Generation

Land Use Designation	Direct Employment	Indirect and Induced Employment	Construction Employment	Total [1] Employment
Low Density Residential	0	0	5,103	5,103
Medium Density Residential	35	10	4,058	4,103
High Density Residential	0	0	3,024	3,024
Commercial/Business	14,524	9,062	11,525	35,111
Commercial	1,802	584	2,244	4,630
Commercial/Recreation	727	235	905	1,867
Village Mixed-use	1,726	506	1,969	4,201
Golf Hotel	516	194	639	1,349
Institutional/Commercial	583	171	726	1,480
Public Institutional	1,467	375	1,826	3,668
Infrastructure	0	0	3,188	3,188
Total [1]	21,380	11,137	35,208	67,725

[1] Totals may not add due to rounding.
Note: All figures are estimates only. Figures in text are rounded for discussion purposes. Derivation of employment generation calculations on file with City of Tustin.
Source: City of Tustin 1999e

Not all these jobs would represent new employment, as some of these jobs would replace employment at MCAS Tustin. The cessation of military activities at the Air Station under Alternative 2 would eliminate approximately 400 jobs currently held by the civilian personnel.

Therefore, Alternative 2 would generate approximately 21,000 direct jobs in the reuse plan area itself. This would be a beneficial effect because job generations is one goal of the LRA for civilian reuse.

Jobs-Housing Balance

Alternative 2 would add both housing and jobs to Orange County; however, approximately ten percent of these jobs could be new to the county (City of Tustin 1999i). Therefore, about 90 percent of the new employment generated under Alternative 2 is expected to be filled by current residents of Tustin, Irvine, Santa Ana, and other communities in Orange County, rather than by people migrating into the county from other regions and seeking housing.

Alternative 2 is expected to generate approximately 21,400 direct jobs. The employment-induced migration into the area from outside the Orange County region would therefore be approximately 2,140 employees. Based on this same methodology, new employees to the county from indirect and induced employment are expected to total approximately 1,100. The simple jobs-housing ratio of 3,240 new jobs (direct, indirect and induced) over 6,205 new housing units would be 0.52 which is well below the county-wide projected ratio of 1.8. Employees new to the county would generate demand for approximately 1,790 housing units within the county (City of Tustin 1999i). Even if all these employees were to seek housing in the City of Tustin rather than dispersing throughout the entire county, this demand can be accommodated by the approximately 6,200 housing units provided in the reuse plan area under Alternative 2.

Based on the above analysis, Alternative 2 would provide enough housing within its boundaries to balance the new employment it generates. Alternative 2 would not result in a significant jobs-housing balance impact.

Fiscal and Economic

Table 4.2-6 presents information on the estimated value of proposed improvements on the site under Alternative 2. The information contained in Table 4.2-6 was provided by the City of Tustin (original data on file with the city).

Table 4.2-6
Alternative 2 Construction Value

Characteristic	Number/Amount (DU/Square Feet/Acres)	Construction Value (in 000's)
Residential (measured by number of dwelling units)		
Low Density Residential (1-7 DU/Acre)	1,729 du	$205,407
Medium Density Residential (8-15 DU/Acre)	2,132 du	$162,618
High Density Residential (16-25 DU/Acre)	2,344 du	$131,140
Total Dwelling Units/Assessed Value	**6,205 du**	**$499,165**
Commercial/Institutional/Recreational (measured by number of square feet)		
Commercial/Business	5,272,599 SF	$455,507
Commercial	1,610,152 SF	$86,806
Commercial/Recreation	437,560 SF	$35,005
Village Mixed-use	929,421 SF	$76,677
Golf/Hotel	339,768 SF	$69,290
Institutional/Commercial	351,268 SF	$28,101
Cultural Center	570,636 SF	$45,651
Community Park	312,543 SF	$25,003
Total Square Feet of Building Floor Area/Construction Value	**9,823,947 SF**	**$822,041**
Arterial Roadway/Infrastructure (measured by number of acres)		
Roadway Improvements & Drainage Facilities; Demolition	**179 ac**	**$144,901**
Total Estimated Value		**$1,466,107**

Note: All acreage figures are estimates only. Figures in the text are rounded for discussion purposes.
Source: City of Tustin 1999e

Under Alternative 2, direct employment would be 21,380, which is 4.8 times greater than the 4,489 military and civilian employees under the baseline condition. While the value of payroll has not been calculated, it is appropriate to assume that direct payroll would be greater under reuse than the baseline condition and the multiplier effect would be greater as well.

Mitigation Measures

Alternative 2 would generate jobs and housing, which would meet two LRA goals for reuse. Because Alternative 2 would not result in significant socioeconomic impacts, no mitigation would be required.

4.2.5 Alternative 3

Impacts

Plans and Policies

Alternative 3 would fulfill the federal purpose of revitalization of closed military installations because it would generate employment and economic benefits, as shown below. It would also meet the objectives of the *California Military Base Task Force Report*, as shown below.

The LRA Reuse Alternative would meet the objectives of Government Wilson's Executive Order W-81-94 because it would create employment, as shown below.

Population

The development of the reuse plan area would result in an increase in Tustin's and Irvine's population through the provision of new bousing units. Population has been estimated based on population factors developed by the City of Tustin and both the generation factors and resulting population estimates are shown in Table 4.2-7. As shown, development under Alternative 3 would result in a total population gain of approximately 12,000 persons. Of this total, approximately 10,400 persons are expected to be residents of the City of Tustin and approximately 1,600 are expected to reside in the City of Irvine. Minus the baseline population of approximately 3,150 dependents of Marine Corps personnel, total net population change would be about 8,850 persons. The environmental impacts associated with this population increase are discussed in sections 4.1; 4.3 through 4.14, and Chapters 5, 6, and 7.

Housing

Build-out under this alternative would result in almost 4,350 housing units (refer to Table 2-12). Compared to existing housing on the Air Station, a net gain of housing units would be achieved, with the effective net being equivalent to the total gain, as existing units are not available on the civilian market.

Table 4.2-7
Alternative 3 Population Generation[1]

Housing Type	Number of Units	Generation Factor (persons/DU)	Total New Population
Low Density	1,460	3.25	4,745
Medium Density	1,235	2.73	3,372
Reserve Area Residential	630	2.73	1,720
Village Mixed-use	1,015	2.12	2,152
Total			11,988
Existing Military Personnel and Dependents			(3,150)
Net Population Change (see text)			8,850

[1] All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.
Source: City of Tustin 1999h

Most of the housing, including existing housing converted to civilian use, would consist of low density housing (approximately 1,500 units) and medium density housing (approximately 1,200 units). Up to 630 medium density housing would be included in the Reserve Area and approximately 1,015 high density units would be constructed in the village mixed-use category. As this alternative would provide over a thousand potentially more affordable, higher density units, it would help to offset additional demand for more affordable housing in surrounding communities induced by provision of new employment on the site. This reuse is also consistent with Tustin's goal of addressing the housing 'affordability gap' identified in the city's General Plan (City of Tustin 1997a) as well as the goals of the City of Irvine's Comprehensive Affordability Strategy (City of Irvine 1995a). This increase in housing units would be beneficial because it would satisfy one of the LRA's general goals for reuse.

Since no existing housing units would be displaced, and affordable housing units would be provided, no significant impacts would occur.

Employment

Alternative 3 would result in direct, indirect and induced, and construction-related employment as shown in Table 4.2-8. Under Alternative 3 approximately 22,100 direct jobs, 11,300 indirect and induced jobs, and 33,100 construction-related jobs would be generated in Orange County at build-out, for a total of approximately 66,500 jobs (information on employment generation factors are provided in Appendix E). Generation of this employment would occur in stages over a period of 20+ years, dependent on market conditions, land availability, and other factors.

Table 4.2-8
Alternative 3 Employment Generation

Land Use Designation	Direct Employment	Indirect and Induced Employment	Construction Employment	Total [1] Employment
Low Density Residential	0	0	4,212	4,212
Medium Density Residential	35	10	2,513	2,558
High Density Residential	0	0	2,034	2,034
Commercial/Business	11,436	6,839	9,956	28,231
Commercial	2,753	891	3,427	7,071
Golf Hotel	430	156	598	1,184
Village Mixed-use	1,322	474	1,215	3,011
Reserve Area	3,747	2,255	3,353	9,355
Institutional/Commercial	776	235	918	1,929
Public Institutional	1,581	414	1,686	3,681
Infrastructure	0	0	3,188	3,188
Total [1]	22,080	11,274	33,100	66,454

[1] Totals may not add due to rounding.
Note: All figures are estimates and approximations only. Figures in text are rounded for discussion purposes.
Derivation of employment generation calculations on file with City of Tustin.
Source: City of Tustin 1999e

Not all these jobs would represent new employment, as approximately 400 jobs represent employment at MCAS Tustin. Therefore, Alternative 3 would generate approximately 21,700 direct jobs in the reuse plan area itself. This would be beneficial because job generation is a goal of the LRA for civilian reuse.

Jobs-Housing Balance

Similar to Alternatives 1 and 2, approximately 10 percent of employees in the reuse plan area are expected to relocate to Orange County under Alternative 3 (City of Tustin 1999i). Therefore, about 90 percent of the new employment generated under Alternative 3 would be filled by current residents of Tustin, Irvine, Santa Ana, and other communities in Orange County, rather than by people migrating into the county from other regions and seeking housing.

Alternative 3 is expected to generate approximately 22,100 direct jobs. The employment-induced migration into the area from outside the Orange County region would therefore be approximately 2,210 employees. Based on this same methodology, new employees to the county from indirect and induced employment are expected to total approximately 1,130. The simple jobs-housing ratio of 3,340 new jobs

county-wide (direct, indirect and induced) given 4,350 new housing units would be 0.77. This is well below the projected county-wide ratio of 1.8 and there would be a beneficial impact.

Employees new to the county would generate demand for approximately 1,830 housing units (City of Tustin 1999i). Even if all these employees were to seek housing in the City of Tustin rather than dispersing throughout the entire County, this demand could be accommodated by the 4,430 housing units provided in the reuse plan area under Alternative 3.

Based on the above analysis, Alternative 3 would provide enough housing within its boundaries to balance the new employment it generates and would not result in a significant jobs-housing balance impact.

Fiscal and Economic

Table 4.2-9 presents information on the estimated value of proposed improvements on the site under Alternative 3. The information contained in Table 4.2-9 was provided by the City of Tustin (original data on file with the City).

Under Alternative 3, direct employment would be 22,080, which is 4.9 times greater than the 4,489 military and civilian employees under the baseline condition. While the value of payroll has not been calculated, it is appropriate to assume that direct payroll would be greater under reuse than the baseline condition and the multiplier effect would be greater as well.

Mitigation Measures

Alternative 3 would generate jobs and housing, which would meet two LRA goals for reuse. Given that Alternative 3 would not result in significant socioeconomic impacts, no mitigation under NEPA would be required.

Table 4.2-9
Alternative 3 Construction Value

Characteristic	Number/Amount (DU/Square Feet/Acres)	Construction Value (in 000's)
Residential (measured by number of dwelling units)		
Low Density Residential (1-7 DU/Acre)	1,460 du	$169,615
Medium Density Residential (8-15 DU/Acre)	1,865 du	$100,604
High Density Residential (16-25 DU/Acre)	1,015 du	$88,237
Total Dwelling Units/Assessed Value	**4,340 du**	**$358,456**
Commercial/Institutional/Recreational (measured by number of square feet)		
Commercial/Business	5,142,528 SF	$390,481
Commercial	1,219,593 SF	$97,567
Commercial/Recreation	437,560 SF	$35,005
Village Mixed-use	712,467 SF	$47,349
Reserve Area	1,702,464 SF	$131,090
Golf/Hotel	283,140 SF	$60,360
Institutional/Commercial	467,037 SF	$35,495
Cultural Center	557,568 SF	$33,454
Community Park	394,218 SF	$31,537
Total Square Feet of Building Floor Area/Construction Value	**10,916,575 SF**	**$862,339**
Arterial Roadway/Infrastructure (measured by number of acres)		
Roadway Improvements & Drainage Facilities; Demolition	**184 ac**	**$144,901**
Total Estimated Value		**$1,365,696**

Note: All acreage figures are estimates only. Figures in the text and rounded for discussion purposes.
Source: City of Tustin 1999e

4.2.6 No Action Alternative

Impacts

Plans and Policies

The No Action Alternative would not address economic development needs and thus would not meet the federal objectives stated in Public Law 103-160, concerning public need and revitalization of closed military installations.

The No Action Alternative would not meet the principles of the "Report of the California Military Base Reuse Task force to Governor Pete Wilson: A Strategic Response to Base Reuse Opportunities, January 1994," in that no reuse would take place and no new jobs would be generated.

The conflict of this alternative with the goals of these plans and policies is considered significant.

Population, Housing, Employment, Jobs - Housing Balance

Under this alternative, military operations and personnel would be transferred to other bases, and this site would be retained in federal ownership under a caretaker program. The caretaker program would provide employment for approximately 10 personnel on the site. Interim leases could continue, providing some additional employment, although agricultural employment is seasonal in nature (see Section 4.8). The existing 1,537 military housing units would not be used. Because no population, housing, or employment growth would occur under this alternative, this impact would be less than significant. However, there would be no beneficial effect either. Jobs-housing balance improvement would have no significant impact because of the small number of jobs lost, while housing supply would remain constant.

Fiscal and Economic

As noted in the Fiscal and Economic Considerations discussion in Section 3.2, there have been local fiscal and economic impacts resulting from the closure of MCAS Tustin. Almost 400 civilians were employed at the Air Station, approximately 4,000 military were stationed at the Air Station, and an additional 2,000 jobs were indirectly contributed in the local economy. Local expenditures were estimated to have contributed between $121 million to $173 million to the local economy. Under the No Action Alternative, these losses will not be offset by reuse. Further, the lack of reuse under this alternative would conflict with the federal economic reuse goals under Public Law 103-160, and would be inconsistent with the economic objectives of President Clinton's Five Point Program and Governor Wilson's Executive Order W-81-94.

Mitigation Measures

The lack of consistency with stated plans and policies and the potential revenue loss due to lack of reuse would be significant impacts under the No Action Alternative. Only the development of some type of reuse would provide the opportunity to provide jobs to generate economic activity and housing to reduce the identified deficiency.

4.3 UTILITIES

Development of any of the reuse alternatives would require construction of domestic and reclaimed water, sanitary sewer, drainage, electricity, natural gas, telephone, and cable television systems. Much of this analysis is based on the *Final Community Facilities and Infrastructure Plan, MCAS Tustin* (City of Tustin 1995a), which provides preliminary utilities concept plans. Using generation rates provided by the City of Tustin, consumption by land use category was calculated for each utility under each Alternative. The detailed calculation tables are provided in Appendix E, only the totals are identified in this text.

4.3.1 Significance Criteria

Utilities impacts would be considered significant if Air Station disposal or subsequent reuse would require or result in construction of new systems or facilities when the construction of such systems or facilities would cause adverse changes or alterations to the physical environment or exceed supplies or on-site and off-site capacity of service providers.

4.3.2 DON Disposal of MCAS Tustin

Impacts and Mitigation Measures

Disposal of DON property would have no direct impact on utilities. Because the disposal is a transfer of title, direct use of utilities would not be affected. Under caretaker status utilities could be severed and reduced. No mitigation would be necessary.

4.3.3 Alternative 1

Construction Impacts

Utility backbone systems would be constructed concurrently with arterial streets under Alternative 1. Since construction of these systems is part of reuse Alternative 1, impacts related to air quality, noise, and other environmental issues are described within various sections of Chapters 4, 5, and 6. Where significant impacts would occur, mitigation measures are identified.

Operation Impacts

Potable Water

Baseline domestic water usage was 1.3 million GPD (see Section 3.3). The projected average daily domestic water demand for the reuse plan area at build-out is estimated to be 2.8 million GPD (see Appendix E). This ultimate demand estimate takes into account standard water-saving features typically required by the cities of Tustin and Irvine and the IRWD. Thus, the total change from baseline consumption under Alternative 1 would be an increase of approximately 1.5 million GPD. According to the IRWD, there is adequate water capacity to supply civilian reuse development associated with Alternative 1, and an adequate external delivery system from water sources to the Air Station (City of Tustin 1993g and 1993n). Based on an estimated year 2000 average daily IRWD systemic water demand of approximately 50 MGD and a capacity of about 109 MGD, IRWD has adequate existing capacity to supply water to the reuse plan area. IRWD has not estimated future demand at buildout of Alternative 1. However, the IRWD has indicated that it can acquire more water from the MWD and from well water if needed to satisfy future demand from the reuse plan area. However, the existing infrastructure at MCAS Tustin would be inadequate to serve the proposed uses within the reuse plan area or to continue to serve the existing military land uses, such as housing, that may be rehabilitated.

The domestic water concept plan (City of Tustin 1995a) provides a preliminary plan for the backbone facilities required to support the buildout of MCAS Tustin under Alternative 1. This assessment has been closely coordinated with the IRWD and specifies waterline pipe sizes and locations based on the proposed development. The IRWD recommends that pipe systems follow a loop pattern and provide service areas with multiple sources of supply. These recommendations provide operational flexibility that would prevent loss of service to an area should a source or pipeline fail. The domestic water system under Alternative 1 would adhere to both of these recommendations. A more detailed Subarea Master Plan is under preparation by IRWD to refine the specifications (City of Tustin 1999).

Existing Air Station water mains would be abandoned in a phased manner under Alternative 1 as the new backbone system is constructed. Service connections to new developments would be provided from a new backbone system and from existing water mains in adjacent roadways. Distribution systems already in place in existing housing areas would be connected to the proposed backbone system as private facilities, unless the existing lines were not accepted by IRWD (City of Tustin 1995a).

The Alternative 1 water distribution system, which would serve areas west of Peters Canyon Channel, would utilize Valencia Loop Road as the backbone of the loop system and existing domestic water mains would convey water as follows (IRWD 1999):

(1) An existing 12-incb IRWD line parallel to the future alignment of Tustin Ranch Road. This 12-inch line would continue in a southeasterly direction to where it would become a 16-inch line before reaching Harvard Avenue. It would then merge with the IRWD 42-inch pipeline which runs in Harvard Avenue past Barranca Parkway.

(2) Three water lines exist in Barranca Parkway between Red Hill Avenue and Harvard Avenue. The IRWD operates a 54-inch and a 12-inch pipeline. There is a third 72-inch pipeline operated by the MWD. The 72-inch MWD line in Barranca is a continuation of the MWD 78-inch line in Red Hill Avenue.

(3) An existing 18-inch IRWD line, referred to as the "Navy Line," runs from the turnout at OC-58 at Red Hill Avenue across the base and through the tie-in at the intersection of Moffett Avenue and Harvard Avenue.

(4) An existing 78-inch MWD pipeline runs northeast along Red Hill Avenue from Barranca Parkway past Edinger Avenue. The IRWD operates the OC-58 turnout which is located off of the MWD pipeline. OC-58 allows the IRWD to take water from the MWD system into its distribution system.

(5) The proposed interior loop water main would be constructed under Valencia Loop Road as tbe backbone of the system and would be operated by the IRWD. The loop would consist of pipeline that would range in size from 10-inches to 16-inches in diameter.

Parcels located southeast of Peters Canyon Channel would acquire water service from the Harvard Avenue water main. The 42-incb diameter line would serve as the parcels' backbone domestic water conveyance system; therefore, no new backbone lines would be constructed for parcels in this area, except for a Moffett Avenue extension.

Pipe sizes would be finalized by IRWD based on demands, water pressure requirements, flow velocity criteria, and the fire-flow specifications of OCFA. However, surveys and more specific knowledge of the land uses would be required to determine the network's final pipe sizes.

The capacity to provide potable water service to the reuse plan area has been indicated by IRWD; therefore the impact under Alternative 1 would be less than significant.

Reclaimed Water

The estimated reclaimed water demand under build-out of Alternative 1 would be 1.8 million GPD (City of Tustin 1997c). The baseline usage was as much as 0.16 MGD. Currently, IRWD has system capacity to deliver approximately 18 MGD of reclaimed water, while total demand averages about 14 MGD. IRWD intends to expand the Michelson Water Reclamation Plan to a capacity of approximately 35 MGD. If demand for reclaimed water exceeds supply, IRWD can supplement the reclaimed water with potable water and well water. Therefore, the IRWD's reclaimed water system can accommodate reuse development under Alternative 1. According to the IRWD, there is adequate capacity to supply civilian reuse development on the base (City of Tustin 1993g and 1993n).

The reclaimed water concept plan (City of Tustin 1995a) provides a preliminary plan for the backbone facilities required to support build-out under Alternative 1. This plan was coordinated with the IRWD and specifies waterline pipe sizes and locations. The proposed backbone system serving parcels located southwest of Peters Canyon Channel would utilize Valencia Loop Road as the backbone of a loop system and would acquire water from one of two sources either the 16-inch diameter line in Barranca Parkway through a connection at Jamboree Road or the 20-inch diameter line in Harvard Avenue through a connection at Moffett Avenue. Parcels located east of Peters Canyon Channel would be serviced by the 20-inch diameter line in Harvard Avenue. No additional backbone lines would be required in those areas.

A detailed analysis would be necessary to determine the network's appropriate pipe sizes (based on demand), water pressure requirements, and flow velocity criteria. IRWD would prepare a *Subarea Master Plan* for whichever alternative is selected (City of Tustin 1999).

IRWD has expressed interest in exchanging existing well properties on the northwest side of the site at Red Hill Avenue in exchange for new well sites near the reuse plan area's southern border. Actual sites would need to be negotiated between IRWD and the City of Tustin as a condition of subdivision approval. The exchange would provide an opportunity to develop these sites and integrate the new sites into the planned business areas. The new well sites would be used during peak periods to provide reclaimed water (City of Tustin 1995a).

Alternative 1 would include a reclaimed water system designed to adequately accommodate reuse development. IRWD has indicated that there is adequate capacity in the district to supply the reuse development with reclaimed water; thus, the impact under Alternative 1 would be less than significant.

Sanitary Sewer

Baseline sewage generation was 0.7 million GPD. Sewage generation with development of Alternative 1 would be approximately 2.5 million GPD total average flow, with a peak flow of 7.7 million GPD. Thus, this average daily flow represents 1.8 million GPD over baseline conditions. IRWD and OCSD would be responsible for providing plan approval and sewer service to the reuse plan area. Most sewage flows from the site are expected to be treated by the OCSD. However, some flows from existing housing areas are expected to be conveyed to the IRWD Michelson Water Reclamation Plant in Irvine, which has a current capacity of 18 MGD and is expected to ultimately accommodate 35 MGD of sewerage. IRWD has indicated that it can process sewerage generated from the reuse plan area (City of Tustin 1993g and 1993n). In any case, if sewerage flows exceed capacity at this plant, excess flows are conveyed to OCSD facilities, which are currently operating under average conditions at 50 percent of capacity and processes about 250 MGD of sewage. OCSD has indicated that it can accommodate sewage flows from the reuse plan area and has taken into account urban uses at MCAS Tustin in its future planning.

It is assumed that most existing facilities would be replaced (City of Tustin 1998). The existing sewer mains would be abandoned and service would be provided to developments through connections to a new backbone system. The exception would be the conveyance systems already in place from existing housing (City of Tustin 1996b).

Currently, the IRWD does not have sufficient hydraulic capacity in the Harvard Avenue main to accommodate flows expected through this main. Directing sewage to multiple sewer mains would be necessary to distribute the sewage generated.

A sanitary sewer concept plan has been prepared in coordination with OCSD and IRWD by the City of Tustin, identifying sewer pipe sizes and locations. Preliminary pipe sizes assumed a gravity flow system and pipes flowing half full at peak flow (City of Tustin 1995a and 1996b).

Existing topography favors sewer flow towards the southeast; therefore, the proposed sewer would connect to a proposed sewer main in Barranca Parkway. All parcels located northwest of Peters

Canyon Channel would discharge through this system. Sewage would be conveyed to the 45-incb IRWD Harvard Avenue main, a proposed OCSD sewer in Red Hill Avenue, or a proposed trunk system in Jamboree Avenue or Von Karman Avenue between Barranca Parkway and Main Street (City of Tustin 1995a).

Until the off-site system is in place, any interim change in sewage collection on-site would be directed to existing connections to the OCSD facilities in Red Hill Avenue (Orange County Sanitation District 1998). A pump station could be required. For this interim condition, additional facilities would necd to be constructed and various agreements established between the County Sanitation Districts of Orange County, the IRWD and the City of Tustin.

Parcels located southeast of Peters Canyon Channel would be serviced by the existing 45-inch diameter IRWD main located in Harvard Avenue. The Harvard main would serve as the backbone system for these areas; therefore, it is not likely that additional backbone sewer infrastructure would be necessary for new developments in this area. However, it would be necessary to install new sewer pipe to transport sewage from the existing developments located southeast of Peters Canyon Channel to the Harvard Avenue main (City of Tustin 1995a).

Alternative 1 would include a new sanitary sewer system designed to accommodate anticipated development. IRWD and OCSD have indicated they have adequate capacity to serve reuse development; therefore the impact under Alternative 1 would be less than significant.

Drainage

Development of the reuse plan area would replace existing agricultural fields, operationally constrained undeveloped areas, and other undeveloped parcels with urban-type development. While the golf course and various parks would provide some pervious surfaces to absorb rainwater, the overall amount of impervious surface would increase, thereby increasing the amount of surface water runoff. Utilizing the existing storm drain system on the Air Station would not be a practical alternative because most of these pipes and channels are undersized.

A conceptual storm drain plan has been developed in coordination with the OCFCD. Peak runoffs were determined using the *Orange County Hydrology Manual Rational Method* and based on a 25-year return frequency storm. This conceptual system would include five major drainage areas with mainline facilities and improvements to the OCFCD Barranca Cbannel. This backbone system would follow the alignments of the major arterial roadways, such as Armstrong Avenue, Von

Karman Avenue, Tustin Ranch Road, and Warner Avenue. The local collector systems for each parcel would need to be studied as each parcel is developed (City of Tustin 1995a).

Retention basins were investigated to handle storm flows in the golf village area. Based on the initial analysis, it appears that retention basins would be feasible and could be incorporated into the project. These basins could be blended in with the design of the golf course. During a severe storm, the golf course would be subject to flooding. After storm flows have receded, however, floodwaters on the course could drain back into the system. The use of retention basins would result in a reduction in pipe sizes, thus reducing the cost of the drainage system (City of Tustin 1995a).

Future on-site facilities would discharge into the County's regional facilities (Barranca Channel, Peters Canyon Channel, and Santa Ana-Santa Fe Channel).

The *Project Report for the Peters Canyon Channel from San Diego Creek Channel to Santa Ana Freeway* (OCEMA 1989), identified the improvements required to carry 100-year peak flows for this regionally serving channel. This plan is being revised to establish a channel configuration that is compatible with the channel improvements made in association with the recently constructed ETC. The channel is recommended to be reconstructed as a soft-bottomed channel. The OCFCD has included improvements to Peters Canyon Channel in its five-year plan for design and construction. While reuse would allow for conveyance of the channel to OCFCD ownership, improvements to the channel are not a feature of the reuse plan area direct impact.

The earthen-lined Santa Ana/Santa Fe channel is undersized. OCFCD is currently determining how to improve capacity of this channel.

A small portion of the reuse plan area is within the identified 100-year flood plain and FIRM maps identify this small parcel as an "area of ponding" with flood depths one to three feet (FEMA 1999). The area is proposed for Medium High Density residential uses under Alternative 1. Final hydraulic analyses would be required to assure that individual buildings conform to existing requirements for development within flood-prone zones. Given the relative scale of potential flooding (three feet or less) it is likely that future development could be designed to avoid any flood potential.

The OCFCD has existing channel easements for the Peters Canyon Channel, the Barranca Channel, and the Santa Ana/Santa Fe Channel. Additional right-of-way is needed for intended improvements to each channel. As part of Alternative 1, a public benefit conveyance is recommended to provide right-of-way to reflect the existing Barranca Channel and Santa Ana/Santa Fe Channel easements.

In the case of the Peters Canyon Channel right-of-way, the public benefit conveyance recommended includes the 180-foot existing easement, plus 40 feet of additional right-of-way from the Metrolink rail line south to Warner Avenue.

Development would necessitate an improved storm drain system, described in general above, to adequately accommodate reuse development under Alternative 1. This system can be provided by the cities of Tustin and Irvine, and OCFCD; therefore impacts under Alternative 1 would be less than significant.

The City of Tustin would be responsible for the maintenance of the on-site public drain system within its jurisdictional boundaries. Any public drainage systems in Irvine would be the responsibility of the City of Irvine.

Electricity

It is estimated that 158.0 million kWh per year would be required to support the proposed land uses in Alternative 1. This is 130.1 million kWh greater than the baseline usage of 27.9 million kWh per year. According to SCE, the existing substations have sufficient capacity to meet this demand. Therefore, construction of additional substations would not be required (City of Tustin 1995a).

A preliminary electricity concept plan (City of Tustin 1995a) has been prepared to identify backbone facilities required to support build-out of Alternative 1. Existing overhead lines and several converters would be removed and replaced in a phased manner with a new underground electrical system in the proposed street rights-of-way to support the new land uses. It is anticipated that all non-housing area electrical facilities would be replaced over time. Electrical facilities for the military family housing area located in the northeast portion of the site would remain in place, as they are individually metered. No conversion would be necessary. The ultimate ownership of existing and new electrical systems installed on site would be determined after completion of a more detailed technical study and negotiations with existing purveyors.

There is a preliminary electrical plan identifying a system to serve proposed development and SCE has indicated it has adequate capacity to meet reuse demand. Therefore, the impact under Alternative 1 would be less than significant.

Natural Gas

Baseline usage of natural gas was 103 million cubic feet per year. It is estimated that the proposed development under Alternative 1 would use approximately 836 million cubic feet per year, which would be an increase of 733 million cubic feet per year. SCGC currently provides natural gas service to the reuse plan area. Capacity is available to service this increased demand, but the distribution and delivery system would need to be created in concert with development of Alternative 1.

A preliminary natural gas delivery system plan has been prepared. It assumes that the existing natural gas mains would be abandoned in a phased manner within the perimeter of the Air Station and that service connections would be provided to developments from a new backbone system. Distribution systems already in place in existing military housing areas would remain connected to their existing sources and would be considered private facilities, unless the existing lines would be accepted by a gas purveyor. Acceptance would be based on pipe condition and the ability to meet current purveyor standards (City of Tustin 1995a). However, SCGC bas indicated that it might not take over the existing military lines or related systems. If SCGC is the purveyor, it would install new service. The service would include individual meters servicing each reuse facility. The ultimate ownership of existing and new gas systems installed on site would be determined after completion of a more detailed technical study and negotiations with existing purveyors.

The new facility for the site would be developed as a loop-piping system. Backbone pipe sizes on the site would range from four to eight inches in diameter, and total approximately 32,000 linear feet. Service main piping (less than or equal to three inches in diameter) is estimated at 25,000 linear feet. The proposed loop system would acquire natural gas from two sources (City of Tustin 1995a):

(1) an existing four-inch-diameter, high-pressure main in Warner Avenue through a connection at the intersection of North Construction Way and Warner Avenue; and

(2) an existing four-inch diameter, medium-pressure line in Red Hill Avenue through a tie-in at Valencia Avenue.

A regulator station would be required to "step down" the high-pressure gas in the Warner Avenue line to acceptable service levels (City of Tustin 1995a).

Alternative 1 would include, as part of proposed development, a natural gas system designed to adequately address the needs of proposed reuse development. SCGC bas indicated it has adequate

capacity to provide natural gas in the reuse plan area; thus, the impact under Alternative 1 would be less than significant.

Telephone

The telephone concept plan (City of Tustin 1995a) would provide a plan for the backbone facilities required to support the build-out of Alternative 1. Pacific Bell currently provides telepbone service to the reuse plan area from a wire center located on Irvine Center Drive, in the City of Irvine. However, the existing telephone system on Air Station property is owned and maintained by the military. This system does not meet current industry standards and would not be reused under Alternative 1 (City of Tustin 1995a).

The existing telephone system for areas southeast of Jamboree Road and in the public right-of-way is owned by Pacific Bell. Pacific Bell would continue to serve existing developments from the Irvine Center Drive wire center (City of Tustin 1995a).

The ownership of existing and new systems installed on site would be determined after completion of a more detailed technical study. New substructure would be constructed in the planned roadways west of Jamboree Road and could be served from an existing wire center at the intersection of Edinger Avenue and Red Hill Avenue. It is desirable that fiber optic facilities be installed with basic telephone infrastructure. According to Pacific Bell, the existing infrastructure serving areas southeast of Peters Canyon Channel would be capable of adequately supporting the proposed developments (City of Tustin 1995a).

Alternative 1 would include, as part of proposed development, a telephone system designed to adequately address the needs of development. Pacific Bell has indicated it has adequate capacity to provide telephone service in the reuse plan area; therefore, the impact under Alternative 1 would be less than significant.

Cable Television

Cox Communications currently provides cable television service to the reuse plan area. The cable television concept plan would provide a preliminary plan for the backbone facilities required to support the build-out of Alternative 1. This backbone system would follow the arterial roadways and would be constructed concurrently with the roadways. The ownership of existing and any new

systems installed on site would be determined after completion of a more detailed technical study. (City of Tustin 1995a) and negotiations with the existing purveyor.

Cox Communications has indicated that it has adequate capacity to provide cable television service to meet the demand for cable television in the reuse plan area; thus the impact under Alternative 1 would be less than significant.

Solid Waste Disposal

It is estimated that the proposed development under Alternative 1 would generate approximately 37,000 tons of solid waste per year. This generation would comprise an increase of about 32,300 tons per year of solid waste from the baseline generation of 4,700 tons per year.

Solid waste from development under Alternative 1 would be disposed of at the Frank R. Bowerman Landfill, which is scheduled to close in 2024. The total permitted capacity of the landfill is 117.0 million cubic yards (mcy), of which 20.6 mcy has been used, as of February 1998 (County of Orange 1998). Detailed plans for solid waste disposal in the Tustin/Irvine area beyond this time frame have not been formulated. However, Tustin and Irvine have each adopted an SRRE that provides implementation programs for achieving a 50 percent reduction in their solid waste streams by the year 2000. These programs include extensive residential and commercial recycling (County of Orange 1998). All development under Alternative 1 would comply with the applicable SRRE goals, policies, and programs.

All new reuse development would be required to comply with existing applicable SRRE programs, which could reduce solid waste generation. In any case, solid waste disposal facilities in Orange County would have ample capacity to accommodate solid waste generated under Alternative 1. No new facilities would be required; thus, the impact under Alternative 1 would be less than significant.

Mitigation Measures

Under Alternative 1, no impacts beyond those identified in other sections of Chapters 4, 5, and 6 would result from utilities construction, and no capacity impacts would occur. Therefore no mitigation would be required.

Implementation Measures

To support proposed development in the reuse plan area, backbone utility systems must be provided concurrent with demand. The following implementation measures are identified and will be required by the City of Tustin or City of Irvine as conditions for individual projects.

(a) The City of Tustin or City of Irvine, as appropriate, shall ensure that infrastructure is constructed in phases as triggered by identified thresholds in Table 4.3-1. The Phasing Plan provides an organizational framework to facilitate development of the reuse plan area in tandem with infrastructure necessary to support the planned development. This framework reflects the fact that each component of the infrastructure has its own threshold for accommodating additional development toward build-out of the reuse plan area. The triggering mechanisms that identify timing of key infrastructure provisions are summarized in Table 4.3-1.

(b) Prior to a final map recordation (except for financing and reconveyance purposes), the development applicant shall enter into an agreement with the City of Tustin and City of Irvine and any appropriate regional utility agencies, districts, and providers, as applicable, to dedicate all easement, rights-of-way, or other land determined necessary to construct adequate utility infrastructure and facilities to serve the project as determined by the city, agency, district, or other providers.

(c) Prior to any final map recordation (except for financing and conveyance purposes), the development applicant shall enter into a secured agreement with the cities of Tustin and/or Irvine, as applicable, to participate on a pro-rated basis in construction of capital improvements necessary to provide adequate utility facilities.

(d) Prior to the issuance of permits for any public improvements or development project, a development applicant shall submit to the City of Tustin and City of Irvine, as applicable, information from IRWD which outlines required facilities necessary to provide adequate potable water and reclaimed water service to the development.

(e) Prior to the issuance of the certificates of use and occupancy, the project developer shall ensure that fire hydrants capable of flows in amounts approved by the OCFA are in place and operational to meet fire flow requirements.

Table 4.3-1
Alternative 1 Utilities Phasing Requirements

Facility	General Scope	General Triggering Mechanisms
Domestic Water	1) Existing housing water distribution lines 2) New backbone water mains 3) Abandoned/relocated wells	1) Upon determination by IRWD regarding acceptability of water lines 2) When backbone arterial highways are constructed 3) Upon determination by IRWD
Reclaimed (Non-Potable) Water	1) New backbone water lines; 2) Existing and new well sites.	1) When backbone arterial highways are constructed; 2) Upon completion of negotiations by IRWD and developer(s) regarding exchange of well sites.
Sanitary Sewer	1) Existing housing sewer conveyance lines 2) New backbone sewer mains	1) Upon determination by IRWD and OCSD regarding acceptability of the lines 2) When backbone arterial highways are constructed
Storm Drain	3) Backbone storm drain channels 4) Regional flood control channel improvements 5) Retention basins 6) Flood plain mitigation	1,2) Armstrong storm drain 1,2) Generally in conjunction with arterial highway construction 3) Upon determination of acceptability as part of development plans 4) Filing of flood zone map with FEMA prior to any Phase II construction
Electricity	Backbone electric distribution lines	When backbone arterial highways are constructed
Natural Gas	Backbone gas distribution lines	When backbone arterial highways are constructed
Telephone	Backbone telephone lines	When backbone arterial highways are constructed
Cable Television	Backbone cable television distribution lines, fiber optic cables	When backbone arterial highways are constructed

Source: City of Tustin 1996b and 1998

(f) Prior to the issuance of permits for any public improvements or development project, a development applicant shall submit to the City of Tustin and City of Irvine, as applicable, information from IRWD, OCSD, or the City of Tustin which outlines required facilities necessary to provide adequate sanitary sewage service to the development.

(g) Prior to the issuance of grading permits or approval of any subdivision map (except for financing and reconveyance purposes), whichever occurs first, for development within the 100-year flood plain, grading and drainage systems shall be designed by the project developer such that all building pads would be safe from inundation from runoff from all storms up to and including the theoretical 100-year storm, to the satisfaction of the City of Tustin Building Division or the Irvine Public Works Department, as applicable. Grading permits or subdivision maps generated for financing and reconveyance purposes are exempt.

(h) Prior to construction of regional flood control facilities, appropriate state and federal approvals, including agreements and permits, shall be obtained. These include but are not limited to Regional Water Quality Control Board permits, including NPDES permits; Section 404 permits from the USACOE, and Section 1601 or 1603 agreements from the CDFG in a manner meeting the approval of the City of Tustin and the Irvine Public Works Department, as applicable.

(i) Prior to issuance of any grading permit or approval of any subdivision map (except for financing and conveyance purposes), for any development that is either partially or completely located within the 100-year flood plain of the Flood Insurance Rate Map, the development applicant shall submit all required documentation to the FEMA and demonstrate that the application for a Conditional Letter of Map Revision for changes to the 100-year flood plain is satisfied in a manner meeting the approval of each respective city, as applicable.

(j) Prior to the approval of any applicable subdivision map (except for financing and conveyance purposes), the developer-applicant shall design and construct local drainage systems for conveyance of the 10-year runoff. If the facility is in a local sump, it shall be designed to convey the 25-year runoff.

(k) Prior to any grading for any new development, the following drainage studies shall be submitted to and approved by the City of Tustin, City of Irvine, and/or OCFCD, as applicable:

(1) A drainage study including diversions (i.e., off-site areas that drain onto and/or through the project site), with justification and appropriate mitigation for any proposed diversion;

(2) A drainage study evidencing that proposed drainage patterns would not result in increased 100-year peak discharges within and downstream of the project limits, and would not worsen existing drainage conditions at storm drains, culverts, and other street crossings including regional flood control facilities. The study shall also propose appropriate mitigation for any increased runoff causing a worsening condition of any existing facilities within or downstream of project limits. Implementation of appropriate interim or ultimate flood control infrastructure construction must be included.

(3) Detailed drainage studies indicating how, in conjunction with the drainage conveyance systems including applicable swales, channels, street flows, catch basins, storm drains, and flood water retarding, building pads are made safe from runoff inundation which may be expected from all storms up to and including the theoretical 100-year flood.

(l) Prior to approval of any subdivision map (except for financing or conveyance purposes), an agreement will be executed with the OCFCD that provides for the identification and contribution of a project-specific fair share contribution toward the construction of ultimate flood control facilities needed to accommodate build-out of the affected project. Interim flood control facilities may be considered for approval provided such facilities meet OCFCD requirements. Nothing shall preclude the City of Tustin from transferring the obligation onto other project developers within the project area.

4.3.4 Alternative 2

Construction Impacts

Utility backbone systems would be constructed concurrently with arterial streets under Alternative 2. Since construction of these systems are part of reuse Alternative 1, impacts related to air quality, noise and other environmental issues are described within various sections of Chapters 4, 5, and 6.

Operation Impacts

Domestic (Potable)Water

The average daily demand for water under this alternative reuse development would be approximately 3 million GPD which would be an increase of approximately 1.7 million GPD over baseline demand at MCAS Tustin. The IRWD indicated that the water resources are available and accessible and that there would be adequate capacity to supply reuse development on the site (City of Tustin 1998a and 1998b). As with Alternative 1, system capacity could accommodate reuse development under Alternative 2.

Reuse development under Alternative 2 would require construction of a new backbone water system. The existing system would be abandoned in a phased manner and service connections to new development would be provided from a new backbone system and from existing water mains in adjacent roadways. A new backbone system would be designed to reflect the grid pattern alignment of local streets, and to identify appropriate alignment, tie-ins, and location of the new water lines. This redesign would be developed in coordination with IRWD.

The pipe system would follow a grid pattern and would be designed to provide service areas with multiple sources of supply. The pipe sizes would be finalized by IRWD based on demands, water

pressure requirements, flow velocity criteria, and the fire-flow specification of OCFA. The system's final pipe sizes would be determined once the future development is defined in greater detail.

Capacity is available to meet demand for potable water, therefore, the impact under Alternative 2 would be less than significant.

Reclaimed Water

The total demand for reclaimed water would be approximately 1.8 MGD. IRWD has indicated that it could supply this reclaimed water (City of Tustin 1998a and 1998b). As with Alternative 1, system capacity could accommodate reuse development under Alternative 2.

The IRWD is the provider of reclaimed water service to the reuse plan area. Reuse development under this alternative would require construction of a new backbone system for reclaimed water. The new backbone system would be constructed under major streets, thus resulting in a grid distribution pattern. The redesign is an engineering task that would be conducted in coordination with IRWD. The IRWD's suggestions that any lakes or ponds built on the reuse property be fed with reclaimed water would be incorporated into the reuse development. Ponds would serve as bolding basins for irrigation systems.

Alternative 2 would include a reclaimed water system designed to adequately accommodate reuse development and there is adequate capacity in the district to supply the reuse development. Therefore, the impact under Alternative 2 would be less than significant.

Sanitary Sewer

The average daily flows and peak flows generated by Alternative 2 would be approximately 2.7 million GPD and 8.1 million GPD, respectively. This average daily flow would result in an increase of approximately 2.0 million GPD over baseline average daily flows. As with Alternative 1, system capacity could accommodate reuse development under Alternative 2.

Reuse development under Alternative 2 would require construction of a new sewer backbone system. The IRWD and OCSD serve the reuse plan area. The existing sewer system would be abandoned and a new backbone system would need to be constructed.

The backbone sewer system for Alternative 2 would follow the grid-patterned layout of local streets. The sewer system under Alternative 2 would be a gravity flow system with pipes sized to flow half-full at peak flow. Major mains identified under Alternative 1 would also be utilized for the Alternative 2 development. Sewage might be directed to multiple sewer mains, because the existing facilities in Harvard Avenue do not have the capacity to accommodate the peak flow from the site. The determination of specific layout, tie-in locations, and sizing of pipes is an engineering task that would be completed in cooperation with IRWD and OCSD.

IRWD and OCSD could support sewage generated by the reuse plan area through their combined capacity to transport and treat project flows. The on-site backbone sewage system would be constructed concurrently with the arterial roadway grid system, and no additional off-site sewer infrastructure would be required. The impact under Alternative 2 would be less than significant.

Drainage

The runoff from the site under Alternative 2 would be comparable to runoff generated by development under Alternative 1, as it would result in a similar coverage of pervious surfaces with buildings, streets, etc. Alternative 2 would require a new storm drain backbone system to provide adequate collection, conveyance, and disposal of runoff from the entire site. The drainage concept plan developed for Alternative 1 would be modified to reflect the grid-patterned alignment of local streets for the corresponding layout of drainage pipes. This is an engineering task that would be completed in cooperation with OCFCD. The existing 72-inch RCP at the intersection of Jamboree Road and Barranca Parkway would be the only component of the existing system reused within the new system.

Under this alternative, residential development would be proposed in the parcel identified by FEMA as having flood potential, categorized as one to three feet of ponding. To avoid flood impacts, future development would need to incorporate appropriate engineering design.

The improvements proposed to the regional channels under Alternative 1, including Peters Canyon Channel, would also be carried out under Alternative 2. The improvements to Barranca Channel identified for Alternative 1 would also need to occur under Alternative 2. Additional right-of-way would need to be secured for improvements to the Santa Ana/Santa Fe Channel. Alternative 2 would include a golf course that could accommodate the use of retention basins. These improvements can be provided and the impact under Alternative 2 would be less than significant.

Electricity

Demand for electricity under Alternative 2 would be approximately 152.9 million kWh per year, which is 125 million kWh greater than the 27.9 kWh used in the baseline. SCE could adequately provide electrical service to the Alternative 2 development without compromising service to the rest of its customers.

Although no new substations would be necessary to serve the site, a new backbone electrical system would be necessary. The new electrical system would be underground and would follow the arterial grid pattern proposed under Alternative 2.

Adequate capacity for electrical service exists; therefore, the impact under Alternative 2 would be less than significant.

Natural Gas

Demand for natural gas under Alternative 2 would be approximately 894 million cubic feet per year, which is 790 million cubic feet greater than baseline usage. SCGC has indicated that it could adequately meet the increased demand of the reuse plan area.

A new backbone natural gas distribution system would be constructed to support reuse development under Alternative 2. The concept plan developed for Alternative 1 would be modified for a grid-piping system. The two existing mains, one in Warner Avenue and one in Red Hill Avenue, would provide natural gas to the system. A regulator station for "stepping down" the high-pressure gas in the Warner Avenue line would also be required.

Adequate capacity to provide natural gas exists, and the impact would be less than significant for reuse under Alternative 2.

Telephone

Reuse development under this alternative would require a new telephone distribution system. The concept plan developed as part of Alternative 1 would apply to this alternative as well. New substructure would be constructed in the planned roadways, following the grid pattern. Construction of additional off-site facilities would not be required. The capacity to provide telephone service exists; therefore no significant impact would occur under Alternative 2.

Cable Television

A new cable system would be required for reuse development under Alternative 2. The cable conduit layout would follow the grid pattern of local streets.

Solid Waste Disposal

Alternative 2 would generate approximately 32,000 tons of solid waste per year which is 27,300 tons per year more than baseline. This waste would be disposed of at the Frank R. Bowerman Landfill. All reuse development under this alternative would be required to comply with the City of Tustin and City of Irvine SRRE goals, policies, and programs, as applicable.

Landfill space in Orange County could adequately accommodate solid waste generated under Alternative 2 because landfills are not constrained. No additional solid waste facilities would be required to be constructed. Impacts would be less than significant.

Mitigation Measures

Under Alternative 2, no construction impacts beyond those identified in other sections of Chapters 4, 5 and 6 would result from utilities construction and no capacity impacts would occur; therefore, no mitigation would be required.

Implementation Measures

The implementation measures described under Alternative 1 to ensure that utility systems are provided concurrent with development would also apply to Alternative 2.

4.3.5 Alternative 3

Construction Impacts

Utility backbone systems would be constructed concurrently with arterial streets under Alternative 3. Since construction of these systems are part of reuse Alternative 1, impacts related to air quality, noise and other environmental issues are described within various sections of Chapters 4, 5, and 6. Where significant impacts would occur, mitigation measures are identified.

Operation Impacts

Domestic (Potable)Water

The average daily demand for water under Alternative 3 would be approximately 2.8 million GPD which would be an increase of approximately 1.5 million GPD over the baseline water useage at MCAS Tustin. Water supply is available, but the infrastructure to deliver water would be inadequate. As with Alternative 1, IRWD system resources are adequate to accommodate reuse development under Alternative 3.

Reuse development under Alternative 3 would require construction of a new backbone water system. The existing system would be abandoned in a phased manner and service connections to new development would be provided from a new backbone system and from existing water mains in adjacent roadways. The pipe system would follow the arterial loop connecting Tustin Ranch Road and Warner Avenue. It would be designed to provide service areas with multiple sources of supply. The pipe sizes would be finalized by IRWD based on demands, water pressure requirements, flow velocity criteria, and the fire-flow specification of OCFA. The system's final pipe sizes would be determined once the future development is defined in greater detail.

Capacity is available to meet potable water demand; therefore, the impact under Alternative 3 would be less than significant.

Reclaimed Water

Demand for reclaimed water would be approximately 1.8 million GPD. The IRWD has indicated that it can supply this water, but infrastructure for delivery would be required. As with Alternative 1, IRWD system resources are adequate to accommodate reuse development under Alternative 3.

Under this alternative, the reclaimed water plan designed for Alternative 1 would be slightly modified to reflect Alternative 3 roadway design. Any lakes or ponds built in the reuse plan area would be fed with reclaimed water, with ponds acting as holding basins for irrigation systems. No additional infrastructure would be constructed, and there is adequate capacity to supply reclaimed water; thus Alternative 3 impact would be less than significant.

Sanitary Sewer

The average daily flows and peak flows generated by Alternative 3 would be approximately 2.5 million GPD and 7.4 million GPD, respectively. This average daily flow would be approximately 1.8 million GPD more than baseline flow. As with Alternative 1, IRWD system resources are adequate to accommodate reuse development under Alternative 3.

Alternative 3 would require construction of a new sewer backbone system. The IRWD and OCSD would serve the site. The existing sewer system would be abandoned and a new backbone system would need to be constructed. The backbone system for this alternative would generally be the same as for Alternative 1.

IRWD and OCSD have indicated that they can provide sewer service to the reuse plan area. No additional facilities would be required. The environmental impact of constructing on-site sewer infrastructure is similar to the analysis of Alternative 2. Therefore, the impact under alternative 3 would be less than significant.

Drainage

Alternative 3 would require a new storm drain backbone system to provide adequate collection, conveyance, and disposal of runoff from the entire site. The parcel identified within the flood zone (subject to one to three feet of ponding) would be developed with Commercial/Business uses under this alternative. Engineering design is warranted to reduce flooding impacts. The drainage concept plan developed for Alternative 1 would be modified to reflect the direct loop alignment and the corresponding layout of drainage pipes. The improvements proposed to the regional channels, including Peters Canyon Channel, would occur the same as Alternative 1. Additional right-of-way would need to be secured for the improvements to the Santa Ana/Santa Fe Channel, same as Alternative 1. This alternative also includes a golf course that could accommodate the use of retention basins, same as Alternative 1.

The runoff from the site under Alternative 3 would be comparable to runoff generated by development under Alternative 1, as it would result in a comparable coverage of impervious surfaces with buildings, streets, and other impervious surfaces. Necessary drainage improvements can be provided, and Alternative 3 impact would be less than significant.

Electricity

Demand for electricity under Alternative 3 has been estimated at 145.0 million kWh per year under Alternative 3. This is 117.1 million kWh per year greater than the baseline usage. SCE has indicated that it can supply electricity to the reuse plan area with existing infrastructure

Reuse development under Alternative 3 would require a new backbone electrical system similar to that of Alternative 1. No new substations would be necessary to serve the site. The new electrical system would be underground.

Adequate capacity for electrical service exists; thus the impact under Alternative 3 would be less than significant.

Natural Gas

Total demand would be approximately 686 million cubic feet per year. This demand would be about 583 million cubic feet per year more than baseline consumption. SCGC can adequately serve the Alternative 3 development.

A new backbone natural gas distribution system would be constructed to support reuse development under Alternative 3. The concept plan developed for Alternative 1 would be slightly modified to reflect the minor variations in roadway alignments. The two existing mains, one in Warner Avenue and one in Red Hill Avenue, would provide natural gas to the system, same as Alternative 1. A regulator station for "stepping down" the high-pressure gas in the Warner Avenue line would also be required.

Adequate capacity to provide natural gas exists; therefore, Alternative 3 impact would be less than significant.

Telephone

Reuse development under Alternative 3 would require a new telephone distribution system. The concept plan developed as part of Alternative 1 could be modified to serve this alternative. New substructure would be constructed following the direct loop pattern. Construction of additional off-site facilities would not be required and telephone service could be adequately accommodated. Telephone system capacity exists, and Alternative 3 impact would be less than significant.

Cable Television

A new cable system would be required for reuse development under this alternative. Construction of additional off-site facilities would not be required but new internal infrastructure would be required in the roadway system. Because cable system capacity exists, impact under Alternative 3 would be less than significant.

Solid Waste Disposal

Solid waste generation under Alternative 3 would generate approximately 35,000 tons of solid waste per year. This amount of solid waste would be about 30,300 tons of solid waste per year more than baseline generation.

Solid waste generated under Alternative 3 would be disposed of at the Frank R. Bowerman Landfill. development under this alternative would comply with the City of Tustin and City of Irvine SRRE goals, policies, and programs, as applicable. These existing requirements are designed to reduce the amount of solid waste disposed of at landfills by 50 percent by the year 2000.

Landfill space in Orange County could accommodate solid waste generated under Alternative 3 because this space is not constrained. No additional solid waste facilities would be required to be constructed. Impacts would be less than significant.

Mitigation Measures

Under Alternative 3, no construction impacts beyond those identified in other sections of Chapters 4, 5, and 6 would result from utilities construction and no capacity impacts would occur; therefore, no mitigation would be required.

Implementation Measures

The implementation measures described under Alternative 1 to ensure that utility systems are provided concurrent with development would also apply to Alternative 3.

4.3.6 No Action Alternative

Impacts and Mitigation Measures

The No Action alternative would result in reduction in demand for all utilities over baseline conditions. Demand for potable water, sewerage, electricity, natural gas, cable television, telephone, and solid waste disposal would be reduced to levels necessary for caretaker status. Demand for non-potable water would remain at current levels to support agricultural operations on the site. Storm drain conditions would not change. No internal utility lines would need to be relocated, added, eliminated, or upgraded.

The No Action Alternative would have no impact on either the capacity or function of on-site utility systems. No construction of any on-site utility systems would be required. The impact resulting from the No Action Alternative would be less than significant. No mitigation measures would be required.

4.4 PUBLIC SERVICES AND FACILITIES

This section evaluates the impacts of the provision of fire protection, police protection, schools, libraries, park and recreation facilities, and bikeway/hiking trails.

4.4.1 Significance Criteria

Public services and facilities impacts would be significant if disposal or subsequent reuse would (1) result in provision of new or physically altered governmental facilities and the construction of such facilities would cause adverse changes to the physical environment, or (2) when the demand for public services or facilities would exceed the available or planned capacity of those services. For parks and recreation, the standard for capacity is three acres per 1,000 population (City of Tustin 1994a).

4.4.2 DON Disposal of MCAS Tustin

Impacts and Mitigation Measures

Disposal of DON property would have no direct impact on public services and facilities because disposal would be essentially a transfer of title. No mitigation would be necessary.

4.4.3 Alternative 1

Impacts

Redevelopment under Alternative 1 would result in approximately 4,600 dwelling units, accommodating a total population of approximately 12,500 persons. Of that population, approximately 10,900 persons would be located in the City of Tustin, with the remaining 1,600 in the City of Irvine. This increase in population would result in demands for fire and police protection services, schools, libraries, recreation facilities and biking/hiking trails. Alternative 1 would also develop approximately 11.4 million square feet of non-residential floor space at build-out.

Fire Protection/Emergency Medical Services

Alternative 1 would increase demand on OCFA fire prevention and protection services as well as emergency medical services because the number of people living and working on the site and the

amount of urban development on the site would increase. Individual development projects within the site would be required to meet existing OCFA regulations regarding construction materials and methods, emergency access, water mains, fire flow, fire hydrants, sprinkler systems, building setbacks, and other relevant regulations. Adherence to the OCFA regulations would reduce the risk of uncontrollable fire and increase the ability to efficiently provide fire protection services to the reuse plan area.

The number of fire stations in the areas surrounding the site would meet the demands created by the new development on the site. There would be no significant impact related to provision of new or expanded facilities since none would be needed; however, additional fire fighting personnel and equipment would be required at the existing fire stations.

Police Protection

Development of the site under Alternative 1 would increase the need for police emergency and protection services, primarily in the City of Tustin, which encompasses approximately 94 percent of the reuse plan area. The need for police protection services in the City of Tustin is assessed on the basis of resident population estimates, square footage of industrial uses, and square footage of retail uses. At build-out of Alternative 1, two new patrol units and three new investigative units would be necessary. All of these units could be accommodated at the existing police station and no new facilities would be required; as development occurs, police needs will be reviewed and accommodated through the annual budget process in the City of Tustin.

The police departments in Tustin and Irvine would be required to review development plans for projects within their respective jurisdictions to evaluate visibility, lighting, circulation patterns, emergency access, building design, landscaping/fencing, address signage, defensible space, and other security issues. This would maximize their ability to respond to emergencies.

Because the portion of the reuse plan area situated in the City of Irvine is quite small, ~~approximately six percent,~~ the Irvine Police Department would not require approximately 2 sworn officers. ~~new staff or equipment. Additional funds would be required to provide expanded services, which are estimated to be approximately $80,000 annually (City of Irvine 1995).~~ Additional personnel and equipment would be required according to the following formula: 1 support employee per 10 officers, 1 supervisor per 10 officers, and 1 vehicle per 45 sworn officers. The provision of this personnel and equipment can be accommodated by existing facilities. Impacts on the environment would be less than significant.

Schools

The reuse plan area is located within the TUSD, IUSD, and SAUSD. Development of the site would increase demand for schools. The following text provides a discussion of school funding legislation that applies to all three districts, and then discusses impacts to each of the three districts.

School Funding Legislation

State legislation was in enacted in 1998 that addresses how schools are financed and how development projects may be assessed for associated school impacts. On November 4, 1998, Senate Bill 50 (SB 50) was enacted by the California Legislature became effective via voter approval of Proposition 1A, a state-wide school bond measure of $9.2 billion. SB 50 was a comprehensive school facilities program that addressed funding sources, provided new cost standards and re-structured the existing school facilities funding for K-12 districts statewide. Of the $9.2 billion bond amount, $6.7 billion dollars are allocated for construction of K-12 school facilities.

SB 50 provides three ways to determine the funding levels provided to school districts. The default method, or Level 1, allows school districts to levy development fees to support construction of schools necessitated by that development and receive a 50 percent match from state bond money. Under Level 1, school impact fees are $0.31 cents per square foot of commercial development and $1.93 per square foot of residential development (subject to inflation increases every two years). Other funding sources may be necessary to meet the 50 percent local school district portion. Under Level 2, the school district may impose higher school impact fees (residential component only) to meet the 50 percent matching requirement. However, to establish Level 2 fees, the district must meet certain requirements and prepare a School Facilities Needs Analysis (SFNA). When the SFNA is adopted, a Level 3 fee is also established. That fee represents 100 percent of the facilities financing cost and is established in case state bond money runs out. The Level 3 fee may be reimbursed to the developer if and when state funding becomes available.

SB 50 includes a number of provisions in addition to setting development fees. It restructures the schools facilities funding program, addresses additional funding sources, and develops new cost standards. It also supercedes prior CEQA case law that had allowed local agencies to deny development projects based on impacts to schools.

Tustin Unified School District

In response to the NOI/NOP for this document, the TUSD concluded that new school sites would be needed to accommodate the students who would live within the reuse plan area. TUSD also noted that: (1) school facilities are needed at all grade levels; (2) the District's administrative offices are "grossly overcrowded and the district needs additional support facilities to accommodate the administration of additional schools;" and (3) statutory school fees do not provide sufficient funds for construction of necessary school facilities.

Student generation factors per residential unit for TUSD are 0.29 student per residential unit in grades K-5; 0.127 student per residential unit in grades 6-8; 0.153 student per residential unit in grades 9-12. Based on these factors, and the potential of a maximum of 2,585 dwelling units being developed within the TUSD boundaries, Alternative 1 would generate approximately 750 students for grades K-5, 328 students for grades 6-8, and 395 students for grades 9-12. The total 1,473 students generated would be an increase of 1,143 over the 330 students residing at the Air Station in baseline.

Alternative 1 would provide for two 10-acre elementary school sites and one 40-acre high school site within the TUSD. The TUSD has agreed that these sites would be considered adequate to accommodate new students generated by the reuse development, as well as some of the future growth anticipated for the Tustin community as a whole. (Appendix E contains a copy of an agreement between the City of Tustin and TUSD regarding school sites and other mitigation measures.) The TUSD would also receive the statutory development fees per SB 50 from both residential and commercial development on the site approximately as follows:

(1) $0.31 per square foot of commercial/industrial space for a total of about 7.1 million square feet of space; and

(2) $1.93 per square foot of residential space for a total of about 2,311 new dwelling units (274 units are expected to remain).

These fees would be collected as new development occurs according to the anticipated phasing described in Chapter 2. The TUSD could also receive a pass-through tax increment in the event a redevelopment project area is established for the reuse plan area. An alternative financing mechanism for the needed school facilities would be the District's establishment of a Community Facilities District. The TUSD has entered into an agreement with the City of Tustin defining the specific parameters that the District would use in establishing any assessment district. In the

agreement, the City has also supported the TUSD's use of temporary classrooms, certificates of participation, general obligation bonds, or state funding of school facilities.

The provision of three school sites, together with the statutory development fees under SB 50, redevelopment tax increment funds, the ability to use assessment district financing, and other funding services is anticipated to offer adequate resources to TUSD for needed school facilities and services to accommodate the increased student population resulting under Alternative 1. Since construction of TUSD schools is a part of Alternative 1 reuse, impacts related to air quality, noise and other environmental issues are described within various sections of Chapters 4, 5, and 6.

Irvine Unified School District

Of the approximately 4,600 total residential units proposed under Alternative 1, 753 new multi-family units on the eastern portion of the site would fall within the jurisdiction of the IUSD as well as 1,263 existing military units. District-wide student generation rates per residential unit for IUSD are 0.2543 for grades K through 6, 0.0745 for grades 7 and 8, and 0.1467 for grades 9 through 12 (IUSD 1999b). Given the potential for 2,016 dwelling units being developed within the IUSD boundaries, Alternative 1 would generate 959 students as follows: 513 elementary school students, 150 middle school students, and 269 high school students. In the baseline year, 657 students from MCAS Tustin attended schools in the IUSD. Therefore, the net increase in enrollment at the IUSD resulting from the reuse action would be 302 students.

The IUSD has identified a 20-acre school site within the reuse plan area to serve the growing K-8 student population in the district. This K-8 school site would not accommodate new students in grades 9-12. New grades 9-12 students are expected to be assigned to IUSD's existing and planned high school facilities. As with the TUSD, the IUSD has also concluded that current statutory school fees would not provide sufficient funds necessary for construction of school facilities to serve students living within the reuse area. (Appendix E also contains a copy of the negotiated agreement between the City of Tustin and IUSD.)

The IUSD would receive the statutory development fees from residential and commercial development on the site, approximately as follows:

(1) $0.31 per square foot for commercial/industrial development for a portion of about 280,000 square feet of development in golf village in Phases III and IV, which would span TUSD and IUSD boundaries.

(2) $1.93 per square foot of new housing construction or additions, at a minimum 1,753 new units.

The IUSD could also receive pass-through tax increment financing for its facilities in the event the redevelopment project area for the site is established. An alternative financing mechanism for the needed school facilities would be the District's establishment of a Community Facilities District. The IUSD has entered into an agreement with the City of Tustin defining the specific parameters that the District might use in establishing any assessment district. In the agreement, the IUSD's use of temporary classrooms, certificates of participation, general obligation bonds, or state funding of facilities would also be supported.

While Alternative 1 would result in an increase in demand for the IUSD's facilities and services, a new school site has been identified and reserved in the reuse area. Since the IUSD school is part of Alternative 1 reuse, impacts related to air quality, noise, and other environmental issues are described within various sections of Chapters 4, 5, and 6. Where significant impacts would occur, mitigation measures are identified.

Santa Ana Unified School District

An area of approximately 122 acres in the west corner of the site lies within the jurisdiction of the SAUSD. Under Alternative 1, this area would be developed with Commercial/Business uses. No housing exists in this area to be reused, and no new housing would be constructed in this area. Therefore, unlike TUSD and IUSD, no students would be generated directly to the SAUSD via a housing development.

Indirectly, new students would be generated through the provision of new employment. The commercial uses would generate employment and if new employees were to seek housing in locations served by the SAUSD, they would indirectly generate students. The new employees could either locate in existing housing, which has already been included in census and student generation statistics; or in new housing, which, by state law, can be assessed statutory school fees in the current amount of $1.93 per square foot. In addition, the District can assess a fee on commercial and industrial development, which currently is $0.31 per square foot.

The population and employment impacts of Alternative 1 are discussed in Section 4.2 (Socioeconomics). Potential financial impacts on the SAUSD due to the need for construction of new facilities resulting from indirect or induced growth as a result of Alternative 1 are evaluated in two reports. These are entitled, *Updated Report on the School Facility Indirect Impact of*

Redevelopment of the MCAS Tustin Site on the Santa Ana Unified School District (City of Tustin 1999j), hereafter called the Updated Report, and the *Updated Report on the School Facility Indirect Impact of Redevelopment of the MCAS Tustin Site Upon Household Growth in the Santa Ana Unified School District* (City of Tustin 1999i), hereafter called the Updated Household Growth Report.

Because there is no established or widely accepted method for determining the indirect household growth associated with a project's employment, the Updated Household Growth Report presents two methods. One method presents a high estimate of growth and the other presents a low estimate of growth, thereby bracketing the range of probable impacts. The Updated Report determines a school facility's cost by multiplying the estimated cost per student for land and facilities by the number of students generated. Given that there are two possible household growth numbers which generates two estimates for student generation, there are two school facility costs (high and low). The revenue amounts available to SAUSD are presented in the Updated Report as well. Revenue is assumed to be provided from commercial school impact fees (generated by development within the reuse plan area), from residential school impact fees (generated by new residential units elsewhere in the SAUSD constructed to accommodate the high and low household growth estimates), possible tax increment financing if a redevelopment project is formed, and possible additional state funding under SB 50. To determine the financial impact to the SAUSD, the total cost (land and facilities) associated with students indirectly generated is compared to the total anticipated revenue.

Based on the Updated Household Growth Report, growth in the SAUSD would range from 88 households to 547 households. Based on SAUSD student generation rates of 0.53 for K-5, 0.20 for 6-8, and 0.20 for 9-12, the range of students generated would be 82 to 509 (City of Tustin 1999j). The total cost, land and facilities, to serve those students would range from $1.3 million to $8.1 million.

The revenue available to the SAUSD would vary also with the high and low range of employment. Under the high estimate, 547 projected new households would generate approximately $1.4 million in residential school impact fees. The low estimate of 88 units would generate residential school impact fees of approximately $231,000. Commercial school impact fees from development in the reuse plan area is fixed and would be approximately $681,000. Other sources of revenue identified in the Updated Schools Report include approximately $2 .8 million from potential redevelopment tax increment financing.

Table 4.4-1 summarizes the probable costs associated with indirect student generation and tbe potential revenue sources to meet that need, given both the high and low household generation assumption. Under the high estimate of indirect bousehold generation impacts, the SAUSD would experience a deficit of approximately $3.3 million. However, under the low estimate assumptions, the SAUSD would experience a surplus of approximately $2.4 million.

Table 4.4-1
Alternative 1 Estimated Costs and Revenue to SAUSD
Associated with Indirect Student Generation

	Low Estimate	High Estimate
No. of Indirect/Induced Jobs Generated	88	547
No. of Students Indirectly Generated	82	509
Gross School Cost (Land and Facilities)	$1,311,055	$8,149,401
- Less Commercial Fees [1]	$681,363	$681,383
- Less Residential Fees [2]	$231,662	$1,439,988
- Less Redevelopment Tax Increment [3]	$2,775,555	$2,775,555
Net Cost Impact (deficit)[4]	$2,377,524	($3,252,495)

[1] Given 2,197,944 square feet of commercial development within the SAUSD.
[2] Fees assume all household growth in new housing with average size of 1,364 square feet.
[3] Net present value.
[4] Without Level 2 and 3 fees.
Source: Updated Report (City of Tustin 1999j) and Updated Household Growth Report (City of Tustin 1999i)

In the event that the SAUSD does not receive enough school impact development fees to construct facilities for students generated under Alternative 1 by indirect employment (such as under the high estimate scenario described above), it would have several options to address the shortfall. First, the district could apply for the 50 percent match funding provided by the state under SB 50. Secondly, the SAUSD could increase school impact development fees to Level 2 by preparing a SFNA. As noted in the Updated Report, the SAUSD has indicated that they intend to complete the SFNA. Third, the SAUSD could find other state revenue sources. The Updated Report states that the SAUSD has been very successful in obtaining state funding in the past. Finally, if the state bond money runs out, then the SAUSD may collect Level 3 school impact development fees for the full costs of constructing school facilities. Given the wide range of possible impacts, alternative sources of funding could be available should a funding deficit occur. It is anticipated that SAUSD would not be adversely impacted financially by Alternative 1. Since the need for new facilities is not yet confirmed, there is no facility design or location that could be evaluated in this EIS/EIR for physical

impacts to the environment. Such physical impacts may be significant and, if so, mitigation would be the responsibility of the SAUSD.

Libraries

The projected population of Alternative 1 is 12,500 residents which is a net increase of approximately 9,350 from the baseline population of 3,150. Under baseline conditions a small library was available only to military personnel which served needs within the reuse plan area. While it is possible that some of the baseline population utilized the public library system, it is appropriate to calculate the need for library facilities using the entire proposed population as new demand. Given the county's criteria, Alternative 1 would result in a demand of up to approximately 2,500 square feet of library space. This relatively small amount of space is well below the library system's general minimum size of 10,000 square feet for a branch library, and would not trigger the need for a new facility. There are also three existing public libraries within a three mile radius of the reuse plan area. There would be no significant effects on the environment.

Parks and Recreation

Three types of park sites would be provided under Alternative 1; a regional park, a community park, and several smaller neighborhood parks. A privately owned golf course would be constructed as well, but would be available for public usage. These facilities would provide park and recreation opportunities to the population of the reuse plan area as well as the region. Alternative 1 would provide for a total of approximately 127 acres of parks on the site, excluding the 159-acre golf course, play areas associated with schools, and child care facilities.

Using the standard of three acres of park per 1,000 population (City of Tustin 1994a), approximately 32.7 acres of parkland would be required to support the projected on-site Tustin residential population of approximately 10,900 persons and 4.8 acres would be required for the Irvine population of 1,600. It is appropriate to utilize the full build-out population figures instead of the difference between baseline and proposed because the military population had excellent recreation facilities.

The proposed reuse plan would provide an 84.5 acre Urban Regional Park around the northern blimp hangar which would serve as a recreation complex for a variety of regional functions. The County of Orange would be responsible for operation and maintenance of the park. This recreation facility

would resolve almost 80 percent of the City of Tustin parkland deficiency which is one of the purposes of the reuse plan as a whole. This would be a beneficial impact.

The on-site residential population in Tustin would be served by two neighborhood parks and one community park. Total acreage for these four smaller parks is approximately 35 acres which exceeds the City of Tustin requirement. The same situation would occur in the City of Irvine where the eight-acre park would more than exceed the standard. Once constructed, these parks would meet residential population demand and the parks in Tustin would provide an additional benefit by further reducing the existing parkland deficit. Since the parks are part of Alternative 1 reuse, impacts related to air quality, noise, and other environmental issues are described within various sections of Chapters 4, 5, and 6. Where significant impacts would occur, mitigation measures are identified.

Recreational Bikeway/Trails

City of Tustin

Alternative 1 would include bikeway/riding and hiking trails. A Class I bikeway and riding and hiking trail (Route 40 - Peters Canyon Trail) would be constructed by the County of Orange adjacent to Peters Canyon Channel. Class II bikeways would be constructed in the reuse plan area along Valencia South Loop Road, Tustin Ranch Road, Valencia Avenue, Moffett Avenue, Warner Avenue, Armstrong Avenue, Von Karman Avenue, and the East and West Connector Roads. This system would connect vital links necessary for a comprehensive regional and improved local bikeway and riding and hiking trail system and would be a beneficial impact.

In addition, planning for nonresidential land uses would incorporate bicycling amenities, where appropriate, in accordance with SCAQMD air quality regulations. These amenities might include bike storage lockers, bike racks, and showers.

City of Irvine

The City of Irvine's existing Class II bikeway network is developed in the immediate area of the site. Portions of two Class I bikeways are proposed within Irvine jurisdictional boundaries. Both the Peters Canyon bikeway and Barranca Channel bikeways would be completed following improvements to those channels.

The proposed bikeways/trails are intended to meet the demand for new on-site residents, to augment the existing bikeway/trail system, and to provide flexibility as the regional system expands. The system has been developed collectively by the affected agencies: the City of Tustin, the OCPFRD, OCEMA, the City of Santa Ana, and the City of Irvine. On-road bikeways within the boundaries of the reuse plan area would be phased in conjunction with the internal arterial highway network. The Class I bikeway along Peters Canyon would be completed by the County, provided the OCFCD has funding sources for completion of channel improvements. The Barranca Class I bikeway would be completed after completion of Barranca Channel improvements. The cities of Tustin and Irvine have taken the position that they will not provide funding for regional horse trail/hiking improvements that do not directly benefit reuse development. Since the bikeways/trails within Tustin and Irvine are part of Alternative 1 reuse, impacts related to air quality, noise, and other environmental issues are described within various sections of Chapters 4, 5, and 6. Where significant impacts would occur, mitigation measures are identified.

City of Santa Ana

Alternative 1 would not affect the ability of Santa Ana to provide planned bikeways and their planned facilities do not enter the reuse plan area. There would be no impact.

Mitigation Measures

Under Alternative 1, no construction impacts beyond those identified in other sections of Chapters 4, 5, and 6 would result from facilities construction, and no capacity impacts would occur; therefore no mitigation would be required. As noted in the schools impact discussion, students generated by indirect employment would result in a demand for school services. Given the uncertainty regarding the actual number of students generated, state-required school impact development fees may or may not be sufficient to construct needed facilities. There are other funding sources that should be available, and given the SAUSD's success in the past, it is reasonable to assume that they will receive the 50 percent match from the State. Raising fees to Level 2 or Level 3 is specifically permitted by law, and the lead agency is not aware of any opposition in the past to SAUSD's setting of school fees. Therefore, it's reasonable to assume their local efforts will also succeed. Additionally, it should be noted that on November 2, 1999, voters approved a $145 million school construction bond for the SAUSD. Reuse would not require any action beyond the payment of state-required school fees. Any mitigation for possible physical impacts associated with future new facilities to accommodate potential indirect student generation would be the responsibility of the

SAUSD because the actual need at this time is speculative, and there is no facility design or location for evaluation in this EIS/EIR.

Implementation Measures

To support proposed development in the reuse plan area, public services and facilities must be provided concurrent with demand. The following implementation measures will ensure that public services and facilities are provided by the project developer when needed. This list continues the lettering system in Section 4.3 which contains implementation and phasing measures (a) through (k).

General

(l) The City of Tustin and the City of Irvine, each within its respective jurisdiction, shall ensure that adequate fire protection, police protection, and parks and recreation facilities (including bikeways/trails) needed to adequately serve the reuse plan area shall be provided as necessary. To eliminate any negative impact the project could have on each community's general fund, financing mechanisms including but not limited to developer fees, assessment district financing, and/or tax increment financing (in the event that a redevelopment project area is created for the site), shall be developed and used as determined appropriate by each City. Specifically;

(1) Applicants for private development projects shall be required to enter into an agreement with City of Tustin or the City of Irvine, as applicable, to establish a fair-share mechanism to provide needed fire and police protection services and parks and recreation facilities (including bikeways) through the use of fee schedules, assessment district financing, Community Facility District financing, or other mechanisms as determined appropriate by each respective city.

(2) Recipients of property through public conveyance process shall be required to mitigate any impacts of their public uses of property on public services and facilities.

(m) The cities of Tustin and Irvine shall jointly consult and coordinate with the OCPFRD/Harbors, Beaches and Parks, Program Management and Coordination Division, in preparation of trail designs for the Peters Canyon and Barranca trails within the reuse plan area. Improvements for each of these trails would be installed upon completion of flood control channel improvements and approval of their joint use by the OCPFRD.

Fire Protection/Emergency Medical Services

(n) Prior to the first final map recordation or building permit issuance for development (except for financing and reconveyances purposes), the project developer could be required to enter into an agreement with the City of Tustin or City of Irvine/OCFA, as applicable, to address impacts of the project on fire services. Such agreement could include participation for fire protection, personnel and equipment necessary to serve the project and eliminate any negative impacts on fire protection services.

(o) Prior to issuance of building permits, the project developer shall work closely with the OCFA to ensure that adequate fire protection measures are implemented in the project.

(p) Prior to issuance of building permits for phased projects, the project developer shall submit a construction pbasing plan to the OCFA demonstrating that emergency vehicle access is adequate.

(q) Prior to the issuance of ~~certificates of use and occupancy~~ building permits, the project developer shall submit a fire hydrant location plan for the review and approval of the Fire Chief and ensure that fire hydrants capable of flows in amounts approved by tbe OCFA are in place and operational to meet fire flow requirements.

Police Protection

(r) Prior to issuance of building permits, the project developer shall work closely with the respective Police Department to ensure that adequate security precautions are implemented in the project.

Schools

(s) Prior to the issuance of certificates of use and occupancy, the project developer shall submit to the respective City proof of payment of appropriate school fees adopted by the applicable school district.

Parks and Recreation

(t) Prior to the first final map recordation (except for financing and reconveyance purposes) or building permit issuance for development within the City of Tustin portion of the site, the project developer shall be required to provide evidence of compliance with all requirements and standards of the City of Tustin Park Code.

(u) Prior to the first final map recordation or building permit issuance within the City of Irvine portion of the site, the project developer shall be required to provide evidence of compliance with all requirements and standards of the City of Irvine Park Code.

(v) Prior to the first concept plan for tentative tract map in the City of Tustin, the project developer shall file a petition for the creation of a landscape maintenance district for the project area with the City of Tustin. The district shall include public neighborhood parks, landscape improvements, and specific trails (Barranca only), the medians in arterials, or other eligible items mutually agreed to by the petitioner and the City of Tustin. In the event that a district is not established prior to issuance of the first building permit, maintenance of items mentioned above shall be the responsibility of a community association.

~~(w) Prior to the first final map recordation (except for financing and reconveyance purposes), or building permit issuance, the project developer shall be required to enter into an agreement with the cities of Tustin and Irvine to participate in improvements for the Peters Canyon Regional Trail as well as the Barranca Channel Trail within the reuse plan area, should the cities establish such a program of improvements.~~

(w) "Prior to approval of any subdivision map (except for financing or conveyance purposes), an agreement will be executed with the following agencies for the associated trail improvements:

a. County of Orange Harbors, Beaches – identification of a project-specific fair share contribution toward the installation of necessary regional bikeway trail improvements within Peters Canyon Channel, to be installed in conjunction with the County of Orange's other channel improvements;

b. City of Tustin – the identification of a project-specific fair sbare contribution toward the installation of Class II bicycle trails through the project site. For the area of the site northeast of Irvine Center Drive, a separate agreement would be required to ensure the provision of a

bikeway right-of-way easement, and design and construction of a bike trial along the SCRRA/OCTA rail tracks from Harvard Avenue westerly to the Peters Canyon Channel. In addition, project developers of the areas of the site southeast of the Peters Canyon Channel would need to accommodate access to both the Peters Canyon Trail and the trail adjacent to the SCRRA/OCTA tracks in any project site design including dedication of any necessary recreational trail easements;

c. City of Tustin – the identification of a project-specific fair-share contribution toward installation of Class I bikeway trail improvements northerly of Barranca Parkway after completion of the Barranca Channel improvements. For proposed developments adjacent to Barranca Channel, separate agreements would be required to ensure the establishment of a bikeway right-of-way easement between Jamboree Road and Red Hill Avenue.

Nothing shall preclude the City of Tustin from transferring the obligation onto project developers within the project area.

4.4.4 Alternative 2

Impacts

Alternative 2 would result in a total of 6,205 dwelling units for a resident population of approximately 16,400 people. That population would be primarily in Tustin (approximately 14,800), with approximately 1,600 in Irvine. Alternative 2 would also result in about 9.8 million square feet of nonresidential development.

Fire Protection/Emergency Medical Services

Alternative 2 would generate additional demand for fire safety and protection services as well as emergency medical services because of increased population and development. As with Alternative 1, individual development projects within the site would be required to meet existing OCFA regulations which would reduce the risk of uncontrollable fire and increase their ability to efficiently provide fire protection services.

While additional fire fighting personnel and equipment would be required at the existing stations, the number of existing fire stations in the areas surrounding the site would meet the demands created

by the new development on the site. Accordingly, there would be no significant impact to the environment related to the construction of new or upgraded facilities.

Police Protection

Alternative 2 would increase demand for police protection within the site due to increased intensity of use. Using the demand criteria identified previously for Alternative 1, Alternative 2 would result in a demand of up to three patrol units and five investigative units. Impacts on the City of Irvine would be similar to the impacts under Alternative 1. The increase in police services required under Alternative 2 at build-out would not result in the construction of new police facilities; therefore, there would be no significant impact to the environment.

Schools

This alternative would have the greatest total student generation because it has the greatest number of residential units. Under this Alternative, four school sites are identified in similar locations to Alternative 1. Most students would attend schools in the TUSD. Residential development within the TUSD would generate 2,388 students as follows: 1,215 in grades K through 5, 532 students in grades 6 through 8, and 641 students in grades 9 through 12. This is 2,058 students greater than the 330 students residing at the Air Station under baseline. In the IUSD, the number of residential units proposed would be identical to Alternative 1, so the net change between baseline and proposed would be 302 students. Of the four schools associated with Alternative 2, three would be located within TUSD and one in IUSD. The provision of school sites, together with statutory development fees and other fees identified under Alternative 2 would be adequate to accommodate the resulting TUSD and IUSD student population (refer also to Appendix E for agreements between the City of Tustin and both school districts). Because these schools are part of Alternative 2 reuse, impacts related to specific environmental issues are addressed in Cbapters 4, 5, and 6, and mitigation is identified where significant impacts would occur.

It should be noted that total school fee revenue to the TUSD would be reduced under this alternative as compared to Alternative 1, since the commercial core would be developed primarily with residential uses. School fees from this residential development could total less than the fees assessed from the commercial and mixed-use commercial/residential development anticipated under Alternative 1.

As described in Alternative 1, there would be no direct student impacts to the SAUSD because there would be no residential development within their boundaries. All of the reuse plan area within the District would be developed with Commercial/Business uses under Alternative 2. Employment associated with Alternative 2 would, however, indirectly generate new students to the District. The number of student generated indirectly would he less under this alternative than under Alternative 1 because it would have more residential development and less employment generating commercial, business, and industrial uses.

To determine the potential indirect household growth, two studies have been completed by the City of Tustin. The methodologies are summarized under Alternative 1. Table 4.4-2 provides a synopsis of the results of that analysis for this alternative.

Table 4.4-2
Alternative 2 Estimated Costs and Revenue to SAUSD
Associated with Indirect Student Generation

	Low Estimate	High Estimate
No. of Indirect/Induced Jobs Generated	72	470
No. of Students Indirectly Generated	67	437
Gross School Cost (Land and Facilities)	$1,072,682	$7,002,227
- Less Commercial Fees[1]	$681,363	$681,363
- Less Residential Fees[2]	$189,541	$1,237,284
- Less Redevelopment Tax Increment[3]	$2,775,555	$2,775,555
Net Cost Impact (deficit)[4]	$2,573,777	($2,308,026)

(1) Given 2,197,944 square feet of commercial development within the SAUSD.
(2) Fees assume all household growth in new housing with average size of 1,364 square feet.
(3) Net present value.
(4) Without Level 2 and 3 fees.
Source: Updated Report (City of Tustin 1999j) and Updated Household Growth Report (City of Tustin 1999i)

Given the high estimate of indirect household generation impacts, the SAUSD would experience a deficit of approximately $2.3 million dollars. However, under the low estimate assumptions, the SAUSD would experience a surplus of approximately $2.6 million. If SAUSD does not receive enough development fees to construct facilities for students generated under Alternative 2, it would have several options to address the shortfall. The District could apply for 50 percent matching funds from the state, they could raise development fees to Level 2 as allowed under SB 50 (they intend to complete a SFNA which is required for this action), and they could ohtain other state funding

sources. Finally, they may obtain Level 3 development fees for the full cost of constructing facilities. Given the wide range of possible impacts, from a deficit of over $2 million to a surplus of over $2 million, and alternative sources of funding are available should the deficit occur, it is anticipated that SAUSD would not be adversely impacted financially by Alternative 2. Since the need for new facilities is not yet confirmed, there is no facility design or location that could be evaluated in this EIS/EIR for physical impacts to the environment. Such physical impacts may be significant, if so, mitigation would be the responsibility of the SAUSD.

Libraries

Based on a build-out population of approximately 16,400 residents and a demand factor of 0.2 square feet of library space per capita, Alternative 2 would result in demand of about 3,280 square feet of library space. (It is appropriate to calculate demand based on the total population, not the net difference from the baseline, because there was a private library for the residents of MCAS Tustin.) This demand for library space is less than the minimum library size requirement of 10,000 square feet for the Orange County library system. Additionally, proposed land uses would have resource and library facilities and there are three libraries within a three-mile radius of the reuse plan area. In summary, there would be no significant effects on the environment.

Parks and Recreation

The facilities proposed under Alternative 2 would be intended to meet the demand of new development in the reuse plan area as well as to offset park deficiency in the City of Tustin. Alternative 2 would have one community park and two neighborhood parks for a total of approximately 63 acres of new parkland. Alternative 2 would also include a cultural center of approximately 56 acres. Thus, Alternative 2 would result in a total of approximately 119 acres of parks and recreational facilities. This figure excludes the 177-acre privately owned golf course, play areas associated with schools, and child care facilities.

Under this alternative, a 47-acre community park would re-utilize the existing recreation facilities at the Air Station. Two, eight-acre neighborhood parks would also be provided, one eacb in the City of Irvine and City of Tustin. The cultural center would contain the northern blimp hangar, if renovation is financially feasible. The 56-acre Cultural Center would off-set 51 percent of the 107-acre parkland shortfall in the City of Tustin. This is one of the purposes of reuse and a beneficial effect.

Based on a demand factor of three acres of parks per 1,000 population, total new park space would be approximately 44.5 acres for the City of Tustin and 4.8 acres for the City of Irvine. Neighborbood and community park acreage to serve the residential population would total 55 acres which is more than adequate to satisfy the parkland standard and provide an additional 10.5 acres to off-set the identified shortfall. This is a beneficial effect. Within Irvine, the 4.8-acre requirement would be more than satisfied by the eight-acre neighborbood park. Since the parks are part of Alternative 2 reuse, impacts related to specific environmental issues are addressed in Chapters 4, 5, and 6, and mitigation is identified where significant impacts would occur.

Recreational Bikeway/Trails

Under Alternative 2, Class II bikeways would be constructed along Valencia Avenue, Warner Avenue, Armstrong Avenue, Von Karman Avenue/Tustin Ranch Road, and the unnamed road connecting Warner Avenue and Edinger Avenue. These bikeways would be intended to meet the demand for new on-site residents, to augment the existing system, and to provide flexibility as the regional system expands. Any modifications would be developed collectively by the affected agencies: the City of Tustin, the OCPFRD, and the City of Irvine. As stated under Alternative 1, the cities of Tustin and Irvine would not provide funding for regional horse trail/hiking improvements that do not directly benefit tbe reuse development. At build-out of these bikeways, there would be a beneficial trails system that links with other trails in the region. Since bikeways/trails are part of Alternative 2 reuse, impacts related to specific environmental issues are addressed in Chapters 4, 5, and 6, and mitigation is identified where significant impacts would occur.

Mitigation Measures

Under Alternative 2, no environmental impacts beyond those identified in other sections of Chapters 4, 5, and 6 would result from facilities construction, and no capacity impacts would occur; therefore no mitigation would be required. As with Alternative 1, reuse would not require anything beyond payment of school fees. Any mitigation for possible physical impacts associated with construction of school facilities in the SAUSD to accommodate potential indirect student generation would be the responsibility of the district because the actual need at this time is speculative and there is no facility design or location for evaluation in this EIS/EIR.

Implementation Measures

The implementation measures for public services and facilities described under Alternative 1 would also apply to Alternative 2.

4.4.5 Alternative 3

Impacts

Alternative 3 would result in up to approximately 4,340 dwelling units. These residential units would accommodate a resident population of up to approximately 12,000 persons of which approximately 10,400 would reside in Tustin and approximately 1,600 would reside in Irvine. Alternative 3 would also result in a plus up to about 10.9 million square feet of nonresidential floor area.

Fire Protection/Emergency Medical Services

Alternative 3 would generate additional demand for fire safety and protection services as well as emergency medical services similar to increased demand associated with Alternatives 1 or 2. This alternative would have the fewest number of residential units, with nonresidential square-footage in the mid-range of the three. Individual development projects within the site would be required to meet existing OCFA regulations, which would reduce the risk of uncontrollable fire and increase their ability to efficiently provide fire protection services.

While additional fire fighting personnel and equipment would be required at the existing stations, the number of existing fire stations in the areas surrounding the site would meet the demands created by the new development on the site. Accordingly, there would be no significant impact to the environment related to construction of new or upgraded facilities.

Police Protection

Alternative 3 would result in an increased demand for police protection services. Using the demand criteria listed previously for Alternative 1, Alternative 3 would result in a demand of up to three patrol units and four investigative units. Impacts on the City of Irvine would be similar to the impacts under Alternative 1. The increase in police services required under Alternative 3 at build-out would not result in the construction of new police facilities; therefore, no significant impact to the environment would occur.

Schools

Alternative 3 has two designated school sites, both located within the TUSD. Because Alternative 3 would have the lowest number of residential units overall, it would result in the fewest number of students generated to TUSD or IUSD. It would have a greater amount of commercial, business and retail uses than Alternative 2, meaning it would generate more indirect students to SAUSD; however, it would still be less than Alternative 1.

The TUSD would gain an additional 1,696 students as follows: 863 in grades K through 5, 378 in grades 6 through 8, and 455 in grades 9 through 12. This is 1,366 more students than the 330 students associated with the baseline year.

With the addition of 100 new residential dwelling units under this alternative, added to the 1,263 existing military family housing, units whicb would be converted to civilian housing there would be a total of 1,363 dwelling units located within IUSD. Per IUSD generation rates, these units would generate 649 students (347 in elementary grades, 102 middle school students, and 200 high school students). This would be 148 fewer students than the 657 generated in the baseline year. The reduced impact is related to the conversion of military housing to civilian use because the military family housing was available only to families with two or more children. Some housing under reuse would be occupied by persons with no children.

The provision of school sites, together with statutory development fees and other fees identified under Alternative 1 is considered adequate to accommodate the resulting student population in TUSD and IUSD (refer to Appendix E). Because these schools are part of Alternative 3 reuse, impacts related to specific environmental issues are addressed in Chapters 4, 5, and 6, and mitigation is identified where significant impacts would occur.

To determine the potential indirect household growth and therefore indirect impacts to SAUSD under Alternative 3, two studies bave been completed by the City of Tustin. The methodologies are summarized under Alternative 1. Table 4.4-3 provides a synopsis of the results of that analysis for this alternative.

Table 4.4-3
Alternative 3 Estimated Costs and Revenue to SAUSD
Associated with Indirect Student Generation

	Low Estimate	High Estimate
No. of Indirect/Induced Jobs Generated	73	486
No. of Students Indirectly Generated	68	452
Gross School Cost (Land and Facilities)	$1,087,580	$7,240,601
- Less Commercial Fees[1]	$681,363	$681,363
- Less Residential Fees[2]	$192,174	$1,279,405
- Less Redevelopment Tax Increment[3]	$2,775,555	$2,775,555
Net Cost Impact (deficit)[4]	$2,561,551	($2,504,279)

[1] Given 2,197,944 square feet of commercial development within the SAUSD.
[2] Fees assume all household growth in new housing with average size of 1,364 square feet.
[3] Net present value.
[4] Without Level 2 and 3 fees.
Source: Updated Report (City of Tustin 1999j) and Updated Household Growth Report (City of Tustin 1999i)

Given the high estimate of indirect household generation impacts, the SAUSD would experience a deficit of approximately $2.5 million dollars. However, under the low estimate assumptions, the SAUSD would experience a surplus of approximately $2.6 million. If SAUSD does not receive enough development fees to construct facilities for students generated under Alternative 3, it would bave several options to address the shortfall. The District could apply for 50 percent matching funds from the state, they could raise development fees to Level 2 as allowed under SB 50 (they intend to complete a SFNA which is required for this action), and they could obtain other state funding sources. Finally, they may obtain Level 3 development fees for the full cost of constructing facilities. Given the wide range of possible impacts, from deficit of over $2.5 million to surplus of over $2.5 million, and alternative sources of funding are available should the deficit occur, it is anticipated the SAUSD would not be adversely impacted financially by Alternative 3. Since the need for new facilities is not yet confirmed, there is no facility design or location that could be evaluated in this EIS/EIR for physical impacts to the environment. Such physical impacts may be significant and, if so, mitigation would be the responsibility of the SAUSD.

Libraries

Alternative 3 would result in a residential population of approximately 12,000 people which would result in demand of about 2,400 square feet of library space. (It is appropriate to calculate demand based on the total population, not the net difference from the baseline, because there was a private

library for the residents of MCAS Tustin.) This demand for library space is less than the minimum library size requirement of 10,000 square feet for the Orange County library system. In addition, the proposed land uses would have resource and library facilities at the three public libraries within a three-mile radius of the reuse plan area. This impact would be less than significant.

Parks and Recreation

Alternative 3 would result in a mix of community and neighborhood parks for a total of approximately 67 acres of parkland. Alternative 3 would also include a cultural center on approximately 51 acres. Thus, the total combined recreation and park facilities under Alternative 3 would be approximately 118 acres. This figures excludes the 187-acre privately owned golf course, play areas associated with schools, and child care facilities.

Under this alternative, a 51-acre community park would re-utilize the existing recreation facilities at the Air Station. Two, eight-acre neighborhood parks would also be provided, one each in the City of Irvine and the City of Tustin. The cultural center would contain the northern blimp bangar, if renovation is financially feasible. The 51 acre Cultural Center would off-set approximately 48 percent of the 107 acre parkland deficit in the City of Tustin. This is one of the purposes of the project and a beneficial impact.

Based on a demand factor of three acres of parks per 1,000 population, total new park space would be approximately 31.2 acres for the City of Tustin and 4.8 acres for the City of Irvine. Neighborhood and community park acreage proposed to serve the residential population would total 67 acres which is more than adequate to satisfy the parkland standard and provide an additional 35.8 acres to further off-set the identified shortfall. This would also be a beneficial effect. Within Irvine, the 4.8-acre requirement would be more than satisfied by the eight- acre neighborhood park. Since the parks are part of Alternative 3 reuse, impacts related to specific environmental issues are addressed in Chapters 4, 5, and 6, and mitigation is identified where significant impacts would occur.

Recreational Bikeway/Trails

Class II bikeways would be constructed along Valencia Avenue, Moffett Avenue, Warner Avenue, Armstrong Avenue, Von Karman Avenue/Tustin Ranch Road, the East and West Connector Roads, and Valencia South Loop Road. These bikeways would be intended to meet the demand for new on-site residents, to augment the existing bikeway/riding and hiking trail system, and to provide flexibility as the regional system expands. Any proposed bikeway/riding and hiking trail

modifications would be developed collectively by the affected agencies: the City of Tustin, Orange County, and the City of Irvine. Therefore, the provision of bikeways and trails under the Alternative 3 would be adequate to support the planned development, and no other facilities would be required. As stated under Alternative 1, the cities of Tustin and Irvine would not provide funding for regional horse trail/hiking improvements that do not directly benefit the reuse development. At build-out of these bikeways, there will be a beneficial trails system that links with other trails in the region. Since bikeways/trails are part of Alternative 3 reuse, impacts related to specific environmental issues are addressed in Chapters 4, 5, and 6, and mitigation is identified where significant impacts would occur.

Mitigation Measures

Under Alternative 3, no environmental impacts beyond those identified in other sections of Chapters 4, 5, and 6 would result from facilities construction, and no capacity impacts would occur; therefore, no mitigation would be required. As with Alternative 1, reuse would not require anything beyond payment of school fees. Any mitigation for possible physical impacts associated with construction of school facilities in the SAUSD to accommodate potential indirect student generation would be the responsibility of the district because the actual need at this time is speculative and there is no facility design or location for evaluation in this EIS/EIR.

Implementation Measnres

The implementation measures for public services and facilities described under Alternative 1 would also apply to Alternative 3.

4.4.6 No Action Alternative

Impact

The No Action Alternative would not result in additional demand for public services or facilities and impacts would be less than significant. However, the No Action Alternative would preclude the beneficial effect associated with development of parkland which is a purpose and need of the reuse plan.

Mitigation Measnres

Because this alternative would have no significant impacts to public services and facilities, no mitigation measures would be required. Only development of some type of reuse would provide the opportunity to provide parkland and reduce the identified deficiency in the City of Tustin.

4.5 AESTHETICS

4.5.1 Significance Criteria

Visual impacts may be associated with change in either the built or natural environment and can be short term or long term. The presence of heavy machinery during construction of buildings and infrastructure is considered a short-term impact. Large trucks, bulldozers, and other construction equipment would be visible within the construction/demolition zone. Long-term visual changes are associated with altering the natural topography, demolishing existing buildings and structures, and constructing new buildings and structures. The significance of visual effects is very subjective and depends upon the degree of alteration, the scenic quality of the area disturbed, the sensitivity of the viewers, and the viewer perception of features in the viewshed.

The degree of alteration is considered in terms of visual contrast between the project and the existing environment. Three levels of contrast are considered: weak, moderate, and strong. Weak suggests a minor or low visual contrast with the surrounding landscape, while strong contrasts suggest that permanent project facilities would be highly evident or dominate a setting. A number of variables affect visual contrast including the scale and size of project features, site design, duration of views (short-term v. long-term), color and texture, and influences of adjacent scenery or land uses.

Visual impacts would be significant if identified sensitive viewers (residents along Harvard Avenue and Edinger Avenue) would experience a strong contrast or there would be a strong contrast to areas/features of high scenic quality. Significant aesthetic impacts would also occur if development creates a new source of light or glare which would degrade day or nighttime views, or interfere with operations of light-sensitive uses, such as an observatory. As detailed in Section 3.5, sensitive viewers are identified as foreground residential viewers along Edinger Avenue and Harvard Avenue. The hangars are identified as being a unique feature in the community due to their prominence.

4.5.2 DON Disposal of MCAS Tustin

Impact and Mitigation

DON disposal would not directly affect visual resources. The disposal action is a transfer of title and, as such, would not result in any change to the physical environment. No significant impacts would occur and no mitigation is necessary.

4.5.3 Alternative 1

Impacts

This impact analysis provides a fairly detailed description of the change and contrast associated with various land use categories in the reuse plan area. The conclusions focus on impacts to defined sensitive viewers. The additional descriptive detail is provided in response to comments on the previous EIS/EIR.

Views From Surrounding Viewshed

The proposed mixed use development would, for the most part, represent a visual change from the existing MCAS Tustin facilities. Scattered buildings and structures that support military operations and auxiliary support functions would be replaced by higher intensity development. The airstrip and aircraft parking aprons would be replaced by urban-scale land uses, and the open agricultural fields would be supplanted by a mix of buildings, pavement, and active open space. The overall change would result in a strong visual contrast, but it would not be readily visible to sensitive viewers.

Residential, commercial residential, and recreation uses are proposed for the northern portion of MCAS Tustin. The one- and two-story buildings of the main station, with generally minimal architectural details, would be replaced or possibly reused. Replacement would involve the demolition of some or all existing buildings and the subsequent construction of new, presumably more visually interesting structures. Utilitarian looks would give way to a more comprehensive architectural theme. The contrast would be weak to moderate and there would be no impact.

The proposed Learning Village may reuse some of the existing buildings as well as construct new facilities. As such, the general viewscape in that area would remain the same or be enhanced, depending upon the amount of exterior rehabilitation. The Medium High Density residential proposed adjacent to existing northeastern military family housing area would increase the density of that area, currently in agricultural production, creating a more urban vision. This is not unlike the urban landscape that currently exists on adjacent lands; the visual contrast would be weak and there would be no impact.

The proposed Urban Regional Park could incorporate the northern blimp hangar, which is identified as a unique feature by the members of the community. The Regional Park would also maintain or even increase the openness of the area around the hangar. The difference would be that paved

(concrete and blacktop) areas and aviation-associated structures would be replaced by landscaping, and recreational facilities. Generally, views from surrounding areas only pertain to the upper portions of the hangars, so there would be minimal visible visual change and no impact. For viewers along Edinger Avenue, who are considered sensitive, the contrast would be moderate and there would be no significant impact.

The proposed Community Park would maintain the existing facilities (ballfields, basketball courts, etc.). Here the existing visual character would remain generally the same and there would be no impact.

This is also true of the Low Density residential area, which involves the reuse or redevelopment of existing dwelling units along Harvard Avenue. The military family housing is currently exhibiting some signs of age. The buildings may be rehabilitated under Alternative 1, giving the structures a "face lift" and thereby making them more visually attractive. Alternatively, new buildings may be constructed which would be in character with existing uses off-site. There would be no significant visual impact.

An elementary school and neighborhood park is proposed between Barranca Parkway and this existing housing. An open, undeveloped field would be replaced by classrooms, administration building, parking lots, and playgrounds. The visual contrast would be moderate to strong.

Along Barranca Parkway, agricultural lands, aircraft parking aprons, and open areas of short grasses would be developed with Commercial/Business uses, resulting in a visual shift from an open, low-profile viewscape to a more urban view with vertical elements. A concentration of buildings, driveways, parking lots, and landscaping would be included in the viewing experience. Primary viewers would be drivers who are not considered sensitive, therefore there would be no significant visual impact.

The central area of the site is proposed as the Community Core, which would consist of retail establishments, office buildings, residences, and supporting public services. The southern blimp hangar is located in this area, and may be reused, if economically feasible. The proposed development would change the existing viewscape of low-profile elements (helicopter landing pads and parking aprons, undeveloped open areas, and small support structures) which are punctuated by the dominating visual presence of the hangar. Proposed development would increase the number of buildings in the area and decrease the visual sense of openness. Sensitive viewers do not have clear views of the location so impacts would not be significant.

If it is not economically viable to reuse the southern blimp hangar, then this structure would be removed. Because of the size of the hangars, the removal of one would be a noticeable change and an impact to the viewscape. These hangars are the only element visible from foreground, middleground, and background viewing distances. If one of the two hangars would be retained in the Regional Park, if financially feasible, the overall contrast would be reduced to moderate and the impact would be less than significant. If it is financially infeasible to retain even the northern hangar, then both of these prominent features would be removed. This strong contrast to viewers visual viewing distances would be a significant impact.

The corner of MCAS Tustin at Edinger Avenue and Jamboree Road is currently undeveloped and covered with low grasses; part of the site has been used as a construction staging area for the ETC. Proposed Medium Density residential development would replace this open area with a more urban environment of single-family and multi-family dwellings, and associated streets, driveways, walls, and landscaping. The contrast would be moderate to strong.

With implementation of Alternative 1, a military air station with its associated aviation-related structures, and administration and personnel support facilities would be replaced by a mixed-use development that would include commercial, business, recreation, and residential land uses. Consequently, many generally older buildings of varying architectural designs would be demolished, and new buildings, presumably with a unifying architectural theme, would be constructed.

The greatest visual changes to the site in terms of areal extent would occur in the areas that are currently under agricultural production in the west and east. Low-profile, open space areas would experience urban levels of development, with its associated vertical structural elements, paved circulation systems, and landscaping. The other highly evident visual change, because of its large size and its visual prominence would be the demolition of the southern blimp hangar. If both hangars are removed, then the visual contrast would be even greater.

Foreground views into the site are limited to adjacent roadways, and businesses and homes immediately facing the site. Motorists are not considered to be sensitive viewers. This is also the case with the employees of surrounding retail establishments, offices, and industrial enterprises. Therefore, sensitive viewers would be residents along Edinger Avenue and Harvard Avenue.

Residents of these adjacent housing developments (foreground viewshed) would experience visual contrast as seen from the second stories of the homes adjacent to the site. The near-range, predominant existing views are of the existing military family housing areas, agricultural operations,

and portions of the hangars. Because the family housing may be retained and rehabilitated or reconstructed as housing, the visual contrast would be weak for this element and impacts would be less than significant. There may be some visual benefit associated with rehabilitation and possible enhanced landscaping. Additionally, existing above-ground utilities would be undergrounded reducing urban clutter and resulting in a beneficial impact.

The change in view of the hangars would be moderate to strong depending on the scenario. While the elimination of one hangar would be noticeable, the remaining hangar would continue to provide a visual landmark and impacts would be less than significant. If both hangars are eliminated, the strong visual contrast in all viewing distances would be a significant impact.

The contrast associated with development of agricultural land would be moderate to strong. In this area of the site, the agricultural land would be developed as a Golf Village, which would consist of a golf course, botel, and ancillary retail and residential uses. Between the Golf Village and housing there would be a commercial area for village services. While the change from agriculture to urban uses would be highly evident, they would be similar to other urban uses throughout the viewshed. Additionally, foreground residential viewers would have obstructed views due to intervening noise walls. The impact would be less than significant. Measures to enhance the appearance of intervening walls and overall future development would be appropriate, however, to maximize the opportunity to create a high-quality development.

Construction of the project would occur over a 20+ year period. Phasing is anticipated to proceed at described in Table 2-8 in five year increments. Generally, the vast majority of the housing, the golf course, the parks, the schools, the Learning Village and approximately one-half of the commercial uses would be constructed in the initial pbase. The next phase would include residential and commercial development in the Golf Village and more commercial/business uses would be constructed. Over the next 10+ years the remaining commercial development would occur and the Community Core would be build-out. Given this pattern of development, construction would be visible to surrounding viewers primarily in the first five years. In the latter period construction would occur inside the reuse plan area itself. Sensitive residential viewers along Edinger Avenue and Harvard Avenue would experience some impacts as construction proceeds for rehabilitation/reconstruction of housing and the Golf Village development; however, intervening walls and roadways would reduce clear views of these phased impacts. Construction impacts would not be significant.

Views From Within the Reuse Plan Area

Development of Alternative 1 would introduce a variety of new sensitive viewers into the site as new residences would be constructed in the Golf Village, and adjacent to existing housing. Several new parks would also be developed introducing sensitive viewers. As eacb component of the reuse plan is developed over 20+ years, there would be visual contrast created as previously undeveloped land converts to urban uses or existing structures are demolished. There is both the potential for visual impacts and visual benefits depending on the sensitivity of development to maintaining view corridors, providing screening, and incorporating landscaping. If one or both hangars were retained, they would be a dominant feature in the landscape. Depending on orientation of future viewers, they may reduce view corridors. There would be the potential for significant impacts if landscaping and urban design would not fully address aesthetic considerations.

Light and Glare

The proposed mixed-use development would include placement of light sources for safety, identification, and security. Proposed development would have light sources along streets, in parking lots, and near buildings. Higher-intensity development would result in increased lighting sources. This is particularly true where agricultural land with no light would be replaced by commercial, residential, and recreational development with its associated lighting. Such lighting, however, is consistent with light sources in the adjacent commercial, industrial, and residential areas. Due to the site's flat topography and immediately surrounding buildings and structures, sucb lighting would not be noticeable from other than close range viewing areas and the impact would not be significant.

Glare, a condition where light is uncomfortably harsh, could impact effective vision or even temporarily blind an individual and is therefore a safety concern. Glare could be generated from new buildings and parking areas on site that are composed of reflective materials such as glass or polished metal. Glare can be controlled through design controls and building materials restrictions as part of the standard design review and approval processes of the City of Tustin and the City of Irvine. Impacts would not be significant.

Mitigation Measures

Vis-1 In conjunction with any zoning ordinance amendments to implement the reuse plan in Tustin or Irvine, an urban design plan shall be adopted to provide for distinct and cohesive architectural and landscape design, features and treatments, as well as harmony with adjacent landscaping. The urban design plan shall have the following elements:

- landscaping concept and master signage plan;
- design review and approval process;
- limits on development intensity for each specific land use;
- limits on height of structures and lot coverage;
- minimum site building setbacks;
- minimum on-site landscaping requirements;
- buffering requirements, including berms, masonry walls, and landscaping;
- lighting regulations, including regulations ensuring that exterior lighting does not negatively impact surrounding property;
- screening regulations for mechanical equipment and outside storage; and
- site signage requirements, including sign permit approval.

The loss of both hangars would be a significant unmitigable visual impact.

4.5.4 Alternative 2

Impacts

Views From Surrounding Viewshed

Many of the proposed land uses, and therefore visual elements, in Alternative 2 would be identical to those proposed for Alternative 1. The existing military family housing would either remain and be rebabilitated or reconstructed. The undeveloped parcel east of the intersection of Edinger Avenue and Jamboree Road would be developed with residential units. Retail and office land uses would be constructed replacing both existing air support facilities as well as agricultural fields. A golf course, hotel, commercial, and residential units are proposed in the eastern portion of the site where currently the land is farmed. Development of these areas would result in a viewscape similar to that described for Alternative 1. Visual contrast would range from weak to strong. Only where sensitive

residential viewers would experience a strong contrast would there be a significant impact. Detailed analysis of visual impacts to sensitive viewers is provided in the following text.

There are similarities between Alternative 1 and Alternative 2 in the northern area of MCAS Tustin as well. Parks are proposed in the area where existing recreational facilities now exist. The viewscape in those areas would remain the same. A Village Mixed-Use area consisting of public institutional, commercial business, and residential uses is proposed along Red Hill Avenue. The majority of existing military structures in this area have been identified for rehabilitation and reuse; therefore, the viewscape would remain similar to what currently exists. Aesthetics may even be enhanced by structural rehabilitation and additional landscaping.

Under this alternative, the southern blimp hangar would be demolished and the surrounding area would be developed as a residential and commercial business area. The visual dynamics would change from a single, large structure surrounded by pavement, open areas, and small auxiliary buildings to a concentration of smaller, much less massive buildings complimented by landscaping. The removal of the southern blimp hangar would result in a visual contrast because of the large size of the feature.

A Cultural Center may encompass the northern hangar, which could be reused to provide a venue for sporting events, concerts, conventions, etc. If the hangar is retained, the view horizon would remain the same for middle ground and background viewers, because the hangars are generally the only structures on MCAS Tustin that can be seen from a distance. Additionally, this one hangar would continue to serve as a landmark. Therefore, the loss of one hangar would be a less than significant impact.

If the northern hangar is not retained, then both of these prominent features would be removed, which would be a strong contrast to viewers in all viewing distances. The visual impact would be significant.

As with Alternative 1, construction would occur over a 20+ year period with the initial phases closest to existing roadways and future phases internal to the site. Construction closest to sensitive residential viewers along Edinger Avenue and Harvard Avenue may provide views of various earthwork equipment, grading operations, building crew etc. These views would not be clear views due to intervening walls and roadways. Construction impacts would not be significant.

Sensitive viewers would be the same for this alternative because they are derived from existing land uses. In the residential areas along Edinger Avenue and Harvard Avenue the view change would be almost identical to Alternative 1. Where existing family housing would be reused or reconstructed the visual contrast would be weak. There may be beneficial impacts due to rehabilitation of existing structures, and the elimination of aboveground utilities which can be perceived as urban clutter. The open, cultivated fields would be developed with commercial uses, a golf course, and low density residential uses. At the corner of Jamboree Road and Edinger Avenue there would be a hotel and ancillary commercial uses. At the corner of Edinger Avenue and Harvard Avenue, undeveloped land would be replaced by residential uses and visible to sensitive residential viewers. While the overall contrast would be moderate to strong, these foreground viewers are partially obstructed by noise walls and proposed development would be similar in character to other development in the viewshed. Visual impacts would be less than significant. However, measures to enhance the appearance of intervening walls and overall future development would be appropriate to maximize the opportunity to create a high-quality development.

Views From Within the Reuse Plan Area

Development of Alternative 2 would introduce a variety of new residential viewers and outdoor recreationalists, both of which are defined as sensitive. As the reuse plan is developed over the next 20+ years there would be a potential for visual impacts and visual benefits to these viewers depending on how view corridors are provided and function, if landscaping is provided, and if visual screening is adopted. Since construction would occur inside the reuse plan area, the last ten years of development construction would be visible to new sensitive viewers. The removal of one hangar may provide for longer view corridors across the site. There is the potential for significant impacts if landscaping and urban design do not fully address aesthetic considerations.

Light and Glare

The development of new urban, land uses in replace of relatively undeveloped agricultural fields would introduce new light sources, but these would be consistent with existing surrounding land uses and lighting. There would be no significant impact. There is the potential for glare from buildings composed of reflective materials. This could be controlled through design and building material restrictions as part of the standard design review and approval processes of the City of Tustin and City of Irvine. Impacts would not be significant.

Mitigation Measures

As under Alternative 1, an urban design plan shall be adopted in conjunction with any zoning ordinance amendments to implement this alternative in Tustin or Irvine.

The loss of both hangars would be a significant unmitigable visual impact.

4.5.5 Alternative 3

Impacts

Views From Surrounding Areas

From the perspective of visual change to the existing environment, proposed land use patterns associated with Alternative 3 would be similar to those of Alternative 1. The military family housing may be reused or reconstructed, as would the recreational facilities. Commercial business would be developed in the west, and a golf course development with associated hotel, retail, and residential uses would be constructed in the east. However, the currently undeveloped land at the corner of Edinger Avenue and Harvard Avenue would be developed with commercial uses instead of residential. This view change would be visible to adjacent residents.

For identified sensitive viewers along Edinger Avenue and Harvard Avenue, the visual change would be similar to Alternatives 1 and 2, except they would view more commercial development and less residential uses. Under this alternative, the undeveloped area along Edinger Avenue between Jamboree Road and Harvard Avenue, would be developed with commercial business uses instead of residential uses. There would be a moderate contrast. There would be no visual impact associated with reuse or reconstruction of existing military family housing. The change in views of the hangars would be less than significant if only the southern hangar is removed, because the northern hangar would remain prominent. However, the removal of both hangars would result in a significant visual impact. Visual impacts associated with golf course, commercial, hotel, and residential housing that would be constructed in the current agricultural fields and undeveloped parcel at Edinger Avenue and Harvard Avenue would result in moderate to strong contrast. There would be a beneficial impact from undergrounding utilities. The overall impact to residential viewers would be less than significant because the intervening walls would reduce clear views and surrounding community character would be similar to that proposed. However, it would be appropriate to adopt a planning

process whereby landscaping along intervening walls would be initiated and other measures would be required to maximize the opportunity to create a bigh quality development.

As with the other two alternatives, construction nearest to sensitive residential viewers would occur primarily in the initial phase. While development may afford views of construction equipment, the views would be intermittent due to intervening walls and roadways and construction impacts would not be significant.

Views From Within the Reuse Plan Area

Development of Alternative 3 would introduce a variety of new residential viewers and outdoor recreationalists, both of which are defined as sensitive. As the reuse plan is developed over the next 20+ years there would be a potential for visual impacts and visual benefits to these viewers depending on how view corridors are provided and function, if landscaping is provided, and if visual screening is adopted. The removal of one hangar may provide for longer view corridors across the site. There is the potential for significant impacts if landscaping and urban design do not fully address aesthetic considerations.

Light and Glare

The potential for generation of light and glare would be similar to that described for Alternatives 1 and 2; there would be no significant impact.

Mitigation Measures

As under Alternative 1, an urban design plan shall be adopted in conjunction with any zoning ordinance amendments to implement this alternative in Tustin or Irvine.

The loss of both hangars would be a significant unmitigable visual impact.

4.5.6 No Action Alternative

Impacts

The No Action Alternative would be a continuation of the caretaker status of the MCAS Tustin property. No existing buildings would be rehabilitated or demolished, and no new buildings would

be constructed. The only activity on the site would be from maintenance personnel and security staff, and possibly seasonal workers in the leased agricultural areas. Both hangars would remain and the general physical character of the property would remain the same; however, reduced staffing and inactivity would effect the character of the site. Once busy neighborhoods and buildings would be under-utilized. There is also the potential for reduced maintenance to effect the visual quality of the site. This contrast would be weak and impacts would be less than significant. Finally, the aboveground utilities would remain and a beneficial impact due to reducing urban clutter would not be realized.

Mitigation Measures

There would be no significant visual changes to the site as a result of the No Action Alternative; therefore, no significant visual impacts would occur and no mitigation measures are necessary.

4.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

4.6.1 Significance Criteria

Cultural Resources

Under NEPA (42 U.S.C. § 4332), Section 106 of the National Historic Preservation Act (Section 106, 16 U.S.C. 470 et seq.), and Protection of Historic Properties (36 C.F.R. § 800) an action would be considered to have a significant impact if it would adversely affect an historic or archaeological property listed in, or determined eligible for inclusion in, the NRHP. Under CEQA, an impact would be significant if it results in damage to an historical or archaeological site that meets the criteria of importance in the CEQA guidelines. Properties eligible for the NRHP are, by statute, eligible for the California Register of Historic Resources and are therefore considered important under CEQA.

Under NEPA (40 C.F.R. 1508.27), the determination of the significance of an action depends upon its context and intensity. Context can be broad or it can be focused. Intensity refers to the severity of the impact. Of the ten NEPA guidelines for evaluating intensity, the following is particularly applicable to cultural resources:

> The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

In order for a resource to be found significant under 36 C.F.R. 60, it must have elements that:

- are associated with events that have made a significant contribution to the broad patterns of our history; or
- are associated with the lives of persons significant in our past; or
- embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- have yielded, or may be likely to yield, information important in prehistory or history.

Under 36 C.F.R. § 800.9 an undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to the features of a property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered. 36 C.F.R. § 800.9(b) provides the following definition of adverse effect:

> An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Intensity is another key factor. Adverse effects on historic properties include, but are not limited to:
>
> - physical destruction, damage, or alteration of all or part of the property;
> - isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;
> - introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
> - neglect of the property resulting in its deterioration or destruction; and
> - transfer, lease, or sale of the property.

Several factors are taken into consideration when determining the significance of a site and impact. Integrity and intensity are two of those key factors. Without integrity a site is generally not considered significant and therefore the impact would be less than significant. Similarly, a low-intensity impact may not be significant.

Paleontological Resources

Fossils are the remains of prehistoric life and are nonrenewable. Per CEQA, any impacts to a unique paleontological resource or site would be significant.

4.6.2 DON Disposal of MCAS Tustin

Impacts

DON is responsible for compliance with Section 106 of the NHPA. Disposal of MCAS Tustin would result in the transfer of the Historic District from federal ownership. Such a transfer would

be considered an adverse effect under 36 C.F.R. § 800.9(b); it would lessen the protection offered to the historic property under the NHPA. Since the reduced level of protection could potentially result in the loss or destruction of significant historical resources, it would be a significant impact under NEPA that cannot be fully mitigated.

The transfer of title would not directly impact cultural or paleontological resources and there would be no impact.

Mitigation Measnres

DON is responsible for compliance with Section 106 of the NHPA. Under Section 106, if an adverse effect will occur, the agency generally consults with the SHPO, the Advisory Council on Historic Preservation (ACHP), and others in an effort to find ways to make the undertaking less harmful. Consultation is designed to result in a Memorandum of Agreement (MOA), which would outline measures to reduce, avoid, or mitigate the adverse effect.

Such consultation was conducted resulting in a MOA for MCAS Tustin (Appendix H). The MOA addresses measures to mitigate the effects of destruction of portions of the eligible National Register District. Mitigation measures addressed by this MOA would be considered as a condition of any proposed transfer of property. ~~The MOA will be available prior to public distribution of the Final EIS/EIR.~~ Available mitigation measures, short of preservation, may not be considered sufficient to reduce impacts below the threshold of significance; thus, even with the MOA, impacts could still be considered significant.

As indicated in the MOA, DON shall ensure that the following mitigation measures will be carried out:

Hist-1 Historic American Building Survey (HABS) - DON will complete the appropriate recordation for hangars 28 and 29 and the discontiguous historic district prior to conveyance of any property within the discontiguous historic district and shall ensure that copies of the recordation are made available to SHPO, the City of Tustin, and any local or other archive facilities designated by SHPO.

Hist-2 Curation - within 30 days of the execution of the MOA, DON will donate copies of plans and architectural drawings and other archival materials and records, as available, concerning the layout and the buildings and structures that made up the original Navy lighter-than-air blimp

facility to a local curation facility. The City of Tustin or its designee will also be provided with copies of these materials.

No mitigation would be necessary for paleontological resources.

4.6.3 Alternative 1

Impacts

Cultural Resources

Archaeological Resources

Implementation of Alternative 1 would result in impacts to a recorded archaeological resource. Impacts to archaeological sites are considered significant only if the sites themselves are deemed significant. SHPO has concurred with the assessment that the Air Station has been adequately surveyed, resulting in the recordation of one site (CA-ORA-381). This site is not considered significant due to its lack of integrity. Therefore, Alternative 1 would not have an adverse affect on the known archaeological resource.

Since it is unclear whether the 4-acre parcel that lies outside the MCAS Tustin boundary has been surveyed for archaeological resources, it is possible that significant resources exist here. If such resources do exist, impacts under this alternative could be significant.

It is possible that buried archaeological resources may exist in the reuse plan area (as indicated by the presence of shell scatters) and that these resources could be potentially impacted by grading activities. In the event that previously unidentified cultural material is encountered during demolition or other ground disturbing activities, and destroyed prior to evaluation to determine significance, there could be significant impact to archaeological resources.

Historical Resources

Alternative 1 would result in irreversibly eliminating most of the two discontiguous eligible historic districts, resulting in significant impacts to the eligible districts.

Both blimp hangars would be preserved if financially feasible for adaptive reuse. The southern blimp bangar would be within the Community Core whicb would be designed for commercial, residential, and institutional uses. If the hangar was retained, it would be used as a warehouse, film production facility, or it would be put to other yet unspecified uses. It is also possible that this hangar would be destroyed under one possible alignment of Warner Avenue. The northern blimp hangar would be within the Urban Regional Park. If financially feasible, it would be preserved for adaptive reuse for special recreational functions, including a special events center, a sports center, a museum, restaurant space, picnic areas, a video arcade, or for historic collections.

If the bangars are retained under Alternative 1, some work would need to be done to them to bring them up to the Secretary of Interior standards and State Historic Building Codes for reuse. Despite maintenance efforts, several elements of the structures are deteriorating with age. This generates potential adverse impacts. It is possible that it would not be financially feasible to retain either of the hangars under this alternative. If this is the case, there would be irreversible significant impacts to the hangars.

Paleontological Resources

Direct impacts to paleontological resources may occur if earthwork activities, such as mass grading operations, cut into and destroy the geological deposits (formations) within which unique paleontological resources or sites are buried. During construction of Alternative 1 there is a high to moderate potential for grading activities to impact fossil resources, which would be a significant impact.

In anticipation of possible impacts to resources, a *Paleontological Resources Management Plan* (PRMP) has been prepared (City of Tustin 1993q) which applies to any type of grading/development activity on the site. The PRMP details the methodologies to be used for paleontological resource surveillance during grading and the actions to be taken if fossils are exposed.

Mitigation Measures

Arch-1 Prior to issuance of grading permits, the four-acre parcel currently outside the boundaries of the Air Station along Harvard Avenue shall be surveyed to determine the presence/absence of archaeological resources prior to grading.

Arch-2 Prior to issuance of grading permits, the cities of Tustin and Irvine shall each require applicants of individual development projects to retain, as appropriate, a county-certified archaeologist. If buried resources are found during grading within the reuse plan area, a qualified archaeologist would need to assess the site significance and perform the appropriate mitigation. The Native American view point shall be considered during this process. This could include testing or data recovery. Native American consultation shall also be initiated during this process.

Hist-3 ~~As described in 4.6.3, consultation is on-going to draft an MOA. The MOA would be available prior to public distribution of the Final EIS/EIR. The MOA would explicitly address mitigation measures for each blimp hangar, as well as the eligible discontiguous historic districts.~~ As specified in the MOA, a substantive effort will be made to determine whether there is an economically viable adaptive use of Hangar 28 and Hangar 29.

Hist-4 If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant. In the case of the Hangar 28 complex, these measures shall balance the needs of the adaptive use and the needs for effective operation of the Federal Lands to Parks or Historic Monument programs.

Hist-5 If NPS and/or SHPO determine that, despite a marketing effort that complies with the terms of the MOA or as agreed to by the City of Tustin/County of Orange, NPS, and/or SHPO, an economically viable adaptive use of the Hangar 28 complex was not identified, NPS and/or SHPO shall promptly advise DON and notify the City of Tustin/County of Orange that the following measures are required.

a. Written History - The City of Tustin/County of Orange shall prepare an illustrated history report on MCAS TUSTIN, with emphasis on the initial construction of the Air Station and its World War II Navy lighter-than-air operations.

b. Exhibit - The City of Tustin/County of Orange shall prepare a professional-quality illustrated interpretive exhibit with emphasis on the initial construction of the air station and its World War II Navy lighter-than-air operations.

c. Interpretive Video - The City of Tustin/County of Orange shall prepare a professional-quality documentary video and shall undertake a one-time distribution and outreach program for the documentary video.

Paleo-1 The cities of Tustin and Irvine shall each require applicants of individual development projects to comply with the requirements established in a PRMP prepared for the site, which details the methods to be used for surveillance of construction grading, assessing finds, and actions to be taken in the event that unique paleontological resources are discovered during construction.

Paleo-2 Prior to the issuance of a grading permit, project applicants shall provide written evidence to each city, that a county-certified paleontologist bas been retained to conduct salvage excavation of unique paleontological resources if they are found.

4.6.4 Alternative 2

Impacts

Cultural Resources

Alternative 2 would impact a previously recorded archaeological site which is not considered significant due to its lack of integrity. Therefore, Alternative 2 would not have an adverse affect on the known archaeological resource.

Since it is unclear whether the four-acre parcel that lies outside the MCAS Tustin boundary has been surveyed for archaeological resources, it is possible that significant resources exist there. If such resources do exist, impacts under this alternative could be significant.

It is also possible that buried archaeological resources may exist elsewhere in the reuse plan area (as indicated by the presence of shell scatters) and that these be impacted by grading activities. In the event that previously unidentified cultural material is encountered during demolition or other ground disturbing activities, and destroyed prior to evaluation to determine significance, there could be significant impacts to archaeological resources.

Alternative 2 would result in irreversibly eliminating most of the two eligible discontiguous historic districts, resulting in significant impacts to the districts.

Under Alternative 2, only the northern hangar would be reused if financially feasible. If retained, it would be incorporated into a large cultural center and used as a museum, special events center, or other permitted use. The southern hangar would be demolished. Impacts to the northern hangar would be the same as those described in Alternative 1. Impacts to the southern hangar would be significant and irreversible.

Paleontological Resources

Mass grading for Alternative 2 would be similar to Alternative 1 and there would be the same potential for impacts to buried fossil resources. This is a significant impact requiring mitigation.

Mitigation Measures

Mitigation measures Arcb-1, Arch-2, Hist-1, Paleo-1 and Paleo-2 would be applicable to this alternative as well. The known loss of the southern blimp hangar would be significant and irreversible and is a more significant impact than under Alternative 1.

4.6.5 Alternative 3

Impacts

Cultural Resources

As with Alternatives 1 and 2, Alternative 3 has the potential to impact a recorded archaeological site. Because this site is not considered significant there would be no significant affects on the known archaeological resources.

It is also possible that buried archaeological resources may exist on the property and that these may be impacted by grading activities. In the event that previously unidentified cultural material is encountered during demolition or other ground disturbing activities, and destroyed prior to evaluation to determine significance, there may be significant impacts to archaeological resources.

Alternative 3 would result in irreversibly eliminating most of the two discontiguous historic districts, resulting in significant impacts to the districts.

Under Alternative 3, only the northern bangar would be reused if financially feasible. If retained, it would undergo adaptive reuse for special recreational functions including a special events center, a sports center, a museum, restaurant space, picnic areas, a video arcade, or for historic collections. The southern hangar would be demolished. Impacts to the northern hangar would be the same as those described in Alternative 1. Impacts to the southern hangar would be significant and irreversible.

Paleontological Resources

Mass grading for Alternative 3 would be similar to Alternatives 1 or 2 and there would be the same potential for significant impacts to buried fossil resources.

Mitigation Measures

Mitigation measures for archaeological and historical resources would be the same as identified for Alternative 2.

4.6.6 No Action Alternative

Impacts

Archaeological and Paleontological Resources

Under the No Action Alternative there would be no impacts to recorded or potential undiscovered resources, because there would be no disturbance or modification to the ground surface or subsurface.

Historical Resources

The No Action Alternative would be a continuation of the caretaker status of the MCAS Tustin property. The hangars and historic districts would be retained. While the impacts to the historic districts would be lessened under this alternative, the potential for further deterioration through aging would persist.

Mitigation Measures

No mitigation measures would be necessary for archaeological or paleontological resources as there would be no impacts; however, some mitigation is still appropriate to address deterioration through aging.

Hist-2 To ensure the long-term preservation of the blimp hangars and contributing elements of the historic districts, a historic properties maintenance plan may need to be prepared. Given the current condition of the historic districts, additional caretaker activities may need to be undertaken, including providing a higher level of maintenance for the historic district properties.

4.7 BIOLOGICAL RESOURCES

4.7.1 Significance Criteria

Under NEPA, an impact to the biota of the reuse plan area would be significant if it involved: (1) the loss of federally listed plant or animal species, (2) degradation of the habitat supporting those species such that it was no longer usable by that species, and/or (3) damage to wetland habitat. The Federal Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.), regulates impacts to biota, and the Clean Water Act (Section 404, Environmental Protection Agency's 404(b)(1) Guidelines of 1980 (40 C.F.R. Part 230)) regulates impacts to jurisdictional waters of the U.S. and wetlands.

Under CEQA, an impact to the biota would be considered significant if it involved: (1) adverse effect to any plant or animal species that is state listed or identified as a candidate or special status species by the CDFG such that the population would fall below self-sustaining levels; (2) degradation of sensitive natural communities as identified by CDFG and other local plans; (3) substantial interference with the movement of any native resident or migratory species, or the use of native wildlife nursery sites; or (4) a substantial adverse effect on wetlands habitat as defined under the Clean Water Act. The California Endangered Species Act (CESA) of 1970 (California Fish and Game Code 2050-2116) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. § 703 et seq.) regulate impacts to biota. Federal agencies are not subject to these laws.

4.7.2 DON Disposal of MCAS Tustin

Impacts and Mitigation

DON disposal of MCAS Tustin out of federal ownership would not result in any direct impacts to biological resources. Disposal involves a transfer of title and would not involve any physical changes to the Air Station. No mitigation would be required.

4.7.3 Alternative 1

Impacts

Impacts to biota would occur at the construction phase for implementing the reuse development.

Vegetation/Wetland Habitat

The vegetation on site is generally of low quality and has been degraded by past land use activities. Impacts of replacing existing agricultural fields, non-native grasslands and ornamental landscaping with reuse development would not be considered significant.

Impacts to wetlands are addressed in terms of direct impacts to drainages as part of the reuse action and indirect impacts associated with separate flood control improvements to be undertaken by OCFCD. As described in Section 4.3 (Utilities) the OCFCD is in the process of designing improvements to Peters Canyon Channel which is proposed to be re-constructed as a soft-bottom channel. This project is independent of civilian reuse. The re-construction would pertain to Peters Canyon Channel from San Diego Creek Channel to ~~SR-55~~ I-5, only a small portion of which is within the reuse plan area boundaries. The design would accommodate channel improvements associated with the ETC and drainage from Alternative 1, as well as many other locations which drain into the channel. Channel improvements would be accomplished by the OCFCD and are not a direct project impact, however, the reuse plan would transfer this channel into OCFCD ownership and would indirectly facilitate the improvement. It is unknown at this time how the channel would be designed and if it is possible to avoid wetlands. However, it is appropriate to make the conservative determination that Alternative 1 would have a significant, indirect impact to approximately ~~16.5~~ 12.8 acres of jurisdictional ~~wetlands~~ waters.

Other natural bottom channels and seasonal ponds within the reuse plan area may be directly impacted by development of Alternative 1. Exclusive of Peters Canyon Channel, jurisdictional waters are estimated at 16.2 acres, within which ~~3.5~~ 2.4 acres are classified as existing vegetated wetlands ~~and 0.15 acres are considered seasonal. For~~. While it is possible that during site-specific design an individual wetland may be avoided, it would be inappropriate to base the wetland impact conclusion on such an uncertain outcome. Therefore, for purposes of this reuse EIS/EIR, the impact assessment assumes complete destruction of all wetlands and jurisdictional waters, which is the most conservative approach.

USACOE administers Section 404 of the Clean Water Act, which requires permitting for discharge of dredged or fill material into "waters of the United States." Development in the wetlands areas would require Section 404 permit(s). Individual permits are usually needed for placement of fill into wetlands or waters of the United States where more than three acres is affected. Beginning September 1999, these permits would be required for activities where two or more acres are affected. Also, any project that would cause loss of waters of the United States for a distance of more than 500

linear feet of stream bed would be required to obtain an individual permit. The USACOE permit process requires a detailed alternatives evaluation process with the preferred goal of avoidance of wetlands. While it may be possible to avoid wetlands on-site, it is most appropriate to assume the reasonably foreseeable impact at this stage and allow for detailed site planning concurrent with permit processing to evaluate alternative methods to avoid or reduce impacts.

The permitting process serves to define conditions for achieving "no net loss" of wetland values, as directed by current federal and state policies. Wetlands restoration, revegetation, or replacement, would be used to meet the "no net loss" directive. The permits define the ratio at which affected wetland area would be replaced, restored, or revegetated, either in a suitable area on-site or off-site. The permits also define a detailed implementation program for such actions; monitoring and reporting procedures to ensure that habitat established would be viable and similar to habitat lost, and other conditions.

CDFG administers Section 1601 of the California Fish and Game Code, which requires CDFG notification for projects that would alter a streambed. Alteration of the wetlands, including flood control improvements, would require these permits.

Sensitive, Threatened or Endangered Wildlife Species

There would be no impacts to federally listed threatened or endangered plant or animal species. No Section 7 consultation would be required.

Urban development and flood control improvements filling of wetlands habitat in and around the San Joaquin Channel would significantly affect the southwestern pond turtles at this location which requires mitigation. No turtle nesting activity would be affected, as the reuse plan area does not provide suitable nesting habitat. Because the southwestern pond turtle is a "species of special concern" under CDFG, but not listed as threatened or endangered by the USFWS, this is regarded as a significant impact under CEQA.

Development under Alternative 1 would replace the loggerhead shrike habitat with urban uses. Although four birds, possibly two nesting pairs, may be displaced or eliminated from the site, current populations in southern California are relatively stable and the impact would not cause this species to fall below self-sustaining levels. Furthermore, the shrikes could remain as nesting birds on, or adjacent to, the proposed golf course. While proposed reuse would result in direct loss of these

individual birds, there would be no overall adverse effect to the population in Southern California. Therefore, the impact would be less than significant.

Mitigation Measures

Mitigation would be required for significant CEQA impacts to the southwestern pond turtle and significant direct and indirect NEPA/CEQA impacts to wetlands. Implementation of the mitigation measures Bio-1 through Bio-4 would reduce impacts to below significance.

Creating an on-site mitigation area for the turtle would not be a viable mitigation because it would be isolated from other southwestern pond turtle populations and subject to the variety of disturbances that have lead to the demise of the species. More suitable mitigation is identified in Bio-2, Bio-3 and Bio-4.

Bio-1 The project proponents of any development affecting jurisdictional waters of the U.S. or vegetated wetlands shall obtain Section 404, Section 1601, and other permits as necessary. A replacement ratio for affected wetland resources shall be determined in consultation with regulatory agencies as part of the permitting process. The actions proposed on Peters Canyon Channel shall be mitigated by the OCFCD who is the project proponent for flood control improvements.

Bio-2 Based on consultations with CDFG, City of Tustin, or project proponent as applicable, an off-site relocation site for southwestern pond turtles captured on site shall be identified that is as close to the reuse plan area as possible, and that is sustainable in perpetuity. (No appropriate habitat in the City of Tustin is available for relocation.) Potential relocation sites include but are not limited to an old pond (currently thought dry) located in upper Shady Canyon within the Orange County Nature Preserve that could be improved or restored to serve as a relocation site; or San Joaquin Marsh, which is managed by UC Irvine, Irvine Ranch, and the Orange County Water District. Some property owners and public agencies may be adverse to the relocation of species of special concern onto their property or jurisdiction, and it would be speculative to identify actual sites prior to completion of consultation with CDFG and with potential property owners and/or appropriate public agencies.

Bio-3 Permits from the CDFG shall be obtained for live-capture of the turtles and for transporting them to the relocation site.

Bio-4 An agreement shall be negotiated with the CDFG, City of Tustin, project proponent, or other agency or organization as appropriate, for contribution of funds to improve, restore, or create the relocation site as turtle habitat.

4.7.4 Alternative 2

Impacts

Under the reasonable foreseeable impact scenario, construction and implementation of this alternative would destroy existing habitat. The only sensitive habitat is wetlands. Approximately ~~16.5~~ 12.8 acres of jurisdictional waters occur within Peters Canyon Channel. Implementation of Alternative 2 would result in indirect impacts to the channel because it would facilitate channel improvements planned by OCFCD. An additional 16.2 acres of jurisdictional waters within which there are 2.4 acres classified as wetlands elsewhere in the reuse plan area may be directly impacted~~, of which 3.65 acres are classified as either seasonal wetlands or vegetated wetlands~~.

There would be no impacts to the federally listed species and no Section 7 consultation would be necessary.

Development in the wetland areas would require permits from USACOE. The permitting process requires a detailed alternatives evaluation process with the preferred goal of avoidance of wetlands. While it may be possible to avoid wetlands on site, it is most appropriate to assume the reasonable foreseeable scenario impact at this stage. Alterations to the wetlands, including flood control improvements, would also require CDFG Section 1601 permits.

At least four loggerhead shrikes would be impacted, but this impact would not be significant because this species is common to abundant in California. They are tolerant of human proximity and could return to the reuse plan area after development.

There would be significant CEQA impacts to the southwestern pond turtle as urban development would destroy their foraging habitat and shelter. There is no suitable nesting habitat on site, so there would be no impacts to nesting activities.

Mitigation Measures

The impacts associated with Alternative 2 would be identical to Alternative 1, therefore identical mitigation for the southwestern pond turtle and jurisdictional waters/wetlands would be required. Those measures would reduce significant impacts on biological resources to below significant.

4.7.5 Alternative 3

Impacts

Under the reasonable foreseeable impact scenario, construction and implementation of Alternative 3 would destroy the habitat of the southwestern pond turtle, which would be a significant direct CEQA impact. Reuse would also directly impact approximately 16.2 acres of jurisdictional waters, of which ~~3.65~~ 2.4 acres are classified as ~~vegetated or seasonal~~ wetlands. OCFCD flood control improvements in Peters Canyon Channel would indirectly impact ~~16.5~~ 12.8 acres of jurisdictional waters. Other impacts to vegetation and animal species, would be similar to Alternatives 1 and 2 and are not regarded as significant.

Mitigation Measures

Measures identified to mitigate impacts to the southwestern pond turtle and wetlands are the same as those identified for Alternative 1, and would reduce significant impacts on biological resources to a less than significant level.

4.7.6 No Action Alternative

Impacts

The No Action Alternative would be a continuation of the caretaker status of the MCAS Tustin property. No new development nor alterations to the existing facilities or infrastructure would occur. No changes to the southwestern pond turtle habitat would occur under federal sponsorship. Proposed improvements to Peters Canyon Channel are separate from the proposed action and could occur if the OCFCD pursued the project independently. At that time they would be responsible for performing CEQA compliance and obtaining all necessary regulatory permits. As a result, the No Action Alternative would not result in any direct impacts to biological resources.

Mitigation Measures

No mitigation measures would be required by the DON, as there would be no direct significant impacts to biological resources. However, the OCFCD would be responsible for implementing appropriate mitigation for wetland impacts in Peters Canyon Channel (404 permit and 1601 agreement).

4.8 AGRICULTURAL RESOURCES

This section discusses potential effects from disposal and reuse of MCAS Tustin on agricultural resources.

4.8.1 Significance Criteria

Agricultural resources impacts are considered significant if Air Station disposal or subsequent reuse would result in the conversion of any Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Farmland) to non-agricultural use.

4.8.2 DON Disposal of MCAS Tustin

Impacts

DON disposal of MCAS Tustin, which involves a transfer of title, in and of itself, would not have an adverse effect on the 702 acres of Farmland (682 acres of Prime Farmland and 20 acres of Farmland of Statewide Importance) within the Air Station. Disposal would not directly convert the Farmland to non-agricultural uses; however, the existing agricultural leases would be terminated upon disposal. Because the disposal action would not preclude agricultural use, the impact would not be significant.

Mitigation Measures

Disposal of MCAS Tustin would not affect Farmland and no mitigation measures would be required.

4.8.3 Alternative 1

Impacts

In the interim, agricultural uses would be allowed to continue, consistent with the Reuse Plan. The seasonal employment generated by the farming operations would continue during the interim in accordance with the Reuse Plan. As discussed in Chapter 2, the site would be developed over a 20+ year time frame. The existing Farmland is located on areas proposed for residential, recreation, and commercial uses which is mostly projected for development by 2005. Therefore, most of the seasonal employment associated with the farming operations would no longer be available after 2005.

Ultimately, the construction and implementation reuse development under the LRA Reuse Plan would result in a significant adverse effect of converting prime agricultural land to urban uses. Approximately 682 acres of Prime Farmland and 20 acres of Farmland of Statewide Importance would ultimately be developed with residential, commercial, recreation, institutional, and other urban uses. Once urban uses have been developed consistent with the Reuse Plan, the underlying 702 acres of prime agricultural soils would no longer be available for agricultural use and a irreplaceable resource would be lost.

Pursuant to the FPPA, the NRCS and DON have determined that the MCAS Tustin site has a rating of 131. This rating is less than the score of 160 necessary for a site to be given further federal consideration for protection under this act.

Mitigation Measures

Other than avoidance, the only way to reduce the significant effect on agricultural resources to a less than significant level would be replacement of the lost Farmland elsewhere in the county. Alternatively, to partially offset the significant effect of this loss would require the protection of existing Farmland in the county from conversion to urban uses. These two measures; replace or protect Farmland, have been considered and found to be infeasible as discussed below.

Purchase of Off-site Farmland Agricultural Land

The City of Tustin as the LRA could be required to purchase 702 acres of Farmland within the County of Orange. The price of the existing prime agricultural land in the central portion of the county (the majority of which is currently held for future urban development) ranges from approximately $300,000 to $600,000 per acre, depending on location, existing land use entitlements, constraints, and other similar factors (County of Orange 1999a).

The purchase of 702 acres of Farmland would cost between $210.6 million and $421.2 million. The acquisition cost renders this mitigation measure fiscally infeasible due to fiscal constraints of the City of Tustin (as the LRA). This cost is ten to twenty times greater than the City's entire annual general fund budget. In addition, purchase of agricultural land could not supersede other general fund expenditures, such as fire and police protection (City of Tustin 1999b). For these reasons, this mitigation measure is considered infeasible.

Purchase and Improvement of Non-agricultural Farmland

This would require finding 702 acres of a developed or unimproved land underlain by Farmland; removing any existing development from this land, converting this land to agricultural uses, and selling or leasing the land to a farmer willing to make improvements to the underlaying land (irrigation systems, fencing, water supply, and other). The costs of doing so would exceed costs of buying agricultural Farmland and would render this measure fiscally infeasible, as discussed above.

Protect Existing Farmland

To partially compensate for the loss of Farmland within the reuse plan area, approximately 702 acres of existing Farmland elsewhere in Orange County would require protection from conversion to urban uses. This could be achieved through placing agricultural conservation easements on existing Farmland in the County, establishing a transfer of development rights programs, or enacting right-to-farm ordinances on approximately 702 acres of existing Farmland that has been identified as threatened by future development within Orange County. Also; an enrollment of existing Farmland under a Williamson Act contract would provide short-term protection over the life of the contract.

Agricultural Easements: To place agricultural easements on existing Farmland would require the City of Tustin as the LRA to purchase deed restrictions on 702 acres of Farmland that precludes non-agricultural uses on this land. To locate willing sellers of development rights may be difficult in areas with escalating land values, particularly in the surrounding areas of Tustin, Irvine, and Santa Ana. The cost of purchasing development rights and establishing an agricultural easement is generally equal to the difference between the market value of the property and the property value when restricted to agricultural use. In Orange County, this cost would be considerable, as the unrestricted market value of land is significantly higher than that of the land restricted to agriculture (County of Orange 1999). Even if this cost were only half of the cost associated with purchasing the Farmland outright, i.e. $105 million to $210 million, this measure would be rendered fiscally infeasible, as discussed above. In addition, this measure would involve ongoing long-term monitoring costs to ensure that future landowners abide by deed restrictions to use the land for agriculture only. Aside from fiscal considerations, the easements should be purchased in the context of a County-wide strategic plan of Farmland protection for this measure to be effective. No such plan currently exists, nor is one being advocated (County of Orange 1999a).

Transfer of Development Rights: Another method of protecting existing Farmland involves the establishment of a transfer of development rights (TDR) program to transfer development rights from lands that should remain in agricultural use to areas where increases in development intensity are encouraged. Under a TDR, landowners wishing to develop at higher densities in the development areas can purchase development rights from landowners in the agricultural areas. To encourage participation in the program, developers are offered a density bonus if they purchase development rights. The bonus allows for development at greater density than is provided for in zoning regulations. The costs associated with this measure are only those for administering the program. For this program to be effective it needs to be established on a county-wide basis. The City of Tustin as the LRA does not have the power to establish such a program outside its jurisdiction. No county planning process to establish such a program is either in place or contemplated (Orange County 1999a). Since there is no assurance that such a program would be established and be successful, this measure is not considered a viable mitigation. In addition, protection of Farmland off site would not increase the amount of Farmland in the County and would not directly offset the effects of MCAS Tustin reuse development.

Right-to-farm Ordinances: Enacting right-to-farm ordinances is a method of protecting agricultural operations near developing urban areas. Right-to-farm ordinances make it more difficult for homeowners to claim that their property rights are being affected by nearby farming operations if those operations existed when the property was purchased. Costs associated with this measure are those associated with administering the adopted local ordinances, and are relatively low. To effectively protect the remaining farming areas from development pressure, such ordinances would need to be implemented on a county-wide basis. Neither the county nor the cities of Tustin or Irvine have elected to adopt right-to-farm ordinances. In addition, the General Plans of these cities do not provide for agricultural uses in the long term. Such uses are allowed only in the interim. Since this measure cannot be ensured, it is not considered viable mitigation.

Williamson Act: To enroll additional agricultural land elsewhere in the county under the program would provide a short-term protection for this existing agricultural land but would not increase the amount of Farmland in the county. As such, this measure would not mitigate the direct effects of MCAS Tustin reuse development. In addition, the Williamson Act program is voluntary and there is no assurance that the City of Tustin, as the LRA, or the County of Orange could persuade private landowners to enroll their land in the program or to continue the contract

for longer than a single ten-year term. Since this measure cannot be ensured, this is not considered viable mitigation.

As discussed above, there would be no long-term viable mitigation to offset the impact of converting Farmland on MCAS Tustin to urban uses. Impacts would be significant and unmitigable.

4.8.4 Alternative 2

Impacts

Reuse development under Alternative 2 would convert 702 acres of Farmland to urban uses. Therefore, this alternative would result in the same significant impact on Farmland as Alternative 1.

Mitigation Measures

There would be no long-term viable mitigation to offset the impact of converting Farmland on MCAS Tustin to urban uses, as discussed in Section 4.8.3. Impacts would be significant and unmitigable.

4.8.5 Alternative 3

Impacts

Reuse development under Alternative 3 would convert 702 acres of Farmland to urban uses. Therefore, this alternative would result in the same significant impact on Farmland as Alternatives 1 and 2.

Mitigation Measures

There would be no long-term viable mitigation to offset the impact of converting Farmland on MCAS Tustin to urban uses, as discussed in Section 4.8.3. Impacts would be significant and unavoidable.

4.8.6 No Action Alternative

Impacts

Under the caretaker conditions, the 702 acres of Farmland on the Air Station would not be converted to urban uses. Agricultural production on the leased land could continue. No otherwise significant impacts would result.

Mitigation Measures

No mitigation is required because no impacts would result.

4.9 SOILS AND GEOLOGY

The primary geotechnical bazards that may affect the reuse plan area, along with engineering techniques that could avoid or reduce the risk from these hazards, are discussed in this section as either related to seismic events or non-seismic events.

4.9.1 Significance Criteria

Soils and geology impacts are considered significant if Air Station disposal or subsequent reuse of the reuse plan area would expose people or structures to potential risk of loss, injury, or death beyond that which is currently accepted in southern California involving: (1) seismic hazards, including: (a) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other scientific evidence of a known fault; (b) strong seismic ground shaking; (c) seismic-related ground failure including liquefaction; or (2) non-seismic hazards including: (a) landslides or mudflows; (b) soil erosion; (c) unstable geologic units (local settlement, regional subsidence, slope instability); or (d) expansive soils.

4.9.2 DON Disposal of MCAS Tustin

Impact and Mitigation Measures

Disposal of MCAS Tustin would be a transfer of title, and would not bave any effect related to geological hazards. No impact would result, and no mitigation measures would be required.

4.9.3 Alternative 1

Impacts

Non-Seismic Hazards

Geotechnical hazards not related to earthquake activity include local settlement, regional subsidence, expansive soils, construction-related slope instability, erosion, and landslides and mudflows.

Local Settlement

Settlement is the localized lowering of the ground surface due to a decrease in the volume of the underlying soil. Settlement results from various causes, including consolidation of compressible soils and hydrocompression, which are both considered likely at the reuse plan area.

Standard engineering techniques of removal and recompaction of loose, unconsolidated, near-surface alluvial deposits to relatively non-compressible materials would be applied in those areas proposed for development under Alternative 1. The compressible materials that would be removed include topsoil and uncompacted fills. In those areas where the unconsolidated deposits are very thick, specially designed foundations (e.g., supported by piles) would be used to reduce this hazard.

Under Alternative 1, geotechnical evaluations of proposed reuse development projects would be required. Engineering techniques of removal and recompaction of near-surface soils susceptible to hydrocompression would be utilized to reduce hazards related to local settlement. Preconstruction flooding of the areas proposed for development to induce hydrocompression of the deposits could also be employed. Because established engineering techniques would be applied as appropriate, the potential for risk of loss, injury, or death would not be unacceptable and this impact would be less than significant.

Regional Subsidence

Subsidence as a result of groundwater withdrawal has not been documented to affect structures in the reuse plan area. Therefore, the potential of loss, injury, or death would not be unacceptable and this impact would be less than significant.

Expansive Soils

As noted in Section 3.9, the project reuse plan area lies within an area of high to very high expansivity of soils. Individual developments would be required to provide determination of the expansion potential of on-site soils and implement appropriate remedial measures in accordance with the local jurisdiction's requirements. This evaluation would be performed during the subsurface geotechnical investigation. The measures might include: removal of clay-rich soils and replacement with a specified thickness of nonexpansive granular soil beneath the structures, concrete slabs, and footings. Mixing during grading of localized expansive soils with granular nonexpansive soils could also be used to reduce this hazard. Improvement of expansive soils could also be accomplished

during construction by presaturation of the expansive materials and/or supplemental reinforcement of the building foundations and slabs. Post-construction drainage control to keep water from collecting under or adjacent to structures might also be used to reduce this hazard. These established engineering techniques would not result in unacceptable potential risk of loss, injury, or death, and impacts related to expansive soils would be less than significant.

Slope Instability

Due to the relatively flat topography of the reuse plan area, hazards associated with the instability of natural slopes are considered negligible. Minimal grading is anticipated under Alternative 1. Maximum beights for cut and fill slopes are estimated to be less than 10 feet and 25 feet, respectively. Slope instability at the reuse plan area is considered a less than significant bazard.

Unstable slope conditions could occur during grading in exploratory and utility trench walls, especially if seepage associated with perched groundwater bas saturated the soils. Collapse of utility trench walls could have the potential for injuring or killing construction workers. The local jurisdictions' standard code requirements for slope design and drainage would apply to individual developments. The grading and trenching contractors would follow California Department of Industrial Relations, Division of Occupational Safety and Health (CalOSHA)-established guidelines for trenching to reduce the hazard of trench wall collapse. The potential risk of loss, injury, or death would not be unacceptable this impact would be less than significant under Alternative 1.

Erosion

As discussed in Section 3.9, concentrated runoff-induced erosion has been observed along Peters Canyon Channel within the reuse plan area and other unlined channels adjacent to it. Minor erosion has also been observed on artificial fill slopes along Jamboree Road.

Grading within the reuse plan area could result in increased erosion rates, especially if grading is conducted in dry, but windy, summer weather. Once an individual site is graded and landscaping vegetation is established, the erosion potential of the soils would diminish.

Detention basins would be constructed as needed in accordance with the local jurisdictions' requirements and standard engineering methods. The basins would be designed so that post-development runoff levels are comparable to undeveloped levels. The water collected would be discharged appropriately at approved locations. A post-development erosion-control program would

also be implemented. This program would include regular inspection and maintenance of drainage control devices, proper irrigation to minimize runoff, rodent control to reduce damage to the detention facilities, and landscaping to reduce wind and water erosion. Temporary erosion control measures would be provided during the construction phases of the project, as required by current grading codes and NPDES permits (see Sections 3.10 and 4.10). The potential risk of loss, injury, or death would not be unacceptable under Alternative 1; therefore, this impact is considered less than significant.

Landslides and Mudflows

The reuse plan area is characterized by a very low propensity for seismic landsliding and no propensity for mudflows because the site is relatively flat (see Section 3.9). Accordingly, no impact would be posed by landslides or mudflows and the potential risk of loss, injury, or death would not be unacceptable.

Seismic Hazards

As discussed in Section 3.9, the reuse plan area lies within a region of southern California which is seismically active and is subject to earthquake-related hazards, as discussed below.

Surface Fault Displacement

The reuse plan area is not located within an Alquist-Priolo Earthquake Fault Zone, and no active or potentially active fault is known to exist at the ground surface in or immediately adjacent to the site; therefore, the potential risk of loss, injury, or death would not be unacceptable. There would be no impact from hazards to reuse development associated with surface fault displacement.

High-intensity Ground Shaking

As discussed in Section 3.9, the reuse plan area would be subject to strong ground shaking during major earthquakes, similar to other areas in California. To reduce this hazard, all structures in California are required to be designed and constructed in compliance with seismic safety standards and requirements of the State Uniform Building Code (UBC). The cities of Tustin and Irvine and the County of Orange require all new development and rehabilitation of existing structures to comply with the most current UBC requirements and standards. Compliance with these existing regulations by each individual development and upgrades of existing structures within the reuse plan area would

reduce impacts related to ground shaking to the most current safety levels; therefore, the potential risk of loss, injury, or death would not be unacceptable and impacts would be less than significant.

Ground Failure

Liquefaction. As discussed in Section 3.9, the reuse plan area bas a high probability of liquefaction in the event of a major earthquake, due to the presence of groundwater near the ground surface and loose soils which are susceptible to liquefaction. The state geologist has mapped the entire reuse plan area as being within a liquefaction hazard zone. Both the cities of Tustin and Irvine and the County of Orange require detailed geotechnical studies for individual development sites to identify which specific engineering techniques would be used to reduce liquefaction hazards. Established techniques may include: (1) excavation and removal or recompaction of potentially liquefiable soils; (2) in-situ ground densification (e.g., compaction with vibratory probes, dynamic consolidation, compaction piles, blasting densification, compaction grouting); (3) other types of ground improvement (e.g., permeation grouting, columnar jet grouting, deep mixing, gravel drains or other drains, surcharge pre-loading, structural fills, dewatering); (4) deep foundations (e.g., piles, piers), that have been designed to accommodate liquefaction effects; (5) reinforced shallow foundations (e.g., grade beams, combined footings, reinforced or post-tensioned slabs, rigid raft foundations); and (6) design of the proposed structures or facilities to withstand predicted ground softening and/or predicted vertical and lateral ground displacements to an acceptable level of risk. ~~removal of susceptible soils and replacement with compacted fill, various methods for mechanical densification of near surface soils, specific depth and methods for excavation and grading, and special foundations for structures.~~ Under Alternative 1, all individual reuse development projects in the reuse plan area would comply with these requirements and use specific engineering techniques for design, grading, and construction appropriate to a given development. As a result, the potential risk of loss, injury, or deaths would not be unacceptable impacts would be less than significant as a result of compliance with these requirements.

Ground Lurching. As discussed in Section 3.9, the reuse plan area is underlain by thick accumulations of alluvium that are more susceptible to ground lurching than if underlain by bedrock. In general, only lightly loaded structures such as pavement, fences, pipelines, and walkways would be damaged by ground lurching; more heavily loaded structures would resist such deformation. Alternative 1 would result in urban development within the reuse plan area, including construction of some lightly loaded structures that could be affected by the hazards posed by ground lurching.

Under Alternative 1, all development would comply with requirements for geotechnical evaluation as specified by the jurisdiction of the individual development sites. These evaluations require the identification of soils susceptible to ground lurching. If these soils are identified, special foundations, or removal and recompaction of shallow subsurface soils prone to ground lurching, would be required. Thus, compliance with these geotechnical requirements would reduce hazards related to ground lurching. The potential risk of loss, injury, or death would not be unacceptable and impacts would be reduced to less than significant levels on a project-by-project basis.

Seismically Induced Settlement. As noted in Section 3.9, within the reuse plan area, seismically induced settlement would most likely occur only in the youngest alluvial deposits adjacent to Peters Canyon Channel. Eacb individual development would comply with the cities of Tustin and Irvine and County of Orange requirements, as appropriate, for geotechnical evaluation of individual sites. The geotechnical evaluation would result in a determination whether or not such deposits underlie a specific development site, and if so, loose, surface deposits containing young alluvial sediments would be removed and replaced with compacted fill in accordance with standard existing engineering techniques. Therefore, the potential risk of loss, injury, or death would not be unacceptable and this impact is considered less than significant.

Tsunami and Seiches

As discussed in Section 3.9, the reuse plan area does not lie within an area of tsunami risk. Nor is the site located near to any confined bodies of water that might be subject to seiche in the event of an earthquake. Therefore, the potential risk of loss, injury, or death would not be unacceptable and geotechnical hazard is posed by tsunami and/or seiche.

Flooding Attributable to Dam Failure After an Earthquake

Peters Canyon and Rattlesnake reservoirs are located several miles upstream from the reuse plan area. If either of these reservoirs failed during or after a major earthquake, this type of flooding could be a significant bazard to the reuse development under Alternative 1. Both reservoirs have been designed and constructed according to applicable earthquake standards to reduce the chance of dam failure. The cities of Tustin and Irvine both have implemented emergency response plans in the case of an earthquake to respond to this hazard. These plans would ensure removal of people from the site and avoid loss of human life, but property could be exposed. Although property loss would be experienced with dam failure, the design and construction standards avoid an unacceptable potential risk of loss, injury, or death.

Construction Activities

Soils in the reuse plan area are characterized as expansive, unstable, and subject to erosion. Local settlement and regional subsidence would not result in a construction-impact because the long-range time frame of these phenomenon is longer than most individual construction projects. The reuse planning area is not subject to landslides or mudflows.

Expansive soils could possibly result in structural collapse during construction.. Unstable slope conditions could occur during grading in exploratory and utility trencb walls, especially if seepage associated with perched groundwater has saturated the soils. Collapse of utility trencb walls could have the potential for injuring or killing construction workers.

The cities of Tustin and Irvine and County of Orange standard code requirements for slope design and drainage would apply to individual developments under Alternative 1. Construction activities would follow California Department of Industrial Relations, Division of Occupational Safety and Health (CalOSHA)-established guidelines for construction to reduce the likelihood of construction-related hazards from geologic phenomenon. CalOSHA regulations also apply to maintaining structural integrity during construction to reduce the hazard of trench wall collapse. The potential risk for loss, injury, or death would be acceptable and the impact would be less than significant.

The reuse plan area is located in an area of high seismic activity. However, construction activities would follow CalOSHA-established guidelines for construction to reduce the likelihood of loss, injury, or death from seismic hazards, including ground failure (liquefaction, ground lurching, seismically induced settlement). Surface fault displacement is not expected in the reuse plan area, and as such would not represent a hazard to construction workers or equipment. Since the reuse plan area is not subject to tsunami or seiche, construction activities would not be subject to those impacts. Construction workers would be evacuated according to applicable evacuation plans if the Peters Canyon or Rattlesnake reservoirs failed after an earthquake. Therefore, the potential risk of loss, injury, or death would not be unacceptable and construction impacts related to seismic hazards would be less than significant.

Mitigation Measures

Compliance with state and local regulations and standards, and established engineering procedures and techniques, would avoid unacceptable risk the creation of significant impacts related to hazards. No mitigation measures would be required.

4.9.4 Alternative 2

Impacts

The potential impacts under Alternative 2 would be comparable to those of Alternative 1 because the geotechnical hazards are associated with existing physical features of the reuse plan area itself. These features would stay the same for the reuse development under Alternative 2. Compliance with the local jurisdictions' requirements for site-specific geotechnical investigations would be required for each individual development. The site specific investigations would identify which specific engineering techniques would be used to reduce any identified geotechnical hazards, and the potential risk for loss, injury, or death would not be unacceptable.

Mitigation Measures

Existing standard engineering techniques would be sufficient to provide adequate protection from geotechnical hazards under Alternative 2. Impacts would be less than significant, and no mitigation measures would be required.

4.9.5 Alternative 3

Impacts

The potential impacts under Alternative 3 would be comparable to those under Alternatives 1 and 2 because the geotechnical hazards are associated with existing physical features of the reuse plan area itself. These features would stay the same for the reuse development under Alternative 3. Compliance with the local jurisdictions' requirements for site-specific geotechnical investigations would be required for each individual development. The site specific investigations would identify which specific engineering techniques would be used to reduce any identified geotechnical hazards and the potential risk for loss, injury, or death would not be unacceptable.

Mitigation Measures

Existing standard engineering techniques would be sufficient to provide adequate protection from geotechnical hazards under Alternative 3. Impacts would be less than significant, and no mitigation measures would be required.

4.9.6 No Action Alternative

Impacts

The No Action alternative would not result in new or additional geotechnical impacts. Existing structures would continue to be subject to existing seismic and non-seismic hazards, and no increase over existing seismic hazards would occur. Impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

4.10 WATER RESOURCES

This section is closely related to Section 4.3 (Utilities), which discusses water supply and infrastructure for domestic use and irrigation. Some water issues related to hazardous waste are discussed in Section 4.11 (Hazardous Wastes, Substances, and Materials).

4.10.1 Significance Criteria

Water resources impacts are considered significant if Air Station disposal or subsequent reuse of the reuse plan area would: (1) continually violate any state or federal water quality standards or continually violate waste discharge requirements and cause significant impairment of water quality, or (2) deplete groundwater supplies or interfere with groundwater recharge beyond what is allowed by the OCWD.

4.10.2 DON Disposal of MCAS Tustin

Impacts

Disposal of DON property would have no direct impact on water resources. Since the disposal is a transfer of title, water resources would not be impacted.

Mitigation Measures

No mitigation is necessary.

4.10.3 Alternative 1

Impacts

Construction Impacts

Alternative 1 would result in construction of buildings, other structures, and infrastructure within the reuse plan area. Construction operations would lead to silt-laden runoff from construction sites due to storm events and watering to reduce PM_{10} emissions. Dewatering of construction sites could also be employed if extensive ground excavation, such as for deep foundations, were required. This runoff, which would contain relatively high levels of TDS (including nutrients), would contribute

to degrading local and regional surface water quality. Construction would not impact groundwater in the deep regional aquifer. Groundwater in the shallow aquifer might be locally lowered during construction. However, this impact would he temporary. Furthermore, no water is pumped from the shallow aquifer, except for testing purposes, such that any temporary local lowering of the shallow groundwater would not impact water operations in Orange County.

Construction operations would be required to ~~implement BMPs to~~ comply with the TMDLs for the Newport Bay watershed, including the sediment TMDL, which has an objective of reducing sediment loads by 50 percent. To comply with and implement the DAMP and NPDES permits, specific BMPs would be required by the city and various regulatory entities. A Storm Water Pollution Prevention Plan (SWPPP), specifies the BMPs to be implemented, would also be required. Examples of some general actions required by BMPs include:

- Schedule excavation and grading work for dry weather.
- Use as little water as possible for dust control.
- Never bose down dirty pavement or impermeable surfaces where fluids have spilled, sweep up dry spilled materials immediately; clean up spills on dirt areas by digging up and properly disposing of contaminated soil, and report significant spills to the appropriate spill response agencies immediately.
- Maintain all vehicles and heavy equipment; conduct all vehicle/equipment maintenance and refueling at one location, away from storm drains; perform major maintenance, repair jobs, and vehicle/equipment washing off site; use drip pans or drop cloths to catch drips and spills, if draining and replacing motor oil, radiator coolant, or other fluids on site; and do not use diesel oil to lubricate equipment or parts.
- Use gravel approacbes where truck traffic is frequent to reduce soil compaction and limit the tracking of sediment into streets.
- Utilize revegetation, if feasible, for erosion control after clearing, grading, or excavating.
- Avoid excavation and grading activities during wet weather.
- Construct diversion dikes to channel runoff around the site and line channels with grass or roughened pavement to reduce velocity of runoff.
- Cover stockpiles and excavated soil with secured tarps or plastic sheeting.
- Remove existing vegetation only when absolutely necessary, consider planting temporary vegetation for erosion control on slopes or where construction is not immediately planned, and plant permanent vegetation as soon as possible.
- Other BMPs included in the DAMP or required by general construction NPDES permits.

Therefore, construction impacts would not continually violate standards or requirements and would be less than significant.

Groundwater Impacts

Wells no longer in use are required by California law to be filled to assure the groundwater supply is protected and preserved for future use. A search for on-site abandoned wells and a geophysical survey identified 16 potential buried well casings. These potential wells would be properly filled prior to development of the reuse plan area to protect the groundwater resource. Thus, impacts related to these wells would be less than significant.

Four non-potable water wells may be constructed by the IRWD along Barranca Parkway. These wells would pump water from the deeper regional aquifer described in Section 3.10. Currently, only one well pumps water from this aquifer (OSUM-T well). Thus, a total of three new reclaimed water wells could be drilled on the site. Also, groundwater could be pumped from other IRWD wells.

As described in Section 3.10, groundwater withdrawal in the Orange County Water Basin is not restricted and ~~i~~ncreased pumping from the regional aquifer could result in a lowering of the groundwater table, thus resulting in a significant impact. However, as noted in Sections 3.11 and 4.11 (Hazardous Waste, Substances, and Materials), there are three contaminated water bearing zones (WBZ) underneath the site. SARWQCB will oversee institutional controls on these locations to ensure no migration of contaminants from the WBZs to the aquifer. ~~Further, However~~, the IRWD would be required to pay for any increase over 75 percent of its average annual historical pumping at a rate equivalent to buying water. Thus, the IRWD would have an incentive not to pump water over average historical production levels because the water would cost the IRWD the same amount as imported water and any groundwater pumping must be coordinated with SARWQCB. It is not expected that the IRWD would increase groundwater withdrawal either depleting groundwater supplies or interfering with groundwater recharge~~, because for the same price they could obtain higher quality imported water~~. Also, retention basins associated with the proposed golf course would support groundwater recharge. Impacts related to groundwater would be less than significant under Alternative 1.

Water Quality

Reuse development under Alternative 1 would increase the amount of impervious surfaces, particularly by developing areas currently used for agriculture. Approximately 40 percent of the site

is considered pervious surface (conservative estimate). Under Alternative 1, approximately 18 percent would be pervious. This very conservative estimate of pervious surface represents the golf course and all parkland. It excludes landscaped areas associated with housing and other project components. While urban runoff generally impacts groundwater quality to a lesser extent than agricultural production, Alternative 1 would increase the amount of surface runoff. Contaminants commonly associated with urban development include leaking motor oils, fuel, and other vehicular fluids, and trash. These contaminants can be washed by rain and carried with runoff into local and regional waterways. Similar to construction, an SWPPP and BMPs may be required for development to limit the introduction of these contaminants into the watershed. Alternative 1 could lead to dewatering of the shallow aquifer if deep foundations, utilities, or below-grade development (such as for streets), were to be built. Since the shallow aquifer contains water with high levels of salts, hazardous materials, and other contaminants and this project would contribute runoff to an "impaired" water body, this dewatering would need to comply with BMPs contained in the DAMP, the state's NPDES permit and local SRWQCB permits, and TMDL reduction targets. ~~result in an impact on downstream water quality.~~

Dewatering for urban development as described above could result in water with a high salinity being discharged into impaired local and regional waterways. However, all wastewater produced as a result of dewatering that is directed into drainage facilities would be treated, if as necessary, prior to discharge into those waterways in order to comply with the ~~Total Maximum Daily Loads~~ TMDLs adopted by the SARWQCB. Construction dewatering and treatment of ~~T~~treated water would be in compliance with the ~~Total Maximum Daily Load~~ TMDL requirements of the SARWQCB for discharges into Lower San Diego Creek and Newport Bay. Therefore, with treatment, the impact of dewatering would be less than significant.

With reuse of Alternative 1, there could also be the potential for long-term benefits to water quality. As described in Section 3.10, there are four primary sources of water quality problems for Newport Bay: siltation, bacterial contamination, depletion of oxygen due to the influx of nitrates from agricultural run-off and associated algae blooms, and toxic substance contamination. By eliminating the existing agricultural operations on the Air Station, the amount of nutrients released into Peters Canyon Channel would be reduced accordingly. Reducing nutrients would help to control algae blooms leading to the depletion of oxygen and toxic substance contamination.

Under Alternative 1, DON would continue to be allowed to discharge 150,000 gallons per day of treated contaminated water from the site under existing permits. Discharge would continue until all

environmental clean-up is satisfied. Therefore, impacts related to discharge of treated contaminated groundwater would be less than significant because DON has existing permits to pump the water.

Under the NPDES issued to Orange County and the cities of Tustin and Irvine (as co-permittees), all development and significant redevelopment must be implemented with non-point source pollution control measures, BMPs. Individual development projects must include plans for structural and non-structural BMPs that are consistent with the County Drainage Area Master Plan. (County of Orange 1999c). However, the County of Orange has indicated that compliance with BMPs would not be sufficient to reduce impacts related to water quality to less than significant levels because Lower San Diego Creek and Newport Bay are deemed impaired. However, potential impacts related to water quality would be less than significant with adherence to NPDES permit and TMDL requirements, together. None of these activities would result in a continual violation of water quality standards or waste discharge requirement causing significant water quality impairment.

Mitigation Measures

Compliance with all regulations and requirements would result in the avoidance of significant impacts to water resources. No mitigation measures would be required.

4.10.4 Alternative 2

Impacts

Alternative 2 would generate impacts on groundwater supplies and water quality similar to Alternative 1.

Mitigation Measnres

No significant impact would occur, and no mitigation measures would be required.

4.10.5 Alternative 3

Impacts

Alternative 3 would generate similar impacts on groundwater and water quality as Alternative 1.

Mitigation Measures

No significant impact would occur, and no mitigation measures would be required.

4.10.6 No Action Alternative

Impacts

Under the No Action Alternative, Air Station cleanup activities would continue and ultimately result in improved groundwater quality. However, agricultural production on the leased land would continue to affect water quality with runoff containing pesticides, herbicides, fertilizers, and other common chemicals used for agriculture. The combined impact would be less than significant.

Mitigation Measures

No significant impact would occur, and no mitigation measures would be required.

4.11 HAZARDOUS WASTES, SUBSTANCES, AND MATERIALS

The focus of this section is on the 1,602-acre portion of the reuse plan area under military control, since military activities are the source of hazardous material spills or contamination. The four-acre, privately owned parcel bas been used in the past for agriculture and is now undeveloped. No hazardous materials concern have been identified for this parcel.

4.11.1 Significance Criteria

Construction activities would have significant impacts if:

- construction activities would cause a release of hazardous materials/waste that would pose a threat to buman health or the environment;
- construction activities would be inconsistent with CERCLA (42 U.S.C. § 9601 (1994)) and the National Contingency Plan (NCP); or
- workers and/or the general public would be exposed to hazardous materials at concentrations above Occupational Safety and Health Act (OSHA) (Cal. Code Regs., Title 8, § 330 et seq.) levels.

Operations would have significant impacts if:

- workers and/or the general public would be exposed to bazardous materials at concentrations above OSHA (Cal. Code Regs., Title 8, § 330 et seq.) occupational health levels;
- the operations would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- a significant hazard would be created through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment;
- the operations would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; or

- soil and/or groundwater would be exposed to hazardous materials at a concentration above hazardous levels.

4.11.2 DON Disposal of MCAS Tustin

Impacts and Mitigation

No direct bazardous materials or waste-related impacts would occur from disposal of MCAS Tustin, and no mitigation measures would be required.

4.11.3 Alternative 1

Impacts

Alternative 1 would not have a significant environmental impact from the hazardous wastes, substances, and materials on the property during construction or during operation. DON is in the process of implementing various remedial actions that will remove, manage, or isolate potentially hazardous substances. Construction and operations under this alternative can be undertaken so that buman health and the environment would be protected during construction and operation.

Development of this alternative would result in a variety of housing, employment, recreation, educational, and community support uses. Designated land uses that could use hazardous materials and could generate hazardous waste include Commercial Business (265.2 acres), Golf Course (159.3 acres), Community Park (24.1 acres), Urban Regional Park (84.5 acres), and three neighborhood parks planned for the residential area (18 acres). The Commercial Business land use could require hazardous substance for high tech research and development, and the golf course and park uses would likely utilize pesticides and fertilizers in their operations. The total of these areas is 551.1 acres.

Construction

IRP

Construction activities at MCAS Tustin that may interfere with remediation would be subject to institutional controls identified in CERCLA RODs. For any future project, the ~~design team and contractors~~ property owner must be informed of the past use so that remediation sites can be considered in the more detailed designs of future projects. C~~, and contractors~~ would be informed of the past use and required to implement health and safety plans for work around remediation sites. It should be noted that even if construction activities are performed without violating any of the institutional controls, the party performing the construction could be considered a Potential Responsible Party on the CERCLA site. This is particularly true for groundwater sites, where any dewatering or subsurface disturbance can impact the groundwater gradient and the subsequent migration of contaminants. Contractors would develop contingency plans to address contaminated soil and buried debris. However, as a precautionary measure, any work performed near or at remediation sites would have the potential to disturb contaminated soil and would be considered a potentially significant impact. If contaminated soil is encountered, work would be halted until the contaminated area of construction is remediated.

Compliance Program

Storage Tanks. All current tanks will be closed per approved closure plans. No significant impacts to construction or operation activities would result.

Fuel Line Closure. The six-inch Tustin Spur and the four-inch line on the Air Station have been abandoned in place. Results of pressure testing did not indicate any leakage in the line, and the line was closed with oversight and concurrence from the California Fire Marshal's Office. Therefore, no significant impacts from the fuel line would occur as a result of implementing Alternative 1.

PCBs. All except for one known PCB oil-filled, cut-out switch has been replaced at MCAS Tustin. This cut-out switch is currently in good operating condition. It would be managed in place and no impacts would result. If it is necessary to replace or move the cut-out switch in the future, it would

be the responsibility of the transferee to dispose of PCBs properly. With proper disposal no significant impact would occur.

ACM and LBP. Demolition and/or renovation of existing structures would occur under Alternative 1. The exact number of structures to be demolished or renovated is not known. These activities have the potential to generate air emissions of asbestos from ACM and lead-contaminated dust from LBP. As individual structures are abated, these air emissions of asbestos fibers and leaded dust would be reduced to below a level of significance by the transferee through adherence to existing federal, state, and local regulatory requirements.

VOCs. Site remediation activities conducted as part of the IRP are anticipated to improve the existing condition of contaminated soil and groundwater on MCAS Tustin. As part of this remediation effort, some VOCs would be released into the environment. According to the SCAQMD, air emissions from vapor extraction activities, such as those proposed by reuse of MCAS Tustin, typically generate one to two percent, by weight, of the volatile constituent after controls such as oxidation and carbon absorption. For a discussion of air quality impacts, see Section 4.13.

Operation

Land use under Alternative 1 could use and generate small amounts of hazardous substances in commercial/business areas and likely for maintenance activities. Fertilizers and pesticides would be used at the golf course and park maintenance uses. The presence of these materials would create the potential for incidents of uncontrolled releases of hazardous materials to the environment through accidental spills, equipment failure, and other unanticipated events. The use of fertilizers and pesticides for golf course and park uses is a concern due to the proximity of proposed residential areas and an elementary school. Further detailed design would take these uses into account. Design and operation of the golf course and park would include best management practices (BMPs) for the storage, handling, and use of fertilizers and pesticides. Operation of the golf course and park would include integrated pest management (IPM) to limit pesticide use. The use of BMPs and IPM would be based on factors such as topography, groundwater flow, proximity to water resources, mowing, and irrigation and would help to limit soil and water contamination from everyday operations.

As part of the closure remedy for IRP-1 (Moffet Trenches and Crash Crew Burn Pits), institutional controls, groundwater monitoring and gas migration monitoring would be required. Decomposition gas is not expected in large quantities because much of the original landfill has been replaced with clean material and what remains is within the groundwater table, thereby slowing the decomposition process (1999e). Probes would be monitored and the appropriate response taken consistent with the final closure plan.

Landscape irrigation along the proposed riding and hiking trail and upstream from other uses is not expected to have any significant effect on the landfill closure remedy. The amount of water applied to these uses and entering the groundwater would be expected to be similar to that from the baseline agricultural use. Best management practices for water application would be implemented. Although the conditions of the groundwater monitoring plan for the site have not been finalized, it is expected that sampling would continue until the site is closed to insure that the water meets discharge SARWQCB requirements.

There is one location where proposed residential areas would overlay sites that have been classified as hazardous waste sites in the past. This is the medium density residential area located north of Valencia Avenne. NFA has been recommended at the 23 IRP sites and AOCs within OU-2 and OU-4. All IRP sites overlain by proposed residential uses under the alternative would be remediated to residential standards (DON 1999e).

Activities under Alternative 1 would be conducted in accordance with federal, state, and local regulations governing the use, handling, transportation, and storage of hazardous materials, thereby reducing the potential of an unauthorized release to the environment. Potential impacts would still exist from the potential for accidental spills or releases of hazardous materials, and the associated need for new hazardous material storage and hazardous waste accumulation areas. Proposed schools would exist within one-quarter mile of where hazardous materials could be utilized. The use of BMPs and IPM in the design and operation of the golf course and park and compliance with all applicable federal, state, and local regulations in the handling and use of hazardous substances would reduce potential impacts to below a level of significance.

Waste from on-going remediation activities would be addressed under CERCLA in accordance with applicable federal and state laws and regulations. Transportation of hazardous materials/waste would occur in compliance with U.S. Department of Transportation regulations regarding the transportation of bazardous waste, and no significant impacts would result.

Mitigation Measures

No significant hazardous wastes, substances, and materials impacts were identified and no mitigation measures beyond those described above as part of the design process and operation of the project are required. Institutional controls, as outlined in Section 3.11, would continue as applicable.

4.11.4 Alternative 2

Impacts

Implementation of this alternative would permit reuse of some existing military structures and facilities. The north blimp hangar could be reused if financially feasible, and the south blimp hangar would be removed. Other designated land uses of this alternative would be similar to those described for Alternative 1.

Designated land uses that are likely to use hazardous materials and that may generate hazardous waste include Commercial Business (309.8 acres), Golf Course (177.0 acres), Community Park (46.7 acres), and two neighborhood parks planned for the residential area (16 acres). Within the high tech research and development area of the Commercial Business land use designation, various hazardous substance may be used, and the golf course and park maintenance uses would likely utilize pesticides and fertilizers in their operation. The total of these areas is 549.5 acres. By comparison, Alternative 2 would result in the development of 1.6 acres less than Alternative 1; thus, the area subject to the future use of hazardous substance would be reduced accordingly. Construction and operational impacts for Alternative 2 would be similar to those described for Alternative 1. The use of BMPs and IPM in the design and operation of the golf course and park and compliance with all applicable federal, state, and local regulations in the handling and use of hazardous substances would reduce potential impacts to below a level of significance.

Mitigation Measures

~~Mitigation measures to reduce impacts of Alternative 2 to below a level of significance would be identical to those described under Alternative 1.~~ There would be no significant impacts so no mitigation measures would be necessary.

4.11.5 Alternative 3

Impacts

Implementation of this alternative would result in the development of the MCAS Tustin Reuse Plan. Similar to Alternative 2, this alternative would allow the reuse of the northern blimp hangar and removal of the southern blimp bangar. Other designated land uses of this alternative would be similar to those described for Alternative 1.

It should be noted that the Commercial Business designation under this alternative would allow industrial uses, which were not allowed under this designation for Alternative 1 or Alternative 2. Designated land uses that are likely to use hazardous materials and may generate hazardous waste include Commercial Business (309.6 acres), Golf Course (186.9 acres), Community Park (51.3 acres), and two neighborhood parks planned for the residential area (16 acres). Industrial and research and development uses would likely utilize various hazardous substances, and the golf course and park maintenance uses would utilize pesticides and fertilizers in their operation. The total of these areas is 563.8 acres. By comparison, Alternative 3 would result in the development of 12.7 acres more than Alternative 1; thus, the area subject to the future use of hazardous substances would be increased accordingly. Construction and operational impacts of Alternative 3 would be similar to those described for Alternative 1. The use of BMPs and IPM in the design and operation of the golf course and park and compliance with all applicable federal, state, and local regulations in the handling and use of hazardous substances would reduce potential impacts to below a level of significance.

Mitigation Measures

There would be no significant impacts so no mitigation measures would be necessary.

4.11.6 No Action Alternative

Impacts

Under the No Action Alternative, DON would retain ownership of approximately 1,585 acres of surplus federal property. Except for the existing agricultural and building leases, all mission-related activities would cease, and buildings would be vacated. The property would be under caretaker status, the area fenced off, buildings would be sealed and decommissioned, and no new construction would occur. Ongoing remediation efforts would continue at all restoration sites, which would be cleaned to standards consistent with the current program requirements. Approximately 17 acres would continue to be utilized by the Army Reserve.

All remediation efforts would be conducted in compliance with federal, state, and local regulations. However, under this alternative, MCAS Tustin would not be transferred for reuse and therefore cleanup efforts would not be accelerated pursuant to the President's fast-track cleanup directive. The scope and timing of investigations and cleanup would reflect the caretaker status of the property and would proceed in accordance with the IRP. However, cleanup may slow without the possibility of reuse. As long as remediation activities continued, groundwater contamination would not migrate off base to surrounding jurisdictions.

ACM left in existing buildings would not be impacted under caretaker status. Normal maintenance operations in buildings would not release ACM.

The No Action Alternative would not have a significant impact to hazardous materials and environmental contamination on MCAS Tustin. Maintenance would be undertaken so that human health and the environment would be protected.

Mitigation Measures

Because there would be no significant impacts under the No Action Alternative, no mitigation measures would be required.

4.12 TRAFFIC/CIRCULATION

The principal resource for the preparation of the Traffic/Circulation section of this EIS/EIR is the *Marine Corps Air Station (MCAS) Tustin Disposal and Reuse Traffic Study* (Austin-Foust 1999), which is included as Appendix F to this EIS/EIR.

4.12.1 Significance Criteria

As defined by CEQA, vehicle traffic impacts would be significant if disposal or reuse of MCAS Tustin would result in any of the following conditions:

- Cause an increase in traffic which is substantial in relation to the traffic load anticipated without the proposed reuse and capacity of the planned street system, i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or the intersection capacity utilization.

- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

Impacts to public transportation systems and bikeways would be significant if disposal or reuse of MCAS Tustin would degrade the operations of a system or would prevent planned improvements to a system.

4.12.2 DON Disposal of MCAS Tustin

Impacts and Mitigation

DON disposal of MCAS Tustin, which would involve a transfer of title, would not have a significant traffic or circulation impact. Disposal would not generate vehicular trips, add use to any transportation or bikeway system, or impede the planned improvement of any transportation system. No mitigation would be required.

4.12.3 Alternative 1

Traffic Impacts

Traffic Analysis Methodology

Traffic impacts for Alternative 1 are analyzed by comparing the intersection and mid-block operating parameters for the forecast Alternative 1 traffic conditions with the same parameters for the traffic conditions without Alternative 1. These comparisons have been completed for three time periods: Existing, 2005, and 2020. Traffic conditions for the post-2020 period are also discussed, but they have not been compared with a without-reuse set of data. Traffic forecasting methodology, development of the modeled roadway systems for each time period, and without-reuse operating conditions are described in Section 3.12 of this EIS/EIR.

Where appropriate, the intersection analyses consider the existing or planned use of ATMS. The ATMS program involves a variety of actions such as camera surveillance and centralized system control, and it is part of the traffic signal system improvements planned for implementation by the City of Tustin and other Orange County jurisdictions over time. The City of Irvine implements ATMS measures for certain intersections, including all of the intersection locations within the IBC. A conservative 0.05 reduction in ICU was used for ATMS improvements at individual locations. The ATMS credit of 0.05 for IBC locations and for locations in Irvine identified as ATMS intersections are not shown in the ICU tables, but have been included in the analysis.

The quantitative determination of significant impacts was made by the application of the performance standards of Table 4.12-1.

Table 4.12-1
Significant Impact Quantitative Standards

Roadway Element	Acceptable performance LOS (or better)	Acceptable Performance V/C or ICU	Acceptable Increase when ICU without proposed action is Unacceptable
CMP intersections	E	≤1.00	≤0.03
IBC intersections	E	≤1.00	≤0.01
CMP freeway ramp intersections	E	≤1.00	≤0.03
All other intersections	D	≤0.90	≤0.01
Mid-block lanes	D	≤0.90	Not applicable

Trip Generation

The traffic analysis for the reuse alternatives is based on the trip generation characteristics of the land uses in each of the alternatives. Trip generation is calculated from the amount and type of proposed land use, and requires a quantification of the land use into designated units (e.g., square feet of floor area, number of dwelling units, etc). The land use areas used for trip generation calculations are shown in Figure 2-1 of this EIS/EIR. The land uses assumed for 2005 are based on the projected land use absorption by 2005. The forecast trip generation for Alternative 1 is ~~108,452~~ 109,804 ADT at the interim stage of development in 2005, and ~~215,093~~ 216,445 ADT at buildout in 2020. The detailed trip generation analysis is included in Appendix F to this EIS/EIR (bound separately). A summary of the trip generation for Alternative 1 is shown in Table 4.12-2.

Reuse Plan Area Roadway Network

The proposed roadway network for Alternative 1 is shown in Figure 4.12-1. The roadway system on site would be oriented around a southwesterly extension of Tustin Ranch Road, which would connect with Von Karman Avenue; extensions of Warner Avenue to provide a through roadway; and the North Loop Road and South Loop Road. Warner Avenue would be discontinuous if the southern blimp hangar is retained, and hence alternate alignments for Tustin Ranch Road and Warner Avenue are also shown. Right-of-way and/or design improvements would be made to Landsdowne , Severyns, and Marble Mountain roadways on site, and to Red Hill Avenue, Barranca Parkway, Harvard Avenue, and Edinger Avenue adjacent to the site. A discussion of the timing of, and responsibility for, the improvements is included in Section 7.2.11 of this EIS/EIR. Amendments to the County MPAH would be made for all roadways classified as Major, Primary Arterials, and Secondary Arterials.

Trip Distribution

The distribution of traffic generated by Alternative 1 is shown in Figure 4.12-2. The percentage of trips is shown on roadway segments with two percent or more of the project-generated trips; segments with no value shown would have one percent or less reuse plan area trips. The trip distribution is determined by the traffic model and the interaction of proposed reuse plan area land uses with each other and with the surrounding land uses. Traffic volumes generated for individual roadways, calculated by combining the trip generation and the trip distribution, would not be directly added to existing or projected traffic volumes on the roadways. Interaction between the reuse plan area land uses and the surrounding land uses would result in a redistribution of traffic which may be

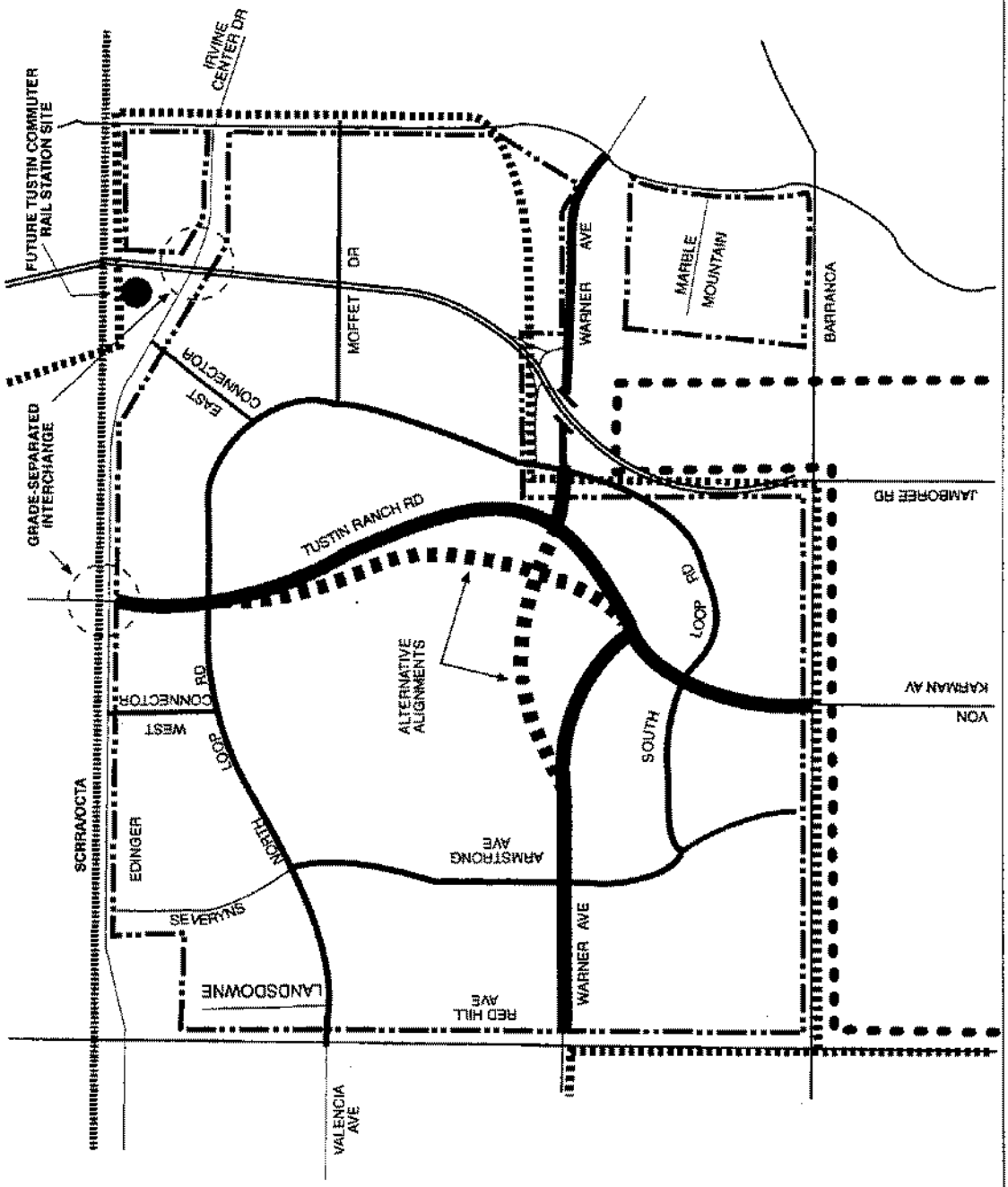


Figure 4.12-1
Alternative 1
Circulation System

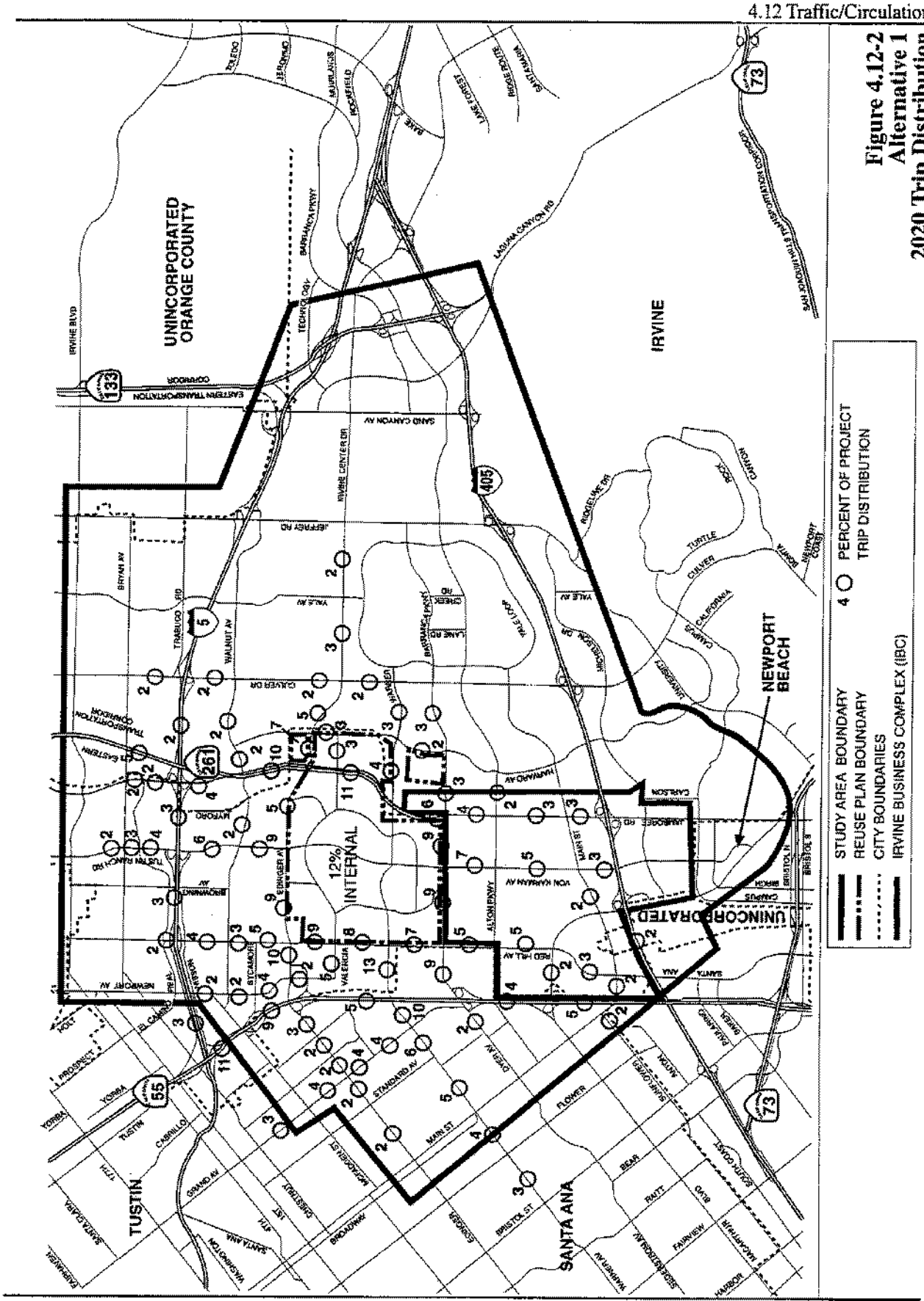


Figure 4.12-2
Alternative 1
2020 Trip Distribution

Table 4.12-2
Alternative 1 Land Use and Trip Generation Summary

Land Use Type	Trip Source[1]	Interim Development - 2005 Units		ADT	Project Buildout - 2020 Units		ADT
By Land Use							
LDR (1-7 DU/Acre)	1	~~504.00~~ 1,365.00	DU	4,823	~~576.00~~ 1,437.00	DU	~~5,512~~ 13,752
MDR (8-15 DU/Acre)	2	~~2,059.00~~ 1,198.00	DU	16,472	~~2,546.00~~ 1,685.00	DU	~~20,368~~ 13,480
MHDR (16-25 DU/Acre)	1	588.00	DU	3,898	1,479.00	DU	9,805
Transitional Housing	1	192.00	Room	941	192.00	Room	941
Hotel	1	–		–	500.00	Room	4,115
Elementary School	1	650.00	STU	663	1,300.00	STU	1,326
High School	1	–		–	1,850.00	STU	3,312
Learning Center	2	1,385.53	TSF	8,479	1,385.53	TSF	8,479
Neighborhood Commercial	1	80.39	TSF	8,989	156.97	TSF	17,552
Community Commercial	1	236.88	TSF	16,148	554.08	TSF	37,772
Shopping Center	1	665.59	TSF	29,528	988.16	TSF	37,490
General Office	1	289.83	TSF	3,847	524.03	TSF	6,955
Office Park	1	615.50	TSF	5,042	2,769.59	TSF	23,301
Military (Office)	1	40.85	TSF	542	40.85	TSF	542
Light Industrial/R&D	1	204.68	TSF	1,660	204.68	TSF	1,660
Industrial Park	1	683.89	TSF	5,602	3,897.00	TSF	34,145
Park	2	24.10	Acre	121	24.10	Acre	121
Regional Park	2	84.50	Acre	423	84.50	Acre	423
Golf Course	2	159.30	Acre	1,274	159.30	Acre	1,274
Total				~~108,452~~ 109,804			~~215,093~~ 216,445
By City							
Tustin				~~103,373~~ 104,489			~~210,014~~ 211,130
Irvine				~~5,079~~ 5,315			~~5,079~~ 5,315

LDR - low density residential; MDR - medium density residential; MHDR - medium high density residential; R&D - research and development; STU - students; TSF - thousand square feet
See Table 2-2 of Appendix F for breakdown by land use within each city.
[1] Trip generation rate sources: 1 - ITE 1997; 2 - SANDAG 1996

summarized as follows: as land uses within the reuse plan area develop over time, travel patterns in the surrounding area would evolve in relation to those land uses. Future residents in the surrounding area would make daily trips within and around the reuse plan area (for school, convenience shopping, etc.), which would be included in the 12 percent internal distribution shown in Figure 4.12-2. Residents would also travel to activity centers such as the IBC and the Santa Ana business and industrial areas for work trips and major shopping trips. The commercial land uses in the reuse plan area would attract trips from the surrounding residential area. It is assumed that no changes would occur to the surrounding land uses and trip generation as a result of the reuse. However, the trips that are already being generated by those land uses may be redirected to or intercepted by the land uses within the reuse plan area. The trip patterns are derived by the traffic model by considering all future land uses in the region.

Impact Analysis

Alternative 1 Plus Existing

"Stand-alone" impacts were determined by superimposing the full development onto existing traffic conditions (1997), which is representative of the baseline. For this analysis, no modifications or additions were assumed to the existing circulation system outside the reuse plan area. ADT volumes and a complete listing of ICU values for intersections and freeway ramps for this analysis are included in Appendix F. Tables 4.12-3 and 4.12-4 list the arterial intersections and freeway ramp intersections where significant impacts would occur under the existing plus Alternative 1 scenario. The locations are shown in Figure 4.12-3. The analysis also indicates that the redistribution of traffic would result in the improvement of one intersection, Jeffrey Road and I-405 northbound ramps in the City of Irvine, from an unacceptable LOS E to an acceptable LOS D under this alternative.

This Alternative 1 plus existing analysis is the worst case scenario and is not realistic for the following reasons: (1) Alternative 1 would not be built all at once, (2) the circulation system outside the reuse plan area would be improved by others in accordance with existing plans; and (3) the proposed action would contribute to off-site improvements as it was developed over time.

Interim Development - 2005

An interim level of development on the site has been analyzed in the year 2005 time frame. The purpose of this 2005 analysis is to determine the type of transportation improvements that would be needed to support phased development of the site. Internal reuse plan area roadways, shown on

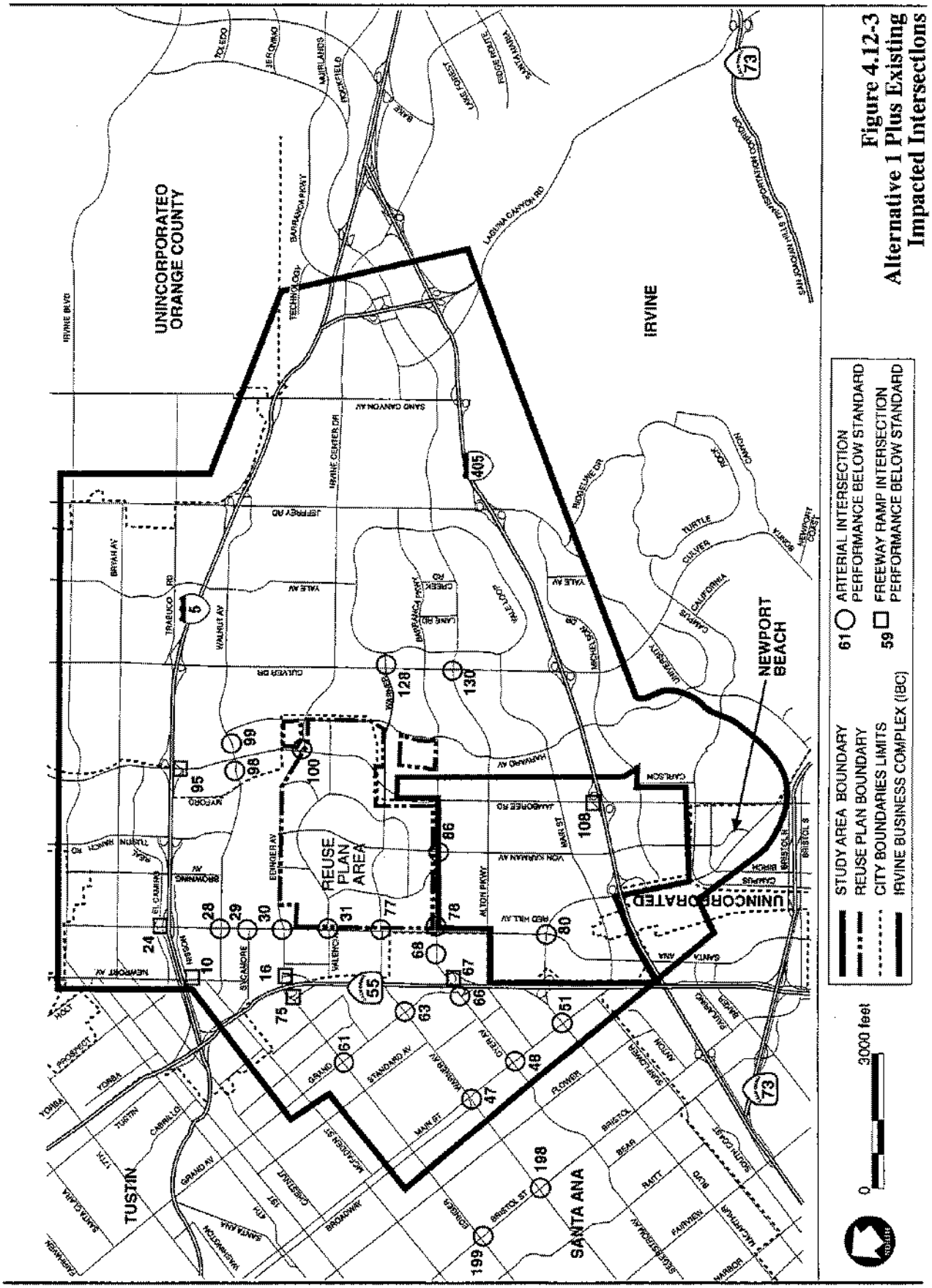


Figure 4.12-3
Alternative 1 Plus Existing
Impacted Intersections

Table 4.12-3
Alternative 1 Plus Existing Impacted Arterial Intersections Summary

Location	Without Reuse		With Alt. 1		Difference		Impacts	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
28. Red Hill & Walnut[2]	.97	.89	1.26	1.09	.29	.20	c	p
29. Red Hill & Sycamore[2]	.94	.80	1.36	1.04	.42	.24	c	p
30. Red Hill & Edinger[2]	.83	1.00	1.20	1.59	.37	.59	p	c
31. Red Hill & Valencia[2]	.71	.68	.93	1.02	.22	.34	p	p
100. Jamboree & Edinger[2]	.79	.82	.87	1.07	.08	.25	–	p
Tustin/Santa Ana								
77. Red Hill & Warner[2]	.63	.59	1.54	1.98	.91	1.39	p	p
Tustin/Irvine								
86. Von Karman & Barranca[1]	.57	.79	1.19	1.08	.62	.29	p	p
Tustin/Irvine/Santa Ana								
78. Red Hill & Dyer/Barranca[1, 2]	.83	.75	1.09	.93	.26	.18	p	–
Santa Ana								
47. Main & Warner	.76	.88	.90	1.02	.14	.14	–	p
48. Main & Dyer	.64	.88	.66	.91	.02	.03	–	p
51. Main & MacArthur	.66	.90	.68	.92	.02	.02	–	p
61. Grand & Edinger[2]	.71	.88	.77	.95	.06	.07	–	p
63. Grand & Warner[2]	.54	.75	1.09	1.10	.55	.35	p	p
66. Grand & Dyer[2]	.62	.82	.75	.97	.13	.15	–	p
68. Pullman & Dyer[2]	.48	.73	.76	1.06	.28	.33	–	p
198. Bristol & Warner	.85	.91	.92	.92	.07	.01	p	–
199. Bristol & Edinger	1.13	.98	1.15	.93	.02	–	c	–
Irvine								
80. Red Hill & MacArthur[1]	.78	1.01	.97	1.15	.19	.14	–	c
98. Jamboree (Southbound) & Walnut	.93	.60	1.15	.76	.22	.16	c	–
99. Jamboree (Northbound) & Walnut	.37	.80	.41	.94	.04	.14	–	p
128. Culver & Warner	.74	.67	.76	.96	.02	.29	–	p
130. Culver & Alton	.90	.88	.91	.87	.01	–	p	–

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
[2] TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-4
Alternative 1 Plus Existing Freeway Ramp Intersection Impact Summary

Location	Without Reuse		With Alt. 1		Difference		Impacts	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
10. Newport & I-5 Southbound/Nisson[3]	.76	.78	1.00	.86	.24	.08	p	–
16. SR-55 Northbound Ramps & Edinger[2, 3]	.66	.68	1.01	1.22	.35	.54	p	p
24. Red Hill & I-5 Northbound Ramps[3]	.74	.83	.78	1.02	.04	.19	–	p
Santa Ana								
67. SR-55 Northbound Ramps & Dyer[3]	.70	.83	.97	1.43	.27	.60	–	p
75. SR-55 Southbound Ramps & Edinger[2, 3]	.77	.98	.74	1.08	–	.10	–	c
Irvine								
95. Jamboree & I-5 Southbound Ramps[2]	.93	.71	1.13	.78	.20	.07	p	–
108. Jamboree & I-405 Northbound Ramps[1, 2]	1.21	1.06	1.31	1.09	.10	.03	c	c

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
[2] CMP monitored intersection
[3] TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Figure 4.12-4, were assumed to be constructed as development occurs in accordance with the Phasing Plan described in Section 7.2.11 of this EIS/EIR. Off-site improvements assumed are those indicated as committed for 2005, as described in Section 3.12 of this EIS/EIR. The 2005 analysis also addresses the requirements of the Growth Management Plan (GMP) and the CMP.

ADT volumes, a complete listing of ICU values for intersections and freeway ramp intersections, and peak hour mid-block link volume data for this analysis are included in Appendix F. Tables 4.12-5 and 4.12-5a lists the arterial and freeway ramp intersections where significant impacts would occur under the interim development scenario. The locations are shown in Figure 4.12-4. The analysis also indicates that the redistribution of traffic would result in the improvement of one intersection, Harvard Avenue and Michelson Drive in the City of Irvine, from an unacceptable LOS E to an acceptable LOS D with Alternative 1. There would be no significant impacts at freeway ramp intersections. The analysis of mid-block lane capacity showed that no significant impacts would occur under this alternative.

Buildout - 2020

The analysis of traffic impacts for 2020 uses the trip generation and reuse plan area roadway system for the fully developed Alternative 1. The off-site roadway system is assumed to be the 2020

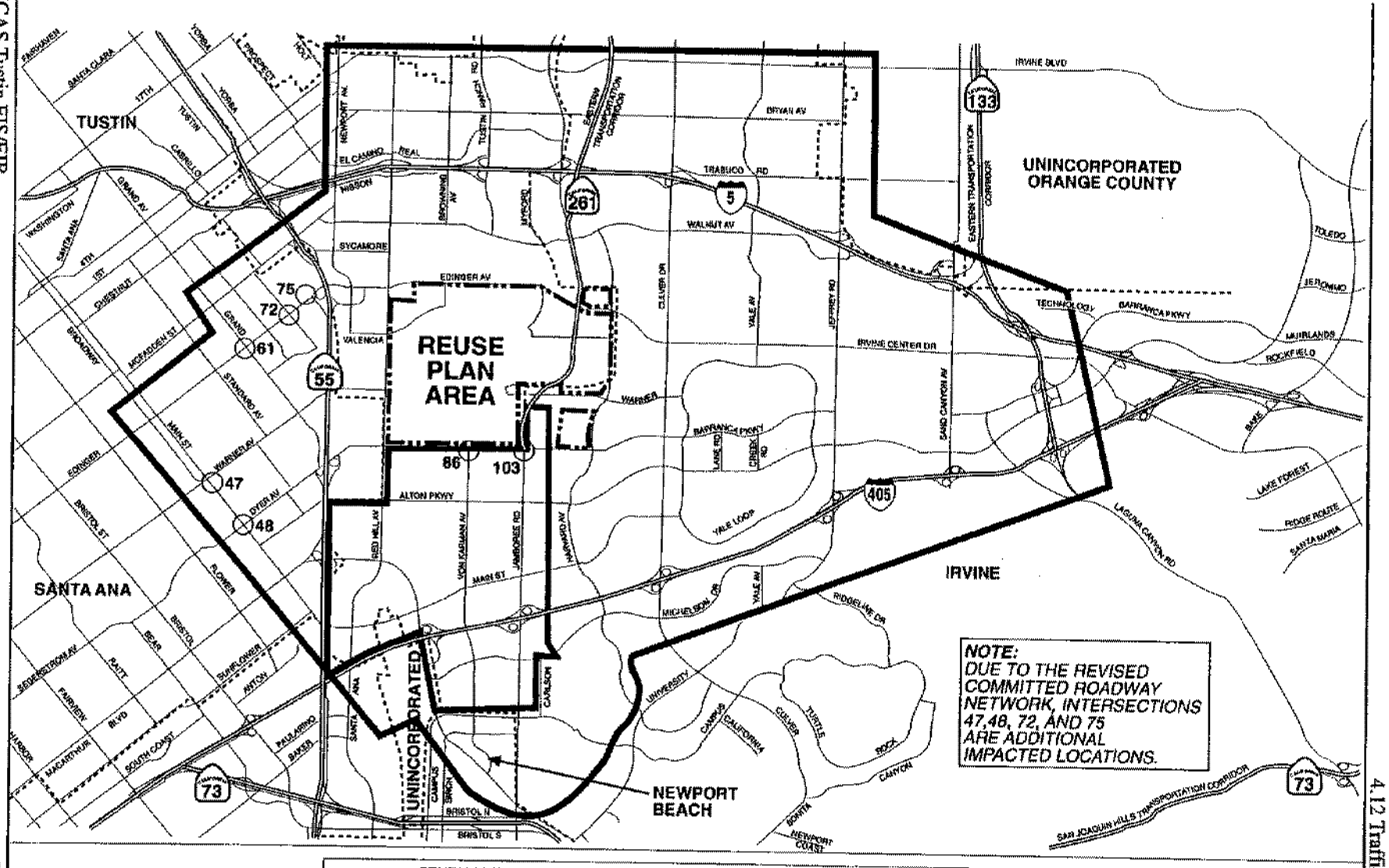


Figure 4.12-4
Alternative 1
2005 Impacted Intersections

Table 4.12-5
Alternative 1 2005 Impacted Intersections Summary

Location	Without Reuse		With Alt. 1		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin/Irvine								
86. Von Karman & Barranca[1]	.63	.95	.62	1.07	–	.12	–	p
103. Jamboree & Barranca[1,2]	.76	.97	.82	1.08	.06	.11	–	p[3]
Santa Ana								
47. Main & Warner	.74	1.05	.79	1.08	.05	.03	–	c
48. Main & Dyer	.79	1.03	.79	1.06	.00	.03	–	c
61. Grand & Edinger[2]	.82	.90	.85	.95	.03	.05	–	p
72. Ritchey & Edinger[2]	.52	.87	.52	.92	.00	.05	–	p

p - project causes deficiency
c - project contributes to deficiency
(1) IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
(2) TSIA intersection
(3) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-5a
Alternative 1 2005 Impacted Freeway Ramp Intersections Summary

Location	Without Reuse		With Alt. 1		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Santa Ana								
75. SR-55 SB Ramps & Edinger[1]	.88	1.19	.90	1.27	.02	.08	-	c

c - project contributes to deficiency
(1) CMP monitored and TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

committed network as described in Section 3.12 of this EIS/EIR. ADT volumes, a complete listing of ICU values for intersections and freeway ramp intersections, and peak hour mid-block link volume data for this analysis are included in Appendix F. Tables 4.12-6 ~~and 4.12-7~~ lists the arterial intersections ~~and freeway ramp intersections~~ where significant impacts would occur under the full buildout scenario. The locations are shown in Figure 4.12-5. The analysis also indicates that there would be two intersections improved from unacceptable to acceptable operations when compared

Table 4.12-6
Alternative 1 2020 Impacted Intersections Summary

Location	Without Reuse		With Alt. 1		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
15. Newport & Edinger[3]	.85	.87	.90	.91	.05	.04	–	p
30. Red Hill & Edinger[3]	.75	.88	.83	.93	.08	.05	–	p
42. Tustin Ranch & Walnut	.84	.89	1.11	1.07	.27	.18	p	p
Tustin/Santa Ana								
77. Red Hill & Warner[3]	.50	.46	.90	.96	.40	.50	–	p
Tustin/Irvine								
86. Von Karman & Barranca[1]	.61	.77	.90	1.01	.29	.24	–	–[2]
103. Jamboree & Barranca[1, 3]	.83	1.15	1.01	1.22	.18	.07	–	c[4]
Santa Ana								
~~48. Main & Dyer~~	~~.81~~	~~1.10~~	~~.80~~	~~1.15~~	–	~~.05~~	–	c
53. Hutton Centre & MacArthur	.73	.91	.72	.93	–	.02	–	c
61. Grand & Edinger[3]	~~.98~~	~~1.05~~	~~1.03~~	~~1.15~~	–	~~.10~~	c	c
	.75	.84	.80	.96	.05	.12	–	p
63. Grand & Warner[3]	~~.61~~	~~.90~~	~~.85~~	~~1.02~~	~~.24~~	~~.12~~	–	p
	.57	.71	.80	.96	.23	.25		
66. Grand & Dyer[3]	~~.73~~	~~.97~~	~~.72~~	~~1.09~~	–	~~.12~~	–	c
	.66	.94	.72	1.04	.06	.10		
70. Lyon & Edinger[3]	.86	.97	.90	1.02	.04	.05	–	c
~~198. Bristol & Warner~~	~~.88~~	~~1.01~~	~~.93~~	~~.98~~	~~.05~~	–	p	–
202. Standard & Edinger	.80	.95	.89	.98	.09	.03	–	c
Irvine								
81. Red Hill & Main[1]	.70	.99	.76	1.15	.06	.16	–	p
89. Von Karman & Michelson[1]	.68	1.07	.85	1.14	.17	.07	–	c
106. Jamboree & Alton[1]	.94	1.01	.91	1.06	–	.05	–	p
118. Harvard & Alton	.85	.89	.94	.88	.09	–	p	–
128. Culver & Warner	.79	.79	.83	.99	.04	.20	–	p
Irvine/Santa Ana								
79. Red Hill & Alton[1]	.68	1.01	.72	1.03	.04	.02	–	–[2]

p - project causes deficiency
c - project contributes to deficiency
(1) IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
(2) Location identified in City of Irvine as an ATMS intersection which discounts the AM and PM peak hour ICUs by .05; therefore there is no project impact at this location.
(3) TSIA intersection
(4) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080, D/0.81-0.90; E/0.91-1.00; F/≥1.00

Figure 4.12-5
Alternative 1
2020 Impacted Intersections

Table 4.12-7
Alternative 1 2020 Impacted Freeway Ramp Intersections Summary

Location	Without Reuse		With Alt. 1		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Santa Ana								
59. Hotel Terrace/SR-55 & Dyer(*)	.68	.87	.74	.94	.06	.07	-	p

p = project causes deficiency
(*) TSIA intersection

with the 2020 baseline. The analysis of mid-block lane capacity showed that no significant impacts would occur under this alternative.

Public Transit Impacts

The development proposed for Alternative 1 would impact public transit in Orange County by creating additional demand for transit service. At the same time, the new arterial roadways through the reuse plan area would provide opportunities for future bus routing, serving persons residing and working in the reuse plan area. The new routes would likely provide improved service, with more direct routes for riders not associated with the reuse plan area.

OCTA prepares regular updates of the countywide transit system. Each reuse phase of development would be included as part of that update program so that the potential impacts and opportunities related to reuse would be addressed with each system update.

Implementation of Alternative 1 would not result in any changes to the rail system. However, the proposed commuter rail station planned near the corner of Jamboree Road and Edinger Avenue, an action separate from the proposed reuse, would provide public transit opportunities to residents and workers in the reuse plan area.

Pedestrian and Bicycle Impacts

Development of new roadways in the reuse plan area would provide an opportunity to enhance the bikeway system, providing additional segments and greater connectivity. No specific significant bicycle impacts of Alternative 1 have been identified, and the added bike trails would provide an overall benefit to the county bike trail system.

No pedestrian impacts have been identified for this alternative.

Construction Impacts

Traffic impacts due to construction would occur as a result of development of the site. The primary activities generating construction traffic would be roadway construction, site development, and other infrastructure development (water, sewer, etc.). The magnitude of the impacts would depend on the type and location of such activities, and would be monitored by City of Tustin administrative procedures for such activities. Possible significant impacts could include lane closures with short-term disruption to the public. ~~Such procedures may~~ Measures to minimize conflicts could include designated routes and times for heavy trucks (i.e., major roadways only and avoiding peak hours). The procedures should be coordinated with neighboring jurisdictions that would be affected.

Mitigation Measures

The following mitigation measures would avoid significant traffic impacts or minimize significant impacts at intersections in the study area in the interim development year 2005. However, at buildout (2020), after mitigation, the intersections of Tustin Ranch Road/Walnut Avenue and Jamboree Road/Barranca Parkway would operate at LOS E and F, respectively. The Tustin Ranch Road/Walnut Avenue intersection would experience this condition even after mitigation. For the Jamboree Road/Barranca Parkway intersection, there is no identifiable mitigation. No mitigation would be necessary for public transit, pedestrian, or bicycle movement as there would be no significant impacts.

Mitigation measures for the traffic impacts of Alternative 1 would add lanes or change lane movements to increase capacity and would implement ATMS improvements to increase operating efficiency. At individual intersections, either or both types of improvements may be specified. The addition of lanes and the modification of lane movements may be accomplished by restriping or by construction. As noted above, an ICU reduction of .05 is taken for ATMS at IBC locations and at locations in Irvine identified as ATMS intersections. In addition, mitigation measures in 2005 would provide a new access into the reuse area from Warner Avenue, west of Jamboree Road. It should be noted that mitigation for intersection #86 (Von Karman Avenue and Barranca Parkway) is an interim improvement only and is not necessary for 2020. If subsequent studies demonstrate that trips would not be generated, or impacts would be different than those projected in this EIS/EIR, the mitigation measures may be modified, subject to the approval of the City of Tustin and any other affected jurisdictions, provided that mitigation to the same ~~ICU value~~ level of service would be provided.

~~No specific mitigation measures are warranted for the stand-alone analysis because of the hypothetical nature of that evaluation; that is, immediate full buildout with no change of external conditions is not a feasible development scenario.~~

Construction

T/C-1 In conjunction with the approval of a site development permit, the City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan within Irvine), shall require each developer to provide traffic operations and control plans that would minimize the traffic impacts of proposed construction activity. The plans shall address roadway and lane closures, truck hours and routes, and notification procedures for planned short-term or interim changes in traffic patterns. The City of Tustin and the City of Irvine, as applicable, shall ensure that the plan would minimize anticipated delays at major intersections. Prior to approval, the City of Tustin or the City of Irvine, as applicable shall review the proposed traffic control and operations plans with any affected jurisdiction.

Interim Development ~~2005~~

T/C-~~1~~2 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall ensure that the arterial intersection improvements required in 2005 and 2020 and as indicated in Tables 4.12-~~7~~8 and 4.12-9 are implemented for their respective jurisdictions according to the cumulative ADT thresholds identified in each table and according to the fair share basis noted. The ADT threshold represents the traffic volume which would result in an impact and the fair share percentage reflects the percent of the traffic impact resulting from the reuse generated traffic. In some cases, reuse traffic would generate 100 percent of the impact, thereby assuming full financial responsibility for the identified improvements. In other cases, reuse traffic would generate only a fraction of the traffic impacting the intersection and financial responsibility would correspond.

T/C-3 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Table 4.12-~~8~~10. The method of implementing ~~nature of the~~ improvements, e.g., restriping, ramp widening, shall ~~would~~ be based on ~~the subject of~~ special design studies, in association with Caltrans.

Table 4.12-87
Alternative 1 2005 Mitigation Lanes for Impacted Arterial Intersections

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[5] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Tustin/Irvine																			
86. Von Karman & Barranca[1] [3]	Base	–	–	–	2	3	–	2	–	1	–	3	d	–	p	–	ma	102,000	100
	Mit.	–	–	–	2	3	–	2	–	2	–	3	d						
103. Jamboree & Barranca[1, 2, 3]	Base	2	4	f	2	3	f	2	4	f	2.5	2.5	1	–	[6]	–	ma	92,000	[6]
	Mit.	2	4	f	2	3	f	2	4	f	2.5	2.5	1						
Santa Ana																			
47. Main & Warner	Base	2	3	–	1	2	–	2	3	–	1	2	1	–	c	–	mp	78,000	15
	Mit.	2	3	–	1	3	–	2	3	–	1	2	1						
48. Main & Dyer	Base	1	3	–	1	2	–	1	2	1	1	2	1	–	c	–	mp	78,000	17
	Mit.	2	3	–	2	2	–	1	2	1	1	2	1						
61. Grand & Edinger[2]	Base	1	3	–	1	3	–	1	3	–	1	3	–	–	p	–	ma	32,000	100
	Mit.	1	3	–	1	3	–	2	3	1	1	3	–						
72. Ritchey & Edinger	Base	1	2	–	1	3	–	1	1	–	1	3	–	–	p	–	ma	70,000	100
	Mit.	1	2	–	1	3	–	1	2	–	1	3	–						

Base - Intersection lanes without mitigation, Mit. - Intersection lanes with mitigation
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation)
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - project contributes to deficiency
ma - Mitigated to an adequate level of service; mp - Project portion of impact mitigated, LOS remains less than adequate

(1) IBC intersection
(2) TSIA intersection
(3) Additional access from Warner Avenue west of Jamboree Road
(4) Interim improvement only, not necessary for 2020
(5) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer~~ mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.
(6) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

Table 4.12-8
Alternative 1 2005 Mitigation for Impacted Freeway Ramp Intersection

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[3] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Santa Ana																			
75. SR-55 SB Ramps & Edinger[1][2]	Base	1	1	--	1	2	--	1.5	.5	f	1	2	f	--	c	--	mp	37,000	28
	Mit.	1	1	--	1	2	--	1.5	.5	f	1	3	f						

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation)
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - project contributes to deficiency.
ma - Mitigated to an adequate level of service; mp - Project portion of impact mitigated, LOS remains less than adequate

(1) CMP monitored intersection
(2) TSIA intersection
(3) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.

Table 4.12-9
Alternative 1 2020 Mitigation ~~Lanes~~ for Impacted Arterial Intersections

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[6] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Tustin																			
15. Newport & Edinger[1, 3]	Base	2	2.5	1.5	1	3	f	2	3	d	2	3	1	–	p	[illegible]	ma	(2)	100
	Mit.	2	2.5	1.5	1	3	f	2	3	d	2	3	1						
30. Red Hill & Edinger[1, 3]	Base	2	3	1	2	3	1	2	3	1	2	3	1	–	p	[illegible]	ma	174,000	100
	Mit.	2	3	1	2	3	1	2	3	1	2	3	1						
42. Tustin Ranch & Walnut[2]	Base	2	3	d	1	2	1	2	3	d	1	2	1	p	p	nm	nm	122,000	100
	Mit.	2	3	d	2	2	1	2	3	d	2	2	1						
Tustin/Santa Ana																			
77. Red Hill & Warner[3]	Base	2	4	1	2	3	1	2	4	1	2	3	1	–	p	[illegible]	ma	206,000	100
	Mit.	2	4	1	2	3	2	2	4	1	2	3	1						
Tustin/Irvine																			
103. Jamboree & Barranca[3, 4]	Base	2	4	f	2	3	f	2	4	f	2.5	2.5	1	–	c	[illegible]	nm	141,000	(2)
	Mit.	2	4	f	2	3	f	2	4	f	2.5	2.5	1						
Santa Ana																			
~~48. Main & Dyer~~	~~Base~~	~~2~~	~~3~~	~~–~~	~~1~~	~~3~~	~~–~~	~~2~~	~~3~~	~~–~~	~~1~~	~~3~~	~~1~~	~~–~~	~~e~~				
	~~Mit.~~	~~2~~	~~3~~	~~–~~	~~2~~	~~3~~	~~–~~	~~2~~	~~3~~	~~–~~	~~1~~	~~3~~	~~1~~						
53. Hutton Centre & MacArthur	Base	2	1	2	2	3	1	1	.5	1.5	2	3	1	–	e	[illegible]	ma	(2)	20
	Mit.	2	1	2	2	4	~~1~~	1	.5	1.5	2	3	1						
61. Grand & Edinger[3]	Base	2	3	~~1~~	~~2~~	3	~~1~~	~~2~~	3	1	~~2~~	3	~~1~~	e	e	[illegible]	ma	172,000	100
	Mit.	2	3	~~1~~	~~2~~	~~3~~	~~1~~	~~2~~	~~3~~	~~1~~	~~2~~	3	~~1~~						
63. Grand & Warner[3]	Base	2	3	~~1~~	2	~~2~~	~~1~~	~~2~~	3	~~1~~	2	3	1	–	p	[illegible]	ma	195,000	100
	Mit.	2	3	~~1~~	2	~~3~~	~~1~~	~~2~~	~~3~~	–	2	3	1						
66. Grand & Dyer[3]	Base	2	–	1	–	~~2~~	1	–	–	–	~~2~~	3	–	–	c	[illegible]	ma	131,000	22
	Mit.	1.5	–	1.5	–	~~2~~	1	–	–	–	~~2~~	3	–						
70. Lyon & Edinger[3]	Base	1	1	1	1	3	1	1	1	2	1	3	–	–	c	[illegible]	mp	152,000	13
	Mit.	~~1~~1.5	~~1~~.5	1	1	3	1	1	1	2	1	3	–						
~~198. Bristol & Warner~~	~~Base~~	~~1~~	~~3~~	~~–~~	~~1~~	~~3~~	~~–~~	~~1~~	~~3~~	~~–~~	~~1~~	~~3~~	~~–~~	p	~~–~~				
	~~Mit.~~	~~2~~	~~3~~	~~–~~	~~1~~	~~3~~	~~–~~	~~1~~	~~3~~	~~–~~	~~1~~	~~3~~	~~–~~						
202. Standard & Edinger	Base	1	2	–	1	3	–	1	2	–	1	3	–	–	c	[illegible]	ma	181,000	9
	Mit.	1	2	–	1	3	1	1	2	–	1	3	–						

Table 4.12-9. Continued

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[6] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Irvine																			
81. Red Hill & Main[4]	Base	1	3	d	2	3	d	2	3	f	1	3	d	–	p	[illegible]	ma	157,000	100
	Mit.	1	3	f	2	3	d	2	3	f	1	3	d						
89. Von Karman & Michelson[4]	Base	1	2	d	1	2	f	1	2	1	1	2	d	–	c	[illegible]	ma	141,000	22
	Mit.	1	2	d	1	2	f	1	2	1	2	2	d						
106. Jamboree & Alton[4]	Base	2	4	d	2	3	d	2	4	1	2	3	d	–	p	[illegible]	ma	(7)	100
	Mit.	2	4	d	2	3	d	2	5	1	2	3	d						
118. Harvard & Alton	Base	1	2	1	2	3	d	1	2	d	2	3	1	p	–	ma	[illegible]	181,000	100
	Mit.	1	2	1	2	3	d	2	2	d	2	3	1						
128. Culver & Warner	Base	1	3	d	1	2	d	1	3	1	1	2	d	–	p	[illegible]	ma	174,000	100
	Mit.	1	3	d	1	2	d	1	3	1	2	2	d						

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
ATMS - Advanced Transportation Management System
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane changes from base scenario (without mitigation)
A .5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - project contributes to deficiency
ma - Mitigated to an adequate level of service; mp - Project portion of impact mitigated; LOS remains less than adequate; nm - Project impact not mitigated
c - Project contributes to deficiency

(1) No lane changes; ATMS measures
(2) Lane changes and ATMS measures
(3) TSIA intersection
(4) IBC intersection
(5) No identifiable mitigation measures
(6) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer~~ mutually agreed to by the cities of Tustin, Irvine, and Santa Ana, as applicable.
(7) Full buildout of Reuse Alternative 1
(8) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the 1998 MOA between the TCA and cities of Irvine and Tustin. Therefore, the impacts of reuse may be overstated, difficult to quantify at this time, and could be less at this location because of unknown improvements.

~~Buildout - 2020~~

~~T/C-24 The City of Tustin and the City of Irvine, as applicable, shall ensure that the arterial intersection improvements indicated in Table 4.12-9 are implemented for their respective jurisdictions.~~

~~Interim Development - 2005 and Buildout - 2020~~

T/C-4 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall ensure that all on-site circulation system improvements for the reuse plan area assumed in the 2005 and 2020 traffic analysis and as shown in Table 4.12-10 are implemented according to the cumulative ADT thresholds identified in the table. Under this Phasing Plan, the City of Tustin shall monitor all new development within the site, accounting for the cumulative ADT generated by development projects. As each ADT threshold is reached, the roadway improvements listed in Table 4.12-10 shall be constructed before any additional projects within the reuse plan area would be approved.

T/C-5 Prior to approval of a site development permit or vesting tract, except for financing or conveyance purposes, for all land use designation areas in Alternative 1 with the exception of the Learning Village, Community Park, and Regional Park, a project developer shall enter into an agreement with the City of Tustin and City of Irvine, as applicable (for that portion of the reuse plan area within Irvine) which assigns improvements required in the EIS/EIR to the development site and which requires participation in a fair share mechanism to design and construct required on-site and arterial improvements consistent with the ADT generation thresholds shown in Tables 4.2-7, 4.2-8, 4.2-9, and 4.2-10.

T/C-6 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area in Irvine), will monitor new development within the reuse plan area, accounting for the cumulative ADTs generated by development projects within the reuse plan area. As each cumulative ADT threshold shown in Table 4.2-10 is reached, the roadway improvements listed shall be constructed before any additional projects within the reuse plan area are approved.

T/C-7 The City of Tustin shall adopt a trip budget for individual portions of the reuse plan area to assist in the monitoring of cumulative ADTs and the amount and intensity of permitted non-residential uses as evaluated in the EIS/EIR.

Table 4.12-10
Alternative 1 – On-site ADT Development Thresholds

ADT (Cumulative)		Roads Added[1]
27,000	(27,000)	Edinger Avenue Landsdowne Road North Loop Road – Red Hill Avenue to West Connector Road (Build 3 lanes only) West Connector Road
82,800	(109,800)	East Connector Road Marble Mountain Road Moffett Drive North Loop Road – Red Hill Avenue to West Connector Road (Final Buildout) North Loop Road – East Connector Road to Moffett Drive (Build 3 lanes only) Red Hill Avenue/Carnegie Avenue Intersection (East Leg) Red Hill Avenue/Warner Avenue Intersection (East Leg) Severyns Road
26,900	(136,700)	Armstrong Avenue – North Loop Road to Barranca Parkway North Loop Road – West Connector Road to East Connector Road North Loop Road – East Connector to Moffett Drive (Final Buildout) North Loop Road – Moffett Drive to Warner Avenue South Loop Road – Warner Avenue to Tustin Ranch Road Tustin Ranch Road – Edinger Avenue to North Loop Road (6 lanes) Tustin Ranch Road – Warner Avenue to Barranca Parkway (Build 4 lanes only) Warner Avenue – Red Hill Avenue to Jamboree Road (Build 4 lanes only)
39,500	(176,200)	South Loop Road – Armstrong Avenue to Tustin Ranch Road Tustin Ranch Road – North Loop Road to South Loop Road (Build 4 lanes only)
40,200	(216,400)	Widen Tustin Ranch Road to 6 lanes (Final Buildout) Widen Warner Avenue to 6 lanes (Final Buildout)

T/C-~~8~~4 Alternative improvements that provide an equivalent level of mitigation in 2005 or 2020 to what is identified in Tables 4.12-7, 4.12-8, and 4.12-9 may be identified in consultation between the City of Tustin and the City of Irvine, as applicable, and the impacted jurisdiction.

~~T/C-5 The City of Tustin and the City of Santa Ana shall implement necessary roadway improvements for the affected locations within the City of Santa Ana jurisdiction, in accordance with a prior agreement: Tustin/Santa Ana Improvement Agreement (TSIA). For deficient Santa Ana intersections that are not covered in the TSIA, the City of Tustin and the City of Irvine, as applicable, shall participate in these improvements on a fair share basis.~~

~~Table 4.12-10~~
~~Alternative 1 2020 Freeway Ramp Mitigation Summary~~

Location		Southbound			Westbound			Northbound			Eastbound			Impact	
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM
Santa Ana															
59. Hotel Terrace/ SR-55 & Dyer[f]	Base	.5	1.5	1	2	3	1	1.5	.5	2	1	3	–	–	p
	Mit.	.5	1.5	1	2	3	1	1.5	.5	2	1	3	1		

Base - Intersection lanes without mitigation
d - de facto right-turn, f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation)
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency.
[f] TSIA intersection
Note: Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as defined by the City of Tustin Traffic Engineer.

T/C-6 ~~The City of Tustin and the City of Irvine, as applicable, shall develop mechanisms to ensure that the roadway improvements needed to adequately serve the reuse plan area are provided. These mechanisms may include, but would not be limited to, developer fees, assessment districts, and tax increments, as determined appropriate by the applicable jurisdictions.~~

T/C-~~7~~9 The City of Tustin shall enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements needed to mitigate the effects of the proposed alternative are constructed pursuant to improvement programs establisbed by the respective jurisdiction.

In order to properly coordinate the timing and improvements in the adjacent jurisdictions, the City of Tustin shall hold a scoping-like meeting with the respective jurisdictions. The purpose of said scoping-like meeting shall be to identify the concerns of the respective jurisdictions prior to the initiation of the fair sbare study. The purpose of the study would be to fully identify, with eacb jurisdiction, the scope and costs of feasible improvements (as determined by the respective jurisdiction). The improvements would be acceptable to eacb jurisdiction toward fulfilling the timing and cost of the transportation improvement obligations as required to mitigate transportation impacts in each jurisdiction. The funding for the improvements to be incorporated into the agreement would be utilized by the

respective agency to improve the capacity of the impacted intersections/links or be used for substituted improvements, as determined by mutual agreement.

Prior to execution of the agreement, each jurisdiction would be allowed ten (10) working days to review the technical report prior to being provided with a copy of the proposed agreement. Each jurisdiction would then have ten (10) working days to review and comment as to its concurrence with the improvement programs contained in the agreement. The comments of each jurisdiction would be considered to ensure that the City of Tustin's responsibility for fair sbare funding of the improvements in eacb jurisdiction as stated above is fully addressed.

4.12.4 Alternative 2

Traffic Impacts

Traffic Analysis Methodology

Traffic impacts for Alternative 2 were analyzed using the same methodology and parameters used for Alternative 1.

Trip Generation

The land use areas used for trip generation calculations under this alternative are shown in Figure 2-2. The land uses assumed for 2005 are based on the projected land use absorption by 2005. The forecast trip generation for Alternative 2 is 108,246 ADT at the interim stage of development in 2005, and 268,130 ADT at buildout in 2020. The detailed trip generation analysis is include in Appendix F of this EIS/EIR. A summary of the trip generation for Alternative 2 is shown in Table 4.12-11.

Table 4.12-11
Alternative 2 Land Use and Trip Generation Summary

Land Use Type	Trip Source[1]	Interim Development - 2005			Project Buildout - 2020		
		Units		ADT	Units		ADT
By Land Use							
LDR (1-7 DU/Acre)	1	1,135.00	DU	10,862	1,729.00	DU	16,547
MDR (8-15 DU/Acre)	2	1,125.00	DU	9,000	2,132.00	DU	17,056
HDR (16-25 DU/Acre)	1	–		–	2,344.00	DU	15,541
Hotel	1	–		–	500.00	Room	4,115
Community Commercial	1	42.34	TSF	2,886	751.06	TSF	51,200
Shopping Center (EQ)	1	576.77	TSF	24,733	1,750.63	TSF	74,464
General Office	1	–		–	92.94	TSF	1,233
Office Park (EQ)	1	1,051.47	TSF	9,116	2,032.19	TSF	17,858
Military (Office)	1	156.11	TSF	2,072	327.79	TSF	4,349
Light Industrial/R&D	1	63.29	TSF	513	987.94	TSF	8,012
Industrial Park (EQ)	1	725.57	TSF	5,944	1,464.91	TSF	12,000
Park	2	46.70	Acre	234	46.70	Acre	234
Golf Course	2	177.00	Acre	1,416	177.00	Acre	1,416
Community Facility	1	1,658.80	TSF	41,470	1,764.18	TSF	44,105
Total				**108,246**			**268,130**
By City							
Tustin				103,594			260,918
Irvine				4,652			7,212

EQ - based on equation-based trip rate; LDR - low density residential; MDR - medium density residential; HDR - high density residential; R&D - research and development; TSF - thousand square feet
See Table 2-3 of Appendix F for breakdown by land use within each city.
[1] Trip generation rate sources: 1 - ITE 1997; 2 - SANDAG 1996

Reuse Plan Area Roadway Network

The proposed roadway network for Alternative 2 is shown in Figure 4.12-6. The roadway system would be designed in a grid fashion to maximize network efficiency (for both local traffic and through traffic). Valencia Avenue would be connected to Moffett Drive, Warner Avenue would be extended directly through the reuse plan area (unlike in Alternative 1), Armstrong Avenue would be extended to Valencia Avenue, and Tustin Ranch Road would be connected to Von Karman Avenue. An as-yet unnamed road (East Connector) would connect Edinger Avenue to Warner Avenue between Jamboree Road and Tustin Ranch Road. Right-of-way and/or design improvements would also be made to Red Hill Avenue, Barranca Parkway, Harvard Avenue, and Edinger Avenue. Other on-base streets (i.e., Severyns, Landsdowne, Marble Mountain, etc.) would connect to the arterial grid street network and be oriented to efficiently serve neighborhoods and districts within the reuse plan area. Amendments to the County MPAH would be made for the on-site roadways classified as Major, Primary, and Secondary Arterial.

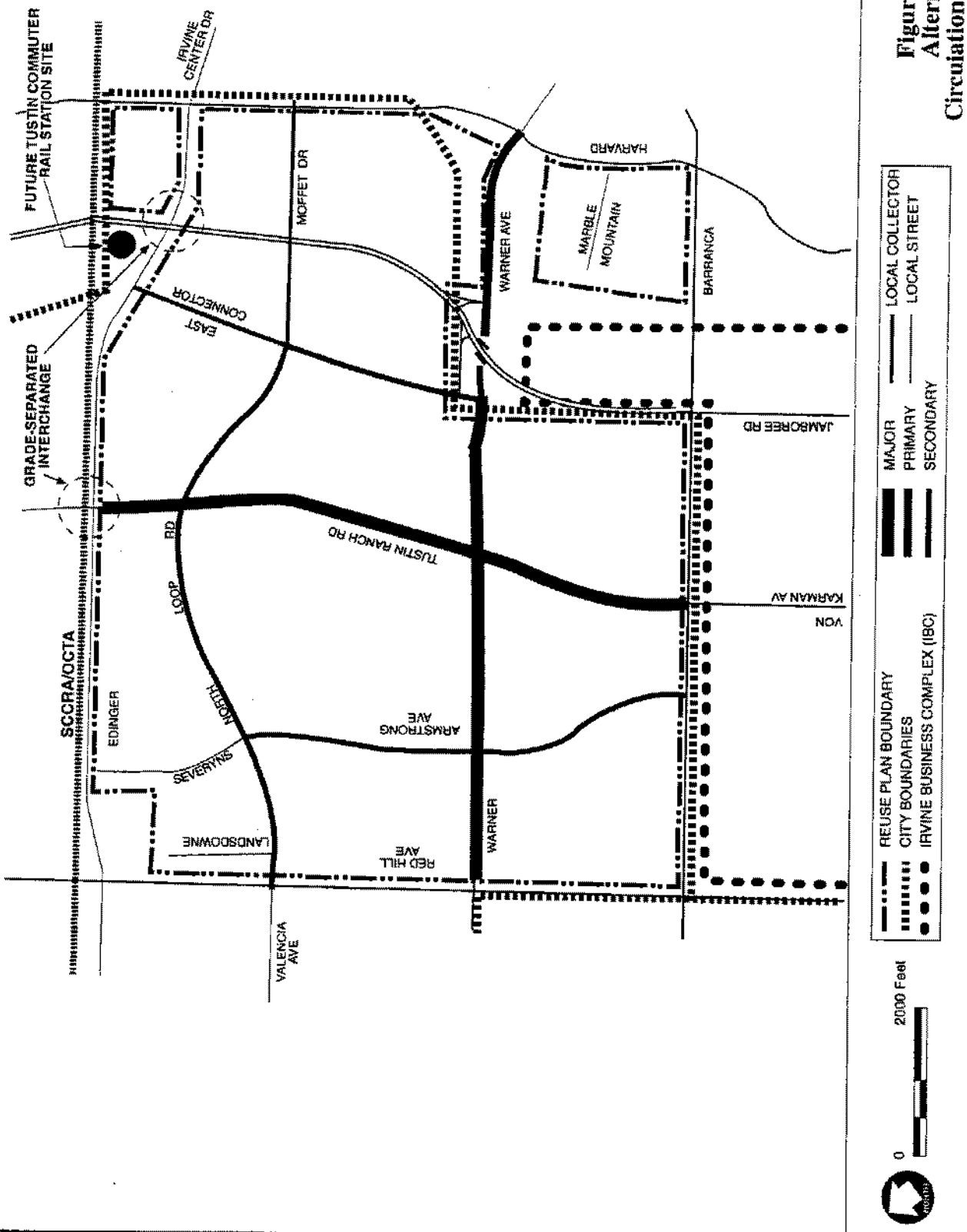


Figure 4.12-6
Alternative 2
Circulation System

Trip Distribution

The distribution of traffic generated by Alternative 2 is shown in Figure 4.12-7. The trip distribution was determined by using the same traffic model described under Alternative 1.

Impact Analysis

Alternative 2 Plus Existing

"Stand-alone" impacts were determined with the same methodology and assumptions as described under Alternative 1. Tables 4.12-12 and 4.12-13 list the arterial intersections and freeway ramp intersections where significant impacts would occur under the existing plus Alternative 2 scenario. The locations are shown in Figure 4.12-8. One location in the City of Irvine (Jeffrey Road and I-405 northbound ramps) would be improved from an unacceptable level during AM peak hour baseline conditions to an acceptable level (ICU 0.90 or below) with implementation of this alternative.

Interim Development - 2005

An interim level of development on the site has been analyzed in the year 2005 time frame. The purpose of this 2005 analysis is to determine the type of transportation improvements that would be needed to support phased development of the site.

ADT volumes, a complete listing of ICU values for arterial intersections and freeway ramp intersections, and peak hour mid-block link volume data for this analysis are included in Appendix F. Tables 4.12-14 and 4.12-14a lists the arterial and freeway ramp intersections where significant impacts would occur under the interim development scenario. The locations are shown in Figure 4.12-9. The analysis also indicates that the redistribution of traffic would result in the improvement of one intersection, Harvard Avenue and Michelson Drive, which would be improved from an unacceptable level during AM peak hour baseline conditions to an acceptable level (ICU 0.90 or below) under this alternative. There would be no significant impacts at freeway ramp intersections. There would be no significant impacts for mid-block lane capacities.

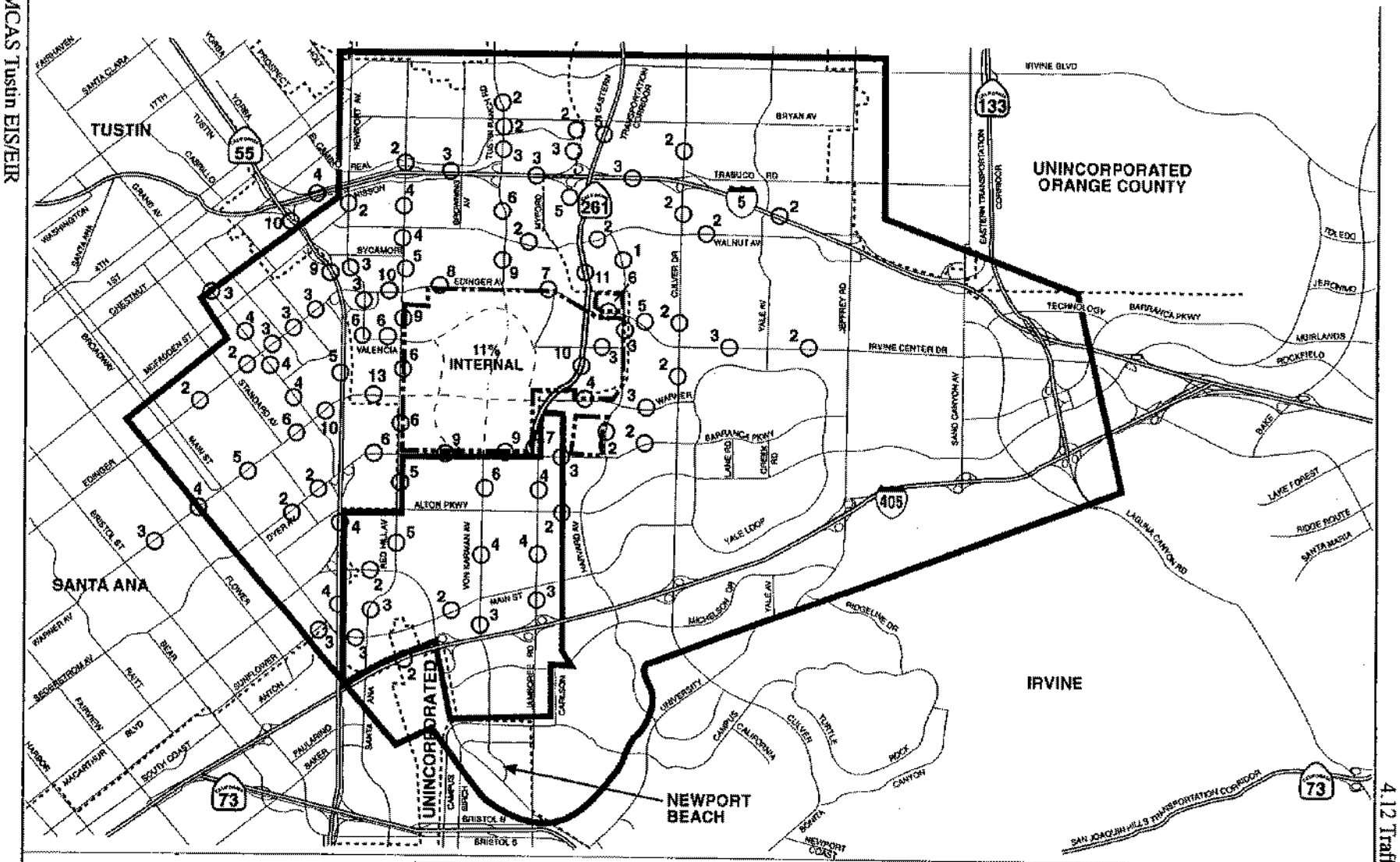


Figure 4.12-7
Alternative 2
2020 Trip Distribution

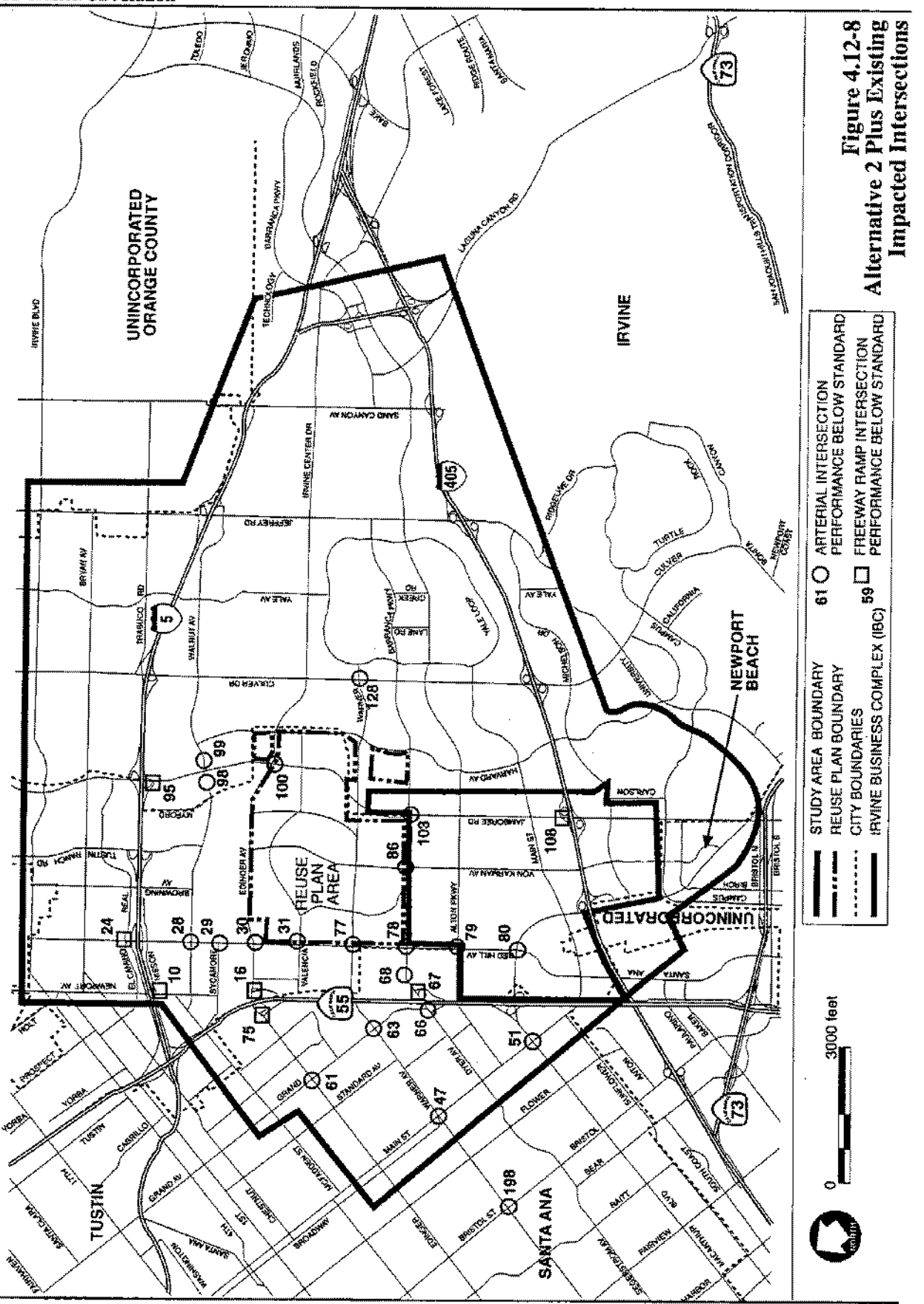


Figure 4.12-8
Alternative 2 Plus Existing Impacted Intersections

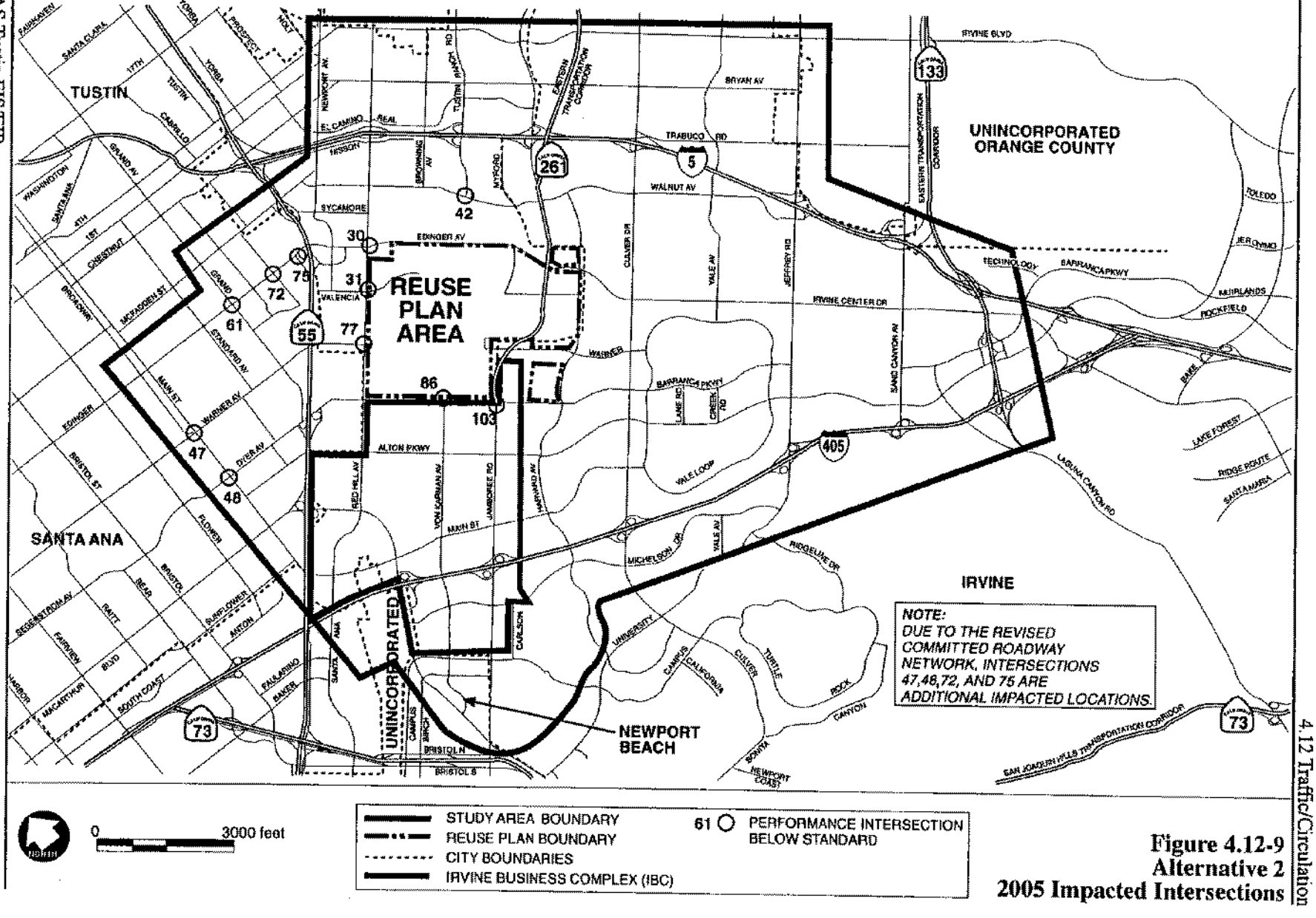


Figure 4.12-9
Alternative 2
2005 Impacted Intersections

Table 4.12-12
Alternative 2 Plns Existing Impacted Intersections Summary

Location	Without Reuse		With Alt. 2		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
28. Red Hill & Walnut[3]	.97	.89	1.27	1.14	.30	.25	c	p
29. Red Hill & Sycamore[3]	.94	.80	1.40	1.06	.46	.26	c	p
30. Red Hill & Edinger[3]	.83	1.00	1.19	1.70	.36	.70	p	c
31. Red Hill & Valencia[3]	.71	.68	1.13	1.37	.42	.69	p	p
100. Jamboree & Edinger[3]	.79	.82	.86	1.20	.07	.38	–	p
Tustin/Santa Ana								
77. Red Hill & Warner[3]	.63	.59	1.32	2.05	.69	1.46	p	p
Tustin/Irvine/Santa Ana								
78. Red Hill & Dyer/Barranca[1, 3, 4]	.83	.75	1.14	1.02	.31	.27	[4]	[4]
Tustin/Irvine								
86. Von Karman & Barranca[1]	.57	.79	1.26	1.08	.69	.29	p	p
103. Jamboree & Barranca[1, 3]	.78	.84	.94	1.04	.16	.20	p	p
Santa Ana								
47. Main & Warner	.76	.88	.88	1.02	.12	.14	–	–
51. Main & MacArthur	.66	.90	.66	.93	–	.03	–	–
61. Grand & Edinger[3]	.71	.88	.75	.98	.04	.10	–	–
63. Grand & Warner[3]	.54	.75	.93	1.18	.39	.43	p	–
66. Grand & Dyer[3]	.62	.82	.79	.97	.17	.15	–	–
68. Pullman & Dyer[3]	.48	.73	.77	1.04	.29	.31	–	–
198. Bristol & Warner	.85	.91	.92	.92	.07	.01	p	–
Irvine								
80. Red Hill & MacArthur[1]	.78	1.01	.98	1.19	.20	.18	–	c
98. Jamboree (Southbound) & Walnut	.93	.60	1.17	.78	.24	.18	c	–
99. Jamboree (Northbound) & Walnut	.37	.80	.41	1.00	.04	.20	–	p
128. Culver & Warner	.74	.67	.75	.94	.01	.27	–	p
Irvine/Santa Ana								
79. Red Hill & Alton[1]	.47	.84	.49	.92	.02	.08	–	p

p - project causes deficiency
c - project contributes to deficiency
(1) IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
(2) CMP monitored intersection
(3) TSIA intersection
(4) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-13
Alternative 2 Plus Existing Freeway Ramp Intersection Impact Summary

Location	Without Reuse		With Alt. 2		Difference		Impacts	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
10. Newport & I-5 Southbound/Nisson[3]	.76	.78	1.01	.83	.25	.05	p	–
16. SR-55 Northbound Ramps & Edinger[2, 3]	.66	.68	1.04	1.39	.38	.71	p	p
24. Red Hill & I-5 Northbound Ramps[3]	.74	.83	.77	1.00	.03	.17	–	p
Santa Ana								
67. SR-55 Northbound Ramps & Dyer[3]	.70	.83	.95	1.46	.25	.63	–	p
75. SR-55 Southbound Ramps & Edinger[2, 3]	.77	.98	.77	1.05	–	.07	–	c
Irvine								
95. Jamboree & I-5 Southbound Ramps[2]	.93	.71	1.14	.83	.21	.12	c	–
108. Jamboree & I-405 Northbound Ramps[2]	1.21	1.06	1.32	1.12	.11	.06	c	c

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
[2] CMP monitored intersection
[3] TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-14
Alternative 2 2005 Impacted Arterial Intersections Summary

Location	Baseline		With Alt. 2		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
30. Red Hill & Edinger[2]	.68	.67	.93	.98	.25	.31	p	p
31. Red Hill & Valencia[2]	.47	.57	1.09	1.22	.62	.65	p	p
42. Tustin Ranch & Walnut	.82	1.14	.81	1.19	–	.05	–	c
Tustin/Santa Ana								
77. Red Hill & Warner[2]	.60	.51	1.19	1.06	.59	.55	p	p
Tustin/Irvine								
86. Von Karman & Barranca[1]	.63	.95	.63	1.13	–	.18	–	c
103. Jamboree & Barranca[1, 2]	.76	.97	.86	1.11	.10	.14	–	[3]
Santa Ana								
47. Main & Warner	.74	1.05	.81	1.10	.07	.05	–	c
48. Main & Dyer	.79	1.03	.78	1.07	–	.04	–	c
61. Grand & Edinger[2]	.82	.90	.90	.95	.08	.05	–	p
72. Ritchey & Edinger[2]	.52	.87	.57	.94	.05	.07	–	p

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
[2] TSIA intersection
[3] Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-14a
Alternative 2 2005 Impacted Freeway Ramp Intersections Summary

Location	Without Reuse		With Alt. 1		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Santa Ana								
75. SR-55 SB Ramps & Edinger[1]	.88	1.19	.90	1.27	.02	.10	-	c

c - project contributes to deficiency
(1) CMP monitored and TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Buildout - 2020

The analysis of traffic impacts for 2020 uses the trip generation and reuse plan area roadway system for the fully developed Alternative 2. ADT volumes, a complete listing of ICU values for intersections and freeway ramp intersections, and peak hour mid-block link volume data for this analysis are included in Appendix F. Tables 4.12-15 and 4.12-16 list the arterial intersections and freeway ramp intersections where significant impacts would occur under the full buildout scenario. The locations are shown in Figure 4.12-10. The analysis indicates that there would be two intersections improved from unacceptable to acceptable operations when compared with the 2020 baseline.

Public Transit Impacts

The development proposed for Alternative 2 would result in the same impacts to public transit as those described for Alternative 1.

Pedestrian and Bicycle Impacts

Impacts to pedestrian and bicycle traffic would be similar to those described for Alternative 1; no specific significant bicycle impacts have been identified, and added bike trails would provide an overall benefit to the County bike trail system.

No pedestrian impacts of this alternative have been identified.

Construction Impacts

Traffic impacts due to construction would be similar to those described under Alternative 1.

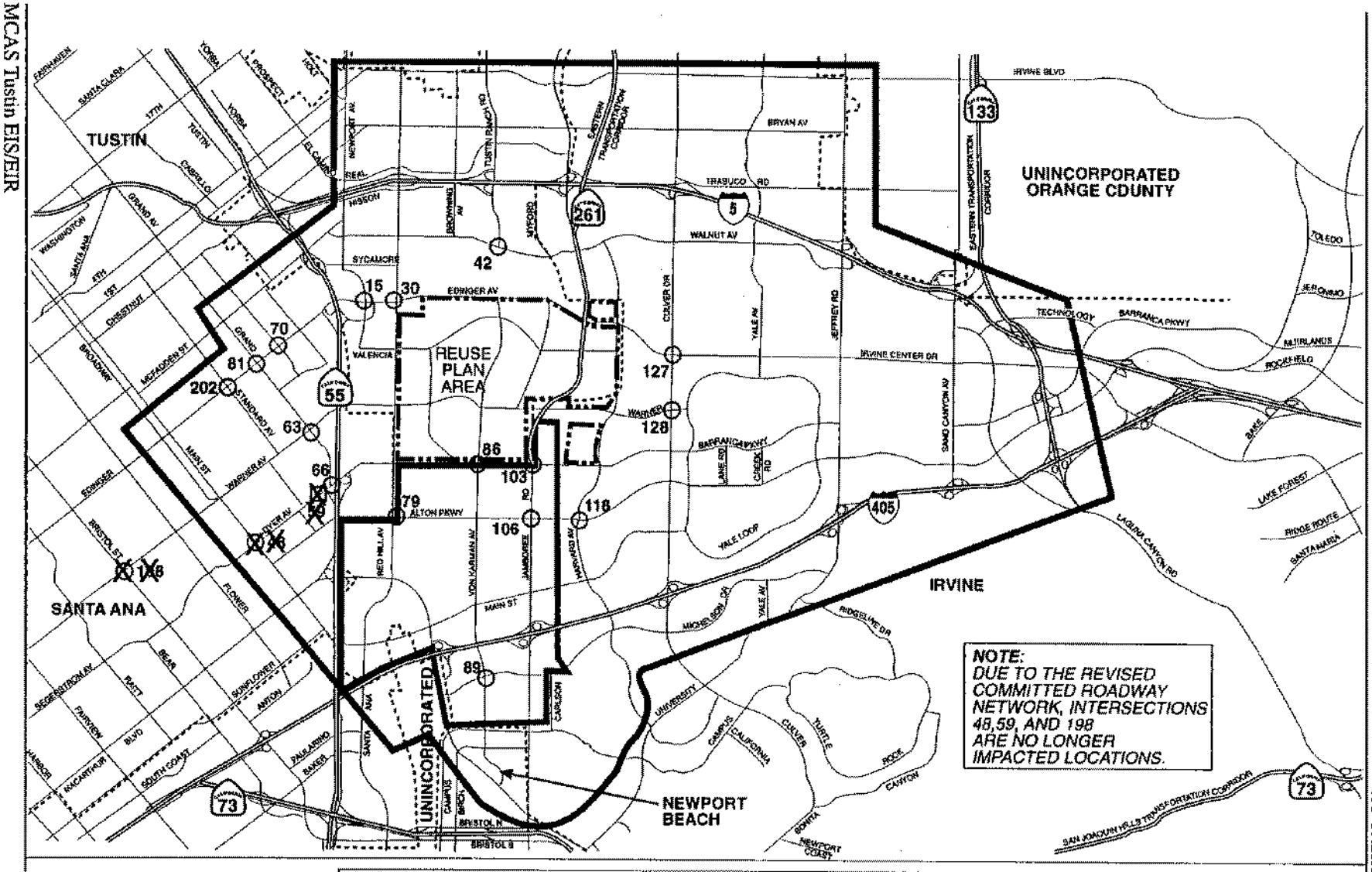


Figure 4.12-10
Alternative 2
2020 Impacted Intersections

9902 MCAS Tustin EIS/EIR Figures\Fig 4.12-10 2020 Impacted Inter 6/7/99

Table 4.12-15
Alternative 2 2020 Impacted Arterial Intersections Summary

Location		Without Reuse		With Alt. 2		Difference		Impact	
		AM	PM	AM	PM	AM	PM	AM	PM
Tustin									
15.	Newport & Edinger[3]	.85	.87	.90	.96	.05	.09	–	p
30.	Red Hill & Edinger[3]	.75	.88	.84	.92	.09	.04	–	p
42.	Tustin Ranch & Walnut	.84	.89	1.15	1.08	.31	.19	p	p
Tustin/Irvine									
86.	Von Karman & Barranca[1]	.61	.77	.91	1.07	.30	.30	–	p
103.	Jamboree & Barranca[1, 3]	.83	1.15	1.00	1.26	.17	.11	–	[4]
Santa Ana									
~~48.~~	~~Main & Dyer~~	~~.81~~	~~1.10~~	~~.76~~	~~1.15~~	~~–~~	~~.05~~	~~–~~	~~c~~
61.	Grand & Edinger[3]	~~.98~~ .75	~~1.05~~ .84	~~1.02~~ .80	~~1.18~~ .98	~~.04~~ .05	~~.13~~ .14	c –	c p
63.	Grand & Warner[3]	~~.61~~ .57	~~.90~~ .71	~~.82~~ .78	~~1.09~~ 1.00	.21	~~.19~~ .29	–	p
66.	Grand & Dyer[3]	~~.73~~ .66	~~.97~~ .94	~~.73~~ .72	~~1.10~~ 1.04	– .06	~~.13~~ .10	–	c
70.	Lyon & Edinger[3]	.86	.97	.88	1.08	.02	.11	–	c
~~198.~~	~~Bristol & Warner~~	~~.88~~	~~1.01~~	~~.92~~	~~1.01~~	~~.04~~	–	p	–
202.	Standard & Edinger	.80	.95	.89	1.01	.09	.06	–	p
Irvine									
81.	Red Hill & Main[1]	.70	.99	.74	1.17	.04	.18	–	p
89.	Von Karman & Michelson[1]	.68	1.07	.89	1.16	.21	.09	–	c
106.	Jamboree & Alton[1]	.94	1.01	.92	1.07	–	.06	–	p
118.	Harvard & Alton	.85	.89	.93	.85	.08	–	p	–
127.	Culver & Irvine Center	.90	.88	.86	.92	-	.04	-	0
128.	Culver & Warner	.79	.79	.83	.95	.04	.16	–	p
Irvine/Santa Ana									
79.	Red Hill & Alton[1]	.68	1.01	.70	1.08	.02	.07	–	p

p - project causes deficiency

c - project contributes to deficiency

[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs

[2] Location identified in City of Irvine as an ATMS intersection which discounts the AM and PM peak hour ICUs by .05; therefore there is no project impact at this location.

[3] TSIA intersection

[4] Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-16
Alternative 2 2020 Freeway Ramp Impact Summary

Location	Without Reuse		With Alt. 2		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Santa Ana								
~~59. Hotel Terrace/SR-55 & Dyer[1]~~	~~.68~~	~~.87~~	~~.76~~	~~.96~~	~~.08~~	~~.09~~	–	p
67. SR-55 Northbound Ramps & Dyer[1]	~~.76~~ .68	~~.69~~ .61	.81	.92	~~.05~~ .13	~~.23~~ .31	–	p

p - project causes deficiency
c - project contributes to deficiency
[1] TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Mitigation Measures

No mitigation would be necessary for public transit, or pedestrian or bicycle movement as there would be no significant impact. The following mitigation measures would avoid significant traffic impacts or minimize significant at most intersections in the study area. In the interim year (2005), all intersections would be fully mitigated. At buildout (2020), after mitigation the following ~~three~~ five intersections would not be fully mitigated: Tustin Ranch Road and Walnut Avenue, Von Karman Avenue and Barranca Parkway, ~~and~~ Jamboree Road and Barranca Parkway, Grand Avenue and Edinger Avenue, and Grand Avenue and Warner Avenue.

Mitigation measures for the impacts of Alternative 2 would add lanes or change lane movements at existing intersections to increase capacity and would implement ATMS improvements to increase operating efficiency. At individual intersections, either one or both types of improvements may be specified. The addition of lanes and the modification of lane movements may be accomplished by restriping or by construction. As noted above, an ICU reduction of .05 is taken for ATMS at IBC locations and at locations in Irvine identified as ATMS intersections. In addition, year 2005 mitigation measures would provide new accesses into the reuse area from Edinger Avenue, and from Warner Avenue west of Jamboree Road. It should be noted that mitigation for intersection #86 (Von Karman Avenue and Barranca Parkway) is an interim improvement only and is not necessary for 2020. If subsequent studies demonstrate that trips would not be generated or impacts would be different than those projected in this EIS/EIR, the mitigation measures may be modified, subject to the approval of the City of Tustin and any other affected jurisdictions, provided that mitigation to the same ~~ICU value~~ level of service would be provided.

~~No specific mitigation measures are warranted for the stand-alone analysis because of the hypothetical nature of that evaluation. That is, immediate full buildout with no change of external conditions is not a feasible development scenario.~~

Construction

Mitigation measure T/C-1, as stated for Alternative 1, shall be implemented for Alternative 2.

~~Interim Development = 2005~~

T/C-~~8~~10 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall ensure that the arterial intersection improvements required in 2005 and 2020 and as indicated in Tables 4.12-17 and 4.12-18 are implemented for their respective jurisdictions according to the cumulative ADT thresholds identified in each table and according to the fair share basis noted.

~~Buildout = 2020~~

~~T/C-9 The City of Tustin and the City of Irvine, as applicable, shall ensure that the arterial intersection improvements indicated in Table 4.12-18 are implemented for their respective jurisdictions.~~

T/C-~~10~~11 The City of Tustin and the City of Irvine, as applicable (for that portioo of the reuse plan area within Irvine), shall contribute, on a fair share basis, to improvements to freeway ramp intersections as listed in Tables 4.12-17a and 4.12-19. The method of implementing ~~nature of~~ the improvements, e.g., restriping, ramp widening, shall ~~would~~ be based on ~~the subject of~~ special design studies, in association with Caltrans.

T/C-12 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall ensure that all on-site circulation system improvements for the reuse plan area assumed in the 2005 and 2020 traffic analysis and as shown in Table 4.12-19a are implemented according to the cumulative ADT thresholds identified in the table.

Table 4.12-17
Alternative 2 2005 Mitigation Lanes for Impacted Intersections

Location			Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[4] Percent
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Tustin																				
30.	Red Hill & Edinger [1, 2]	Base	2	3	1	2	3	1	2	3	1	2	3	1	p	p	ma	ma	86,000	100
		Mit.	2	3	1	2	3	1	2	3	1	2	3	1						
31.	Red Hill & Valencia [2, 4]	Base	2	3	1	1	2	1	2	3	1	1	2	1	p	p	ma	ma	62,000	100
		Mit.	2	3	1	2	2	1	2	3	1	1	2	1						
42.	Tustin Ranch & Walnut	Base	1.5	–	1.5	–	2	d	–	–	–	1	2	–	–	c	[illegible]	mp	51,000	11
		Mit.	1.5	–	1.5	–	2	d	–	–	–	2	2	–						
Tustin/Santa Ana																				
77.	Red Hill & Warner	Base	1	3	–	1	1	1	2	3	1	2	1	1	p	p	ma	ma	63,000	100
		Mit.	2	3	–	1	1	2	2	3	1	2	2	1						
Tustin/Irvine																				
86.	Von Karman & Barranca[3]	Base	–	–	–	2	3	–	2	–	1	–	3	d	–	c	[illegible]	ma	71,000	100
		Mit.	–	–	–	2	3	–	2	–	2	–	3	d						
103.	Jamboree & Barranca[2]	Base	2	4	f	2	3	f	2	4	f	2.5	2.5	1	–	[illegible]	[illegible]	ma	[illegible]	[illegible]
		Mit.	2	4	f	2	3	f	2	4	f	2.5	2.5	1						
Santa Ana																				
47.	Main & Warner	Base	2	3	[illegible]	1	2	[illegible]	2	3	[illegible]	1	2	1	[illegible]	c	[illegible]	mp	51,000	23
		Mit.	2	3	[illegible]	1	3	[illegible]	2	3	[illegible]	1	2	1						
48.	Main & Dyer	Base	1	3	[illegible]	1	2	[illegible]	1	2	1	1	2	1	[illegible]	c	[illegible]	mp	60,000	21
		Mit.	2	3	[illegible]	1	2	[illegible]	1	2	1	1	2	1						

Table 4.12-17. Continued

Location			Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[6] Percent
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
61.	Grand & Edinger[2]	Base	1	3	–	1	3	–	1	3	–	1	3	–	–	p	[illegible]	ma	32,000	100
		Mit.	1	3	–	1	3	–	2	3	–1	21	3	–						
72.	Ritchey & Edinger	Base	1	2	[illegible]	1	3	[illegible]	1	1	[illegible]	1	3	[illegible]	–	p	[illegible]	ma	67,000	100
		Mit.	1	2	[illegible]	1	3	[illegible]	1	2	[illegible]	1	3	[illegible]						

Base - Intersection lanes without mitigation, Mit. - Intersection lanes with mitigation
ATMS - Advanced Transportation Management System
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation).
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - Project contributes to deficiency
ma - Mitigated to an adequate level of service; mp - Project portion of impact mitigated, LOS remains less than adequate
(1) Additional access on Edinger Avenue
(2) TSIA intersection
(3) Additional access from Warner Avenue west of Jamboree Road
(4) Additional access on Edinger Avenue and ATMS
(5) Interim improvement only, not necessary for 2020
(6) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer~~ mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.
(7) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

Table 4.12-17a
Alternative 2 2005 Mitigation for Impacted Freeway Ramp Intersection

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[3] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Santa Ana																			
75. SR-55 SB Ramps & Bdlnger [1][2]	Base	1	1	—	1	2	—	1.5	5	f	1	2	f	—	p	—	mp	32,000	32
	Mit.	1	1	—	1	2	—	1.5	5	f	1	3	f						

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation)
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - project contributes to deficiency;
mg - Mitigated to an adequate level of service; mp - Project portion of impact mitigated, LOS remains less than adequate

[1] CMP monitored intersection

[2] TSIA intersection

[3] Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.

Table 4.12-18
Alternative 2 2020 Mitigation Lanes for Impacted Arterial Intersections

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Tustin																			
15. Newport & Edinger[2, 4]	Base	2	2.5	1.5	1	3	f	2	3	d	2	3	1	–	p	[illegible]	ma	179,000	100
	Mit.	2	2.5	1.5	2	3	f	2	3	d	2	3	1						
30. Red Hill & Edinger[3, 4]	Base	2	3	1	2	3	1	2	3	1	2	3	1	–	p	[illegible]	ma	228,000	100
	Mit.	2	3	1	2	3	1	2	3	1	2	3	1						
42. Tustin Ranch & Walnut[2]	Base	2	3	d	1	2	1	2	3	d	1	2	1	p	p	nm	nm	126,000	100
	Mit.	2	3	d	2	2	1	2	3	d	2	2	1						
Tustin/Irvine																			
86. Von Karman & Barranca[3]	Base	2	3	2	2	4	1	2	3	1	2	4	1	–	p	[illegible]	nm	263,000	100
	Mit.	2	3	2	2	4	1	2	3	1	2	4	1						
103. Jamboree & Barranca[3, 4]	Base	2	4	f	2	3	f	2	4	f	2.5	2.5	1	–	c	[illegible]	nm	137,000	[6]
	Mit.	2	4	f	2	3	f	2	4	f	2.5	2.5	1						
Santa Ana																			
~~48. Main & Dyer~~	~~Base~~	~~2~~	~~3~~	~~–~~	~~+~~	~~3~~	~~–~~	~~2~~	~~3~~	~~–~~	~~+~~	~~3~~	~~+~~	–	e				
	~~Mit.~~	~~2~~	~~3~~	~~–~~	~~2~~	~~3~~	~~–~~	~~2~~	~~3~~	~~–~~	~~+~~	~~3~~	~~+~~						
61. Grand & Edinger[4]	Base	2	3	–1	+2	3	–1	+2	3	1	+2	3	–1	c	c	[illegible]	nm	188,000	100
	Mit.	2	3	–1	~~2~~2	~~3~~4	~~+~~–	~~2~~2	~~3~~4	~~+~~–	+2	3	–1						
63. Grand & Warner[4]	Base	2	3	–1	2	~~2~~3	1	+2	3	–1	2	3	1	–	p	[illegible]	nm	219,000	100
	Mit.	2	3	+1	2	~~3~~3	~~2~~1	~~2~~2	~~3~~4	–	2	3	1						
66. Grand & Dyer[4]	Base	2	–	1	–	~~2~~3	1	–	–	–	+2	3	–	–	c	[illegible]	ma	140,000	29
	Mit.	1.5	–	1.5	–	~~2~~3	1	–	–	–	+2	3	–						
70. Lyon & Edinger[4]	Base	1	1	1	1	3	1	1	1	2	1	3	–	–	c	[illegible]	ma	137,000	24
	Mit.	~~2~~1.5	+.5	1	1	3	1	+.5	+1.5	2	1	3	–1						
~~198. Bristol & Warner~~	~~Base~~	~~+~~	~~3~~	~~–~~	~~+~~	~~3~~	~~–~~	~~+~~	~~3~~	~~–~~	~~+~~	~~3~~	~~–~~	p	–				
	~~Mit.~~	~~2~~	~~3~~	~~–~~	~~+~~	~~3~~	~~–~~	~~2~~	~~3~~	~~–~~	~~+~~	~~3~~	~~–~~						
202. Standard & Edinger	Base	1	2	–	1	3	–	1	2	–	1	3	–	–	p	[illegible]	mp	161,000	17
	Mit.	1	2	–	1	3	1	1	2	–	1	3	–						
Irvine																			
81. Red Hill & Main	Base	1	3	d	2	3	d	2	3	f	1	3	d	–	p	[illegible]	ma	171,000	100
	Mit.	1	3	f	2	3	d	2	3	f	1	3	d						
89. Von Karman & Michelson	Base	1	2	d	1	2	f	1	2	1	1	2	d	–	c	[illegible]	ma	143,000	27
	Mit.	1	2	d	1	2	f	1	2	1	2	2	d						

Table 4.12-18. Continued

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
106. Jamboree & Alton	Base	2	4	d	2	3	d	2	4	1	2	3	d						
	Mit.	2	4	d	2	3	d	2	**5**	1	2	3	d	–	p	[5]	ma	241,000	100
118. Harvard & Alton	Base	1	2	f	2	3	d	1	2	d	2	3	1						
	Mit.	1	2	1	2	3	d	**2**	2	d	2	3	1	p	–	ma	[5]	228,000	100
128. Culver & Warner	Base	1	3	d	1	2	d	1	3	1	1	2	d						
	Mit.	1	3	d	1	2	d	**1**	3	1	**2**	2	d	–	p	[5]	ma	228,000	100
Irvine/Santa Ana																			
79. Red Hill & Alton	Base	1	3	d	2	1	1	1	3	d	1	2	1						
	Mit.	**2**	3	d	2	1	1	1	3	d	1	2	1	–	p	[5]	ma	222,000	100

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
ATMS - Advanced Transportation Management System
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation)
A .5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency.
c - Project contributes to deficiency.
ma - Mitigated to an adequate level of service; mp - Project portion of impact mitigated, LOS remains less than adequate; nm - Project impact not mitigated

(1) No lane changes; ATMS measures
(2) Lane changes and ATMS measures
(3) No identifiable mitigation measures
(4) TSIA intersection
(5) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer~~ mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.
(6) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

Table 4.12-19
Alternative 2 2020 Mitigation Lanes for Impacted Freeway Ramp Intersections

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[2] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Santa Ana																			
~~59. Hotel Terrace/ SR-55 & Dyer[1]~~	~~Base~~	~~.5~~	~~1.5~~	~~1~~	~~2~~	~~3~~	~~1~~	~~1.5~~	~~.5~~	~~2~~	~~1~~	~~3~~	~~-~~	~~-~~	~~p~~				
	~~Mit.~~	~~.5~~	~~1.5~~	~~1~~	~~2~~	~~3~~	~~1~~	~~1.5~~	~~.5~~	~~2~~	~~1~~	~~3~~	~~1~~						
67. SR-55 Northbound Ramps & Dyer[1]	Base	–	–	–	–	~~3~~4	–	1.5	–	1.5	–	3	+ f	–	p	–	ma	263,000	100
	Mit.	–	–	–	–	~~3~~ 2.5	f 1.5	1.5	–	1.5	–	3	+ f						

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
a~~old~~ - notation indicates lane change from base scenario (without mitigation)
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency.
ma - Mitigated to an adequate level of service

(1) TSIA intersection

(2) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer.~~ mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.

Table 4.12-19a
Alternative 2 - On-site ADT Development Thresholds

ADT (Cumulative)		Roads Added
27,000	(27,000)	Edinger Avenue - along project frontage between Red Hill Avenue and Jamboree Road Landsdowne Road North Loop Road - Red Hill Avenue to just east of Severyns Road (Build 3 lanes only)
81,200	(108,200)	East Connector Road Marble Mountain Road Moffett Drive North Loop Road - Red Hill Avenue to just east of Severyns Road (Final Buildout) North Loop Road - East Connector Road to Moffett Drive (Build 3 lanes only) Red Hill Avenue/Carnegie Avenue Intersection (East Leg) Red Hill Avenue/Warner Avenue Intersection (East Leg) Severyns Road
26,500	(134,700)	Armstrong Avenue - North Loop Road to Barranca Parkway North Loop Road - just east of Severyns Road to East Connector Road North Loop Road - East Connector to Moffett Drive (Final Buildout) East Connector Road - Moffett Drive to Warner Avenue Tustin Ranch Road - Edinger Avenue to North Loop Road (6 lanes) Tustin Ranch Road - Warner Avenue to Barranca Parkway (Build 4 lanes only) Warner Avenue - Red Hill Avenue to Jamboree Road (Build 4 lanes only)
38,900	(173,600)	Tustin Ranch Road - North Loop Road to Warner Avenue (Build 4 lanes only)
94,500	(268,100)	Widen Tustin Ranch Road to 6 lanes (Final Buildout) Widen Warner Avenue to 6 lanes (Final Buildout)

~~Interim Development - 2005 and Buildout - 2020~~

Mitigation measures T/C-~~5~~4 through T/C-~~9~~7, as stated for Alternative 1, shall also be implemented for Alternative 2, ~~using the tables~~ appropriate for Alternative 2.

4.12.5 Alternative 3

Traffic Impacts

Traffic Analysis Methodology

Traffic impacts for Alternative 3 were analyzed using the same methodology and parameters used for Alternative 1.

Trip Generation

The land use areas used for trip generation calculations under this alternative are shown in Figure 2-3. The forecast trip generation for Alternative 3 is 114,534 ADT at the interim stage of development in 2005, and 294,887 ADT at buildout in 2020. The detailed trip generation analysis is include in Appendix F of this EIS/EIR. A summary of the trip generation for Alternative 3 is shown in Table 4.12-20.

Table 4.12-20
Alternative 3 Land Use and Trip Generation Snmmary

Land Use Type	Trip Source[1]	Interim Development - 2005			Project Buildout - 2020		
		Units		ADT	Units		ADT
By Land Use							
LDR (1-7 DU/Acre)	1	1,135.00	DU	10,862	1,460.00	DU	13,972
MDR (8-15 DU/Acre)	2	220.00	DU	1,760	1,235.00	DU	9,880
HDR (16-25 DU/Acre)	1	–		–	1,645.00	DU	10,906
Hotel	1	–		–	500.00	Room	4,115
Community Commercial	1	161.61	TSF	11,017	600.05	TSF	40,904
Shopping Center	1	896.27	TSF	41,823	3,525.19	TSF	132,596
General Office	1	63.29	TSF	840	177.08	TSF	2,349
Office Park	1	875.55	TSF	7,173	1,342.06	TSF	10,994
Military (Office)	1	194.84	TSF	2,585	327.79	TSF	4,349
Light Industrial/R&D	1				101.06	TSF	820
Industrial Park	1	756.74	TSF	6,199	2,507.49	TSF	20,788
Park	2	51.30	Acre	257	51.30	Acre	257
Golf Course	2	186.90	Acre	1,495	186.90	Acre	1495
Community Facility	1	1,220.95	TSF	30,523	1,658.51	TSF	41,462
Total				**114,534**			**294,887**
By City							
Tustin				111,338			288,187
Irvine				3,196			6,700

LDR - low density residential; MDR - medium density residential; HDR - high density residential;
R&D - research and development; TSF - thousand square feet
See Table 2-4 of Appendix F for breakdown by land use within each city.
[1] Trip generation rate sources: 1 - ITE 1997; 2 - SANDAG 1996

Reuse Plan Area Roadway Network

The proposed roadway network for Alternative 3 is shown in Figure 4.12-11. The roadway system would be oriented around a central area. A new road called North/South Loop Road would create this central area and would provide direct access to Valencia Avenue, Moffett Drive, Warner Avenue, Von Karman Avenue, Tustin Ranch Road, and Edinger Avenue via two connector roads. Armstrong Avenue would be extended to Valencia Avenue. Warner Avenue would be made continuous through the reuse plan area. Moffett Drive would be extended to South Loop Road. Tustin Ranch Road would be completed to Von Karman Avenue. Right-of-way and design improvements would also be made to Red Hill Avenue, Barranca Parkway, Harvard Avenue, and Edinger Avenue. Other on-base streets (i.e., Landsdowne Severyns, Marble Mountain, etc.) would connect to the arterial street network and be oriented to efficiently serve neighborhoods and districts with the reuse plan area. Amendments to the County MPAH would be made for the on-site roadways classified a Major, Primary, or Secondary Arterial.

Trip Distribution

The distribution of traffic generated by Alternative 3 is shown in Figure 4.12-12. The trip distribution was determined by using the same traffic model described under Alternative 1.

Impact Analysis

Alternative 3 Plus Existing

"Stand-alone" impacts were determined with the same methodology and assumptions as described under Alternative 1. Tables 4.12-21 and 4.12-22 list the arterial intersections and freeway ramp intersections where significant impacts would occur under the existing plus Alternative 3 scenario. The locations are shown in Figure 4.12-13. One location in the City of Irvine (Jeffrey Road and I-405 northbound ramps) would be improved from an unacceptable level during AM peak hour baseline conditions to an acceptable level (ICU 0.90 or below) with implementation of this alternative.

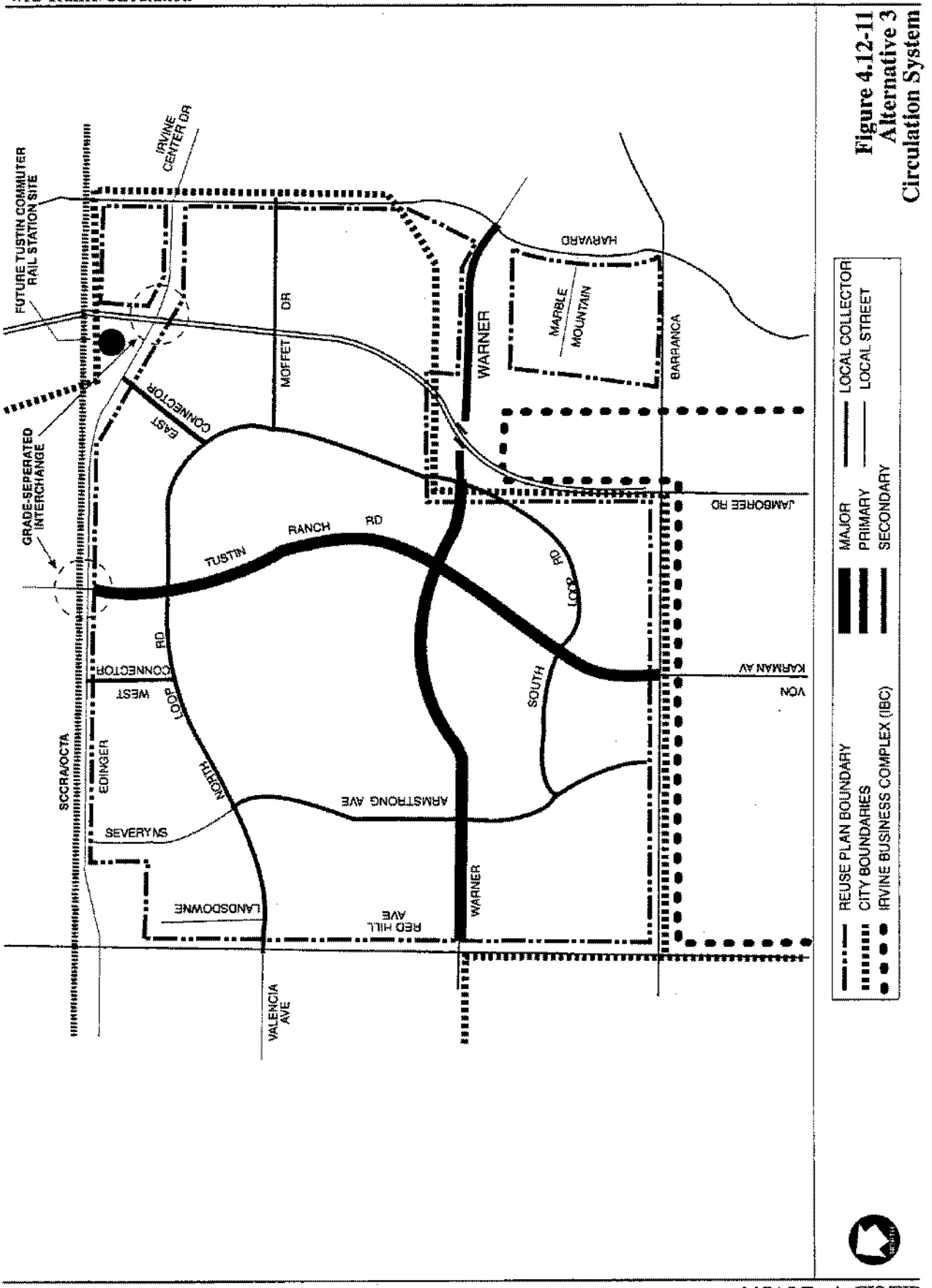


Figure 4.12-11
Alternative 3
Circulation System

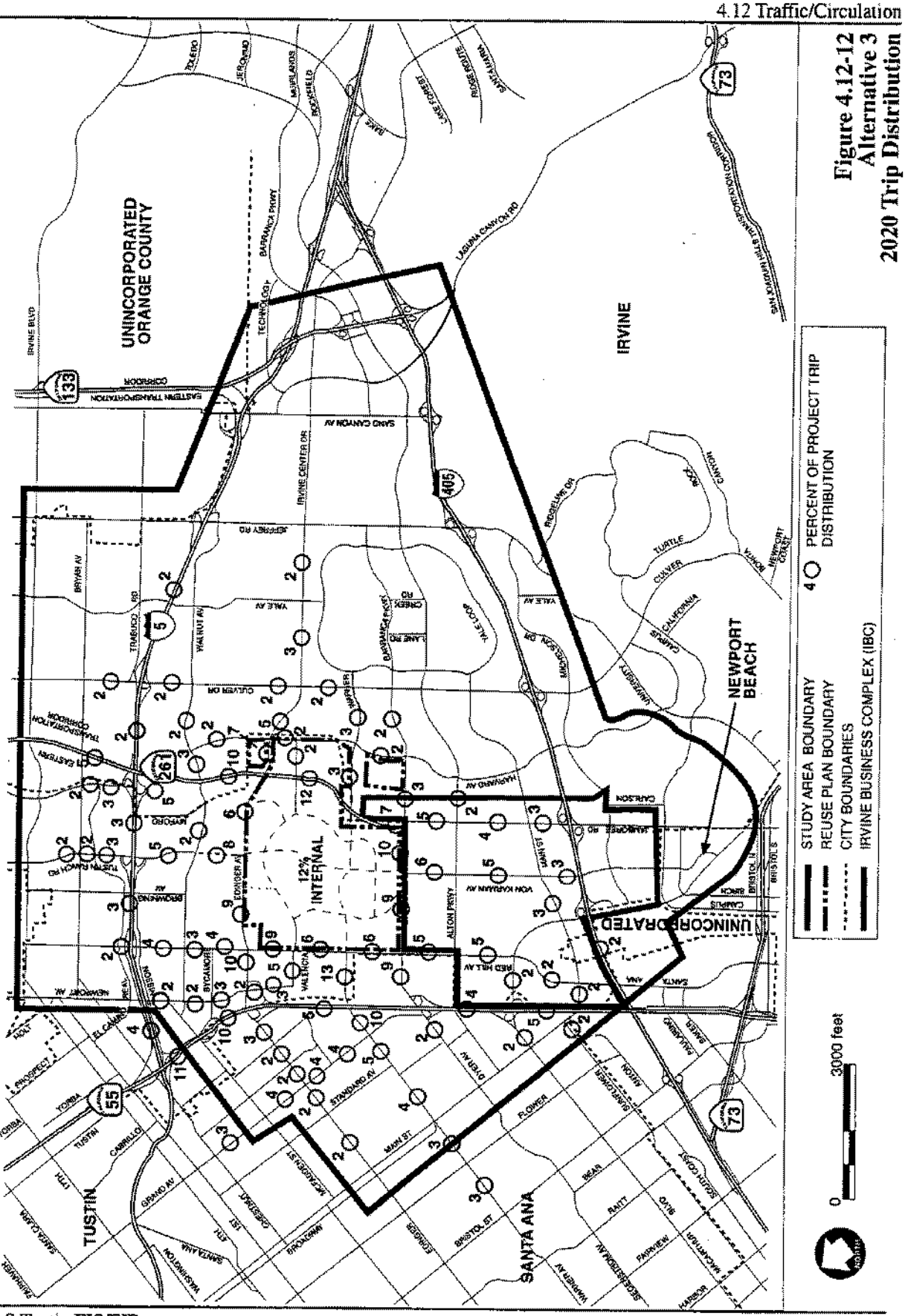


Figure 4.12-12
Alternative 3
2020 Trip Distribution

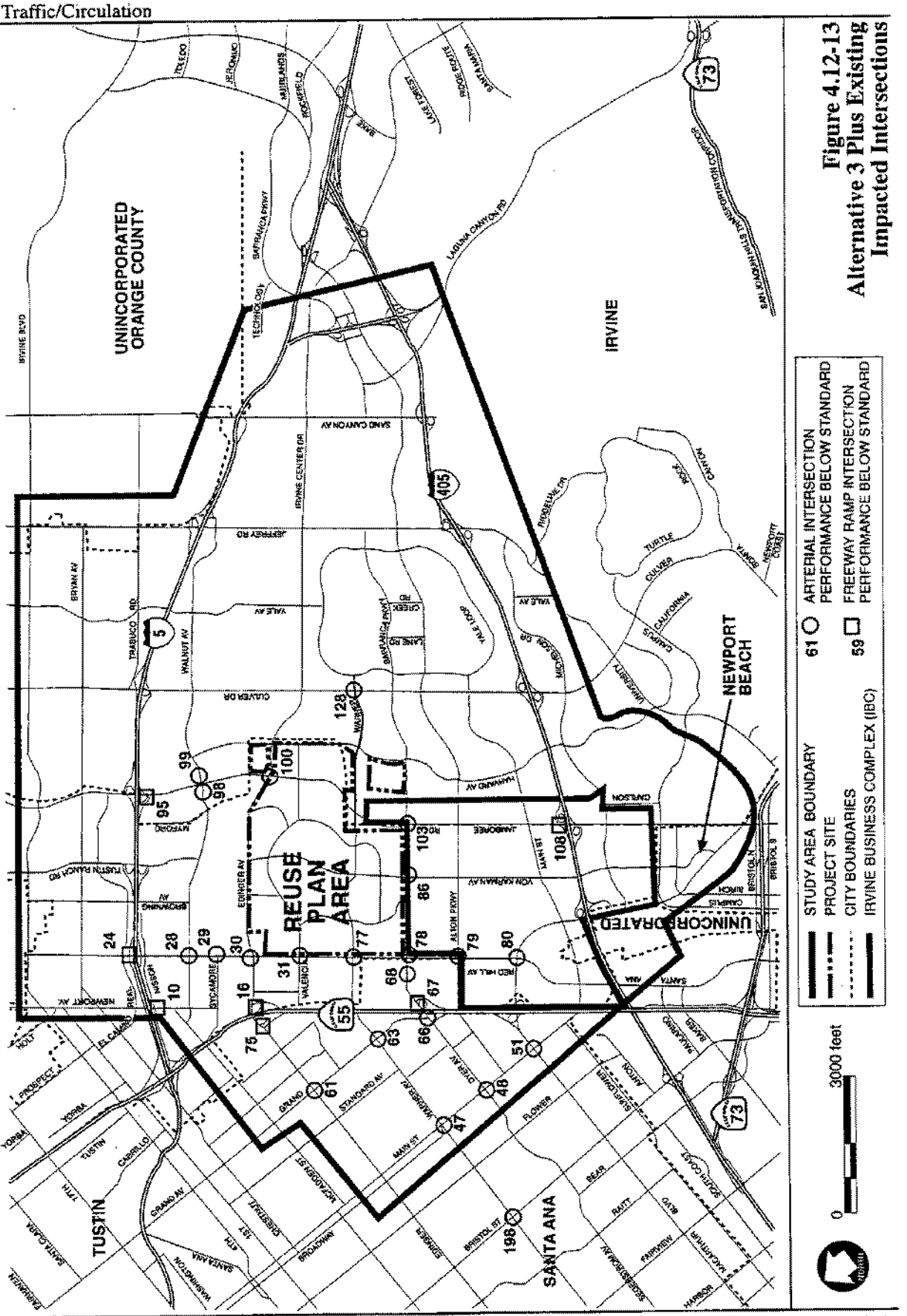


Figure 4.12-13
Alternative 3 Plus Existing
Impacted Intersections

Table 4.12-21
Alternative 3 Existing Plus Impacted Intersections Summary

Location	Baseline		With Alt. 3		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
28. Red Hill & Walnut[3]	.97	.89	1.26	1.14	.29	.25	c	p
29. Red Hill & Sycamore[3]	.94	.801	1.36	1.08	.42	.28	c	p
30. Red Hill & Edinger[3]	.83	1.00	1.15	1.68	.32	.68	p	c
31. Red Hill & Valencia[3]	.71	.68	1.03	1.20	.32	.52	p	p
100. Jamboree & Edinger[3]	.79	.82	.84	1.15	.05	.33	–	p
Tustin/Santa Ana								
77. Red Hill & Warner[3]	.63	.59	1.34	2.27	.71	1.68	p	p
Tustin/Irvine								
86. Von Karman & Barranca[1]	.57	.79	1.17	1.17	.60	.38	p	p
103. Jamboree & Barranca[1, 3]	.78	.84	.91	1.09	.13	.25	–	[4]
Tustin/Irvine/Santa Ana								
78. Red Hill & Dyer/Barranca[1, 3]	.83	.75	1.09	1.04	.26	.29	p	p
Santa Ana								
47. Main & Warner	.76	.88	.87	1.02	.11	.14	–	p
48. Main & Dyer	.64	.88	.67	.91	.03	.03	–	p
51. Main & MacArthur	.66	.90	.65	.94	–	.04	–	p
61. Grand & Edinger[3]	.71	.88	.76	.98	.05	.10	–	p
63. Grand & Warner[3]	.54	.75	.91	1.17	.37	.42	p	p
66. Grand & Dyer[3]	.62	.82	.75	1.01	.13	.19	–	p
68. Pullman & Dyer[3]	.48	.73	.73	1.11	.25	.38	–	p
198. Bristol & Warner	.85	.91	.92	.91	.07	–	p	–
Irvine								
80. Red Hill & MacArthur[1]	.78	1.01	.96	1.25	.18	.24	–	c
98. Jamboree (Southbound) & Walnut	.93	.60	1.14	.83	.21	.23	c	–
99. Jamboree (Northbound) & Walnut	.37	.80	.42	1.05	.05	.25	–	p
128. Culver & Warner	.74	.67	.76	.94	.02	.27	–	p
Irvine/Santa Ana								
79. Red Hill & Alton[1]	.47	.84	.48	.95	.01	.11	–	p

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
[2] CMP monitored intersection
[3] TSIA intersection
[4] Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90, E/0.91-1.00; F/≥1.00

Table 4.12-22
Alternative 3 Plus Existing Freeway Ramp Intersection Impact Summary

Location	Without Reuse		With Alt. 3		Difference		Impacts	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
10. Newport & I-5 Southbound/Nisson[3]	.76	.78	1.01	.83	.25	.05	p	–
16. SR-55 Northbound Ramps & Edinger[2, 3]	.66	.68	1.01	1.39	.35	.71	p	p
24. Red Hill & I-5 Northbound Ramps[3]	.74	.83	.79	.97	.05	.14	–	p
Santa Ana								
67. SR-55 Northbound Ramps & Dyer[3]	.70	.83	.92	1.52	.22	.69	–	p
75. SR-55 Southbound Ramps & Edinger[2, 3]	.77	.98	.79	1.08	–	.10	–	c
Irvine								
95. Jamboree & I-5 Southbound Ramps[2]	.93	.71	1.15	.85	.22	.14	c	–
108. Jamboree & I-405 Northbound Ramps[1,2]	1.21	1.06	1.30	1.14	.09	.08	c	c

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
[2] CMP monitored intersection
[3] TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Interim Development - 2005

An interim level of development on the site has been analyzed in the year 2005 time frame. The purpose of this 2005 analysis is to determine the type of transportation improvements that would be needed to support phased development of the site.

ADT volumes, a complete listing of ICU values for arterial intersections and freeway ramp intersections, and peak hour mid-block link volume data for this analysis are included in Appendix F. Tables 4.12-23 and 4.12-23a lists the arterial and freeway ramp intersections where significant impacts would occur under the interim development scenario. The locations are shown in Figure 4.12-14. ~~There would be no significant impacts at freeway ramp intersections.~~ There would be no significant impacts for mid-block lane capacities.

Buildout - 2020

The analysis of traffic impacts for 2020 uses the trip generation and reuse plan area roadway system for the fully developed Alternative 3. ADT volumes, a complete listing of ICU values for arterial intersections and freeway ramp intersections, and peak hour mid-block link volume data for this

Table 4.12-23
Alternative 3 2005 Impacted Intersections Summary

Location	Without Reuse		With Alt. 3		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Tustin								
31. Red Hill & Valencia[2]	.47	.57	.90	1.10	.43	.53	p	p
42. Tustin Ranch & Walnut	.82	1.14	.78	1.17	–	.03	–	c
Tustin/Santa Ana								
77. Red Hill & Warner[2]	.60	.51	.78	.99	.18	.48	–	p
Tustin/Irvine								
86. Von Karman & Barranca[1]	.63	.95	.60	1.07	–	.12	–	c
103. Jamboree & Barranca[1,3]	.76	.97	.85	1.06	.09	.09	–	[3]
Santa Ana								
47. Main & Warner	.74	1.05	.79	1.10	.05	.05	=	c
57. Standard & Warner	.62	.74	.71	.94	.09	.20	=	p
61. Grand & Edinger[2]	.82	.90	.87	.96	.05	.06	–	p
63. Grand & Warner[2]	.60	.77	.72	.92	.12	.15	–	p
72. Richey & Edinger	.52	.87	.54	.94	.02	.07	=	p
198. Bristol & Warner	.94	1.08	.96	1.12	.02	.04	c	c

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS including in the analysis but not reflected in the ICUs
[2] TSIA intersection
[3] Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-23a
Alternative 3 2005 Impacted Freeway Ramp Intersections Summary

Location	Without Reuse		With Alt. 1		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Santa Ana								
75. SR-55 SB Ramps & Edinger[1]	.88	1.19	.90	1.25	.02	.06	–	c

c - project contributes to deficiency
[1] CMP monitored and TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

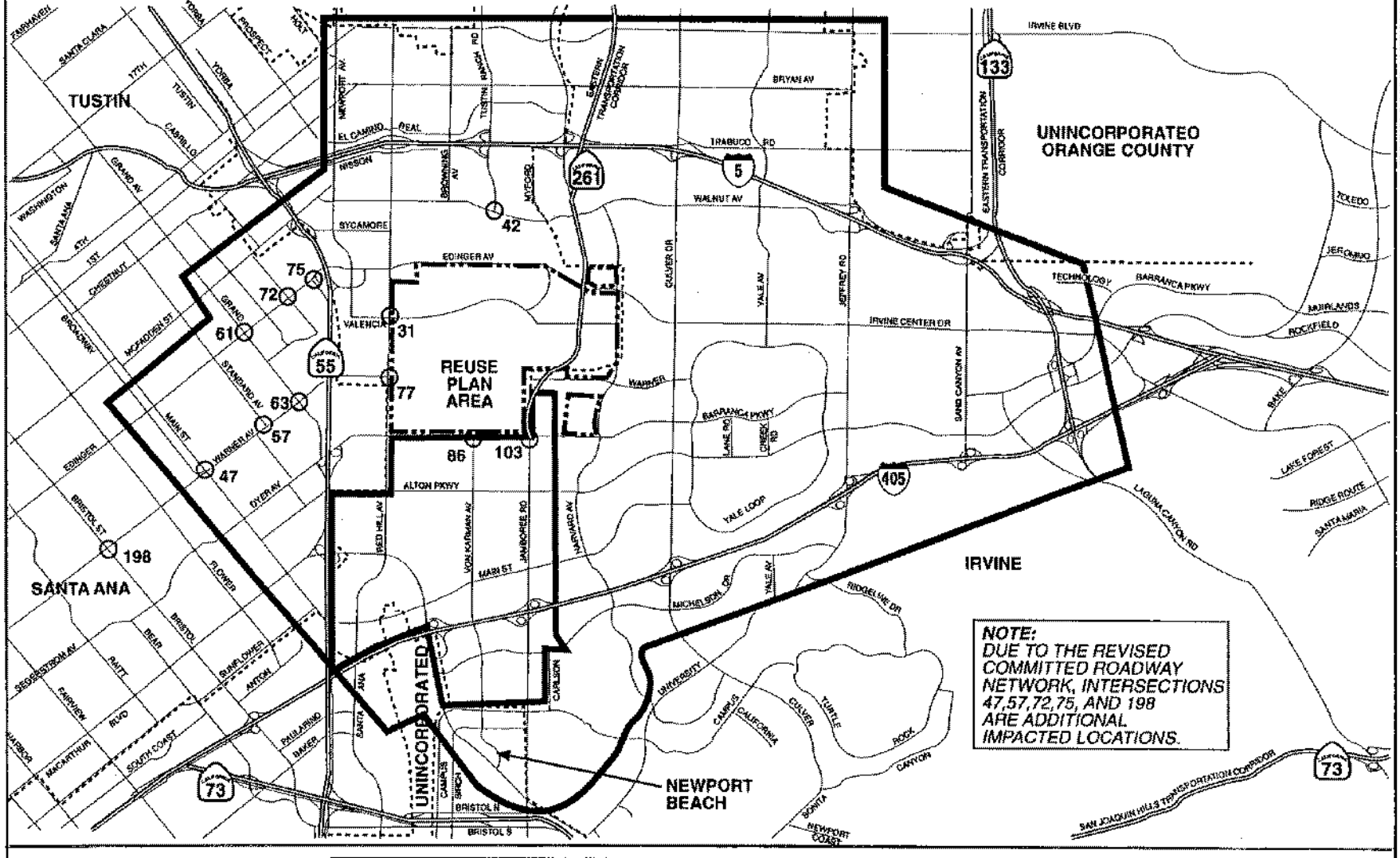


Figure 4.12-14
Alternative 3
2005 Impacted Intersections

analysis are included in Appendix F. Tables 4.12-24 and 4.12-25 list the arterial intersections and freeway ramp intersections where significant impacts would occur under the full buildout scenario. The locations are shown in Figure 4.12-15. The analysis also indicates that there would be three intersections improved from unacceptable to acceptable operations when compared with the 2020 baseline.

Public Transit Impacts

The development proposed for Alternative 3 would result in the same impacts to public transit as those described for Alternative 1.

Pedestrian and Bicycle Impacts

Impacts to pedestrian and bicycle traffic would be similar to those described for Alternative 1; no specific significant bicycle impacts have been identified, and added bike trails would provide an overall benefit to the County bike trail system.

No pedestrian impacts have been identified for this alternative.

Construction Impacts

Traffic impacts due to construction would be similar to those described under Alternative 1.

Mitigation Measures

The following mitigation measures would avoid significant traffic impacts or minimize significant at all intersections in the study area for the interim, year 2005, conditions. In 2020, after mitigation, four ~~three~~ intersections would not be fully mitigated: Tustin Ranch Road and Walnut Avenue, Von Karman Avenue and Barranca Parkway, ~~and~~ Jamboree Road and Barranca Parkway, and Grand Avenue and Warner Avenue.

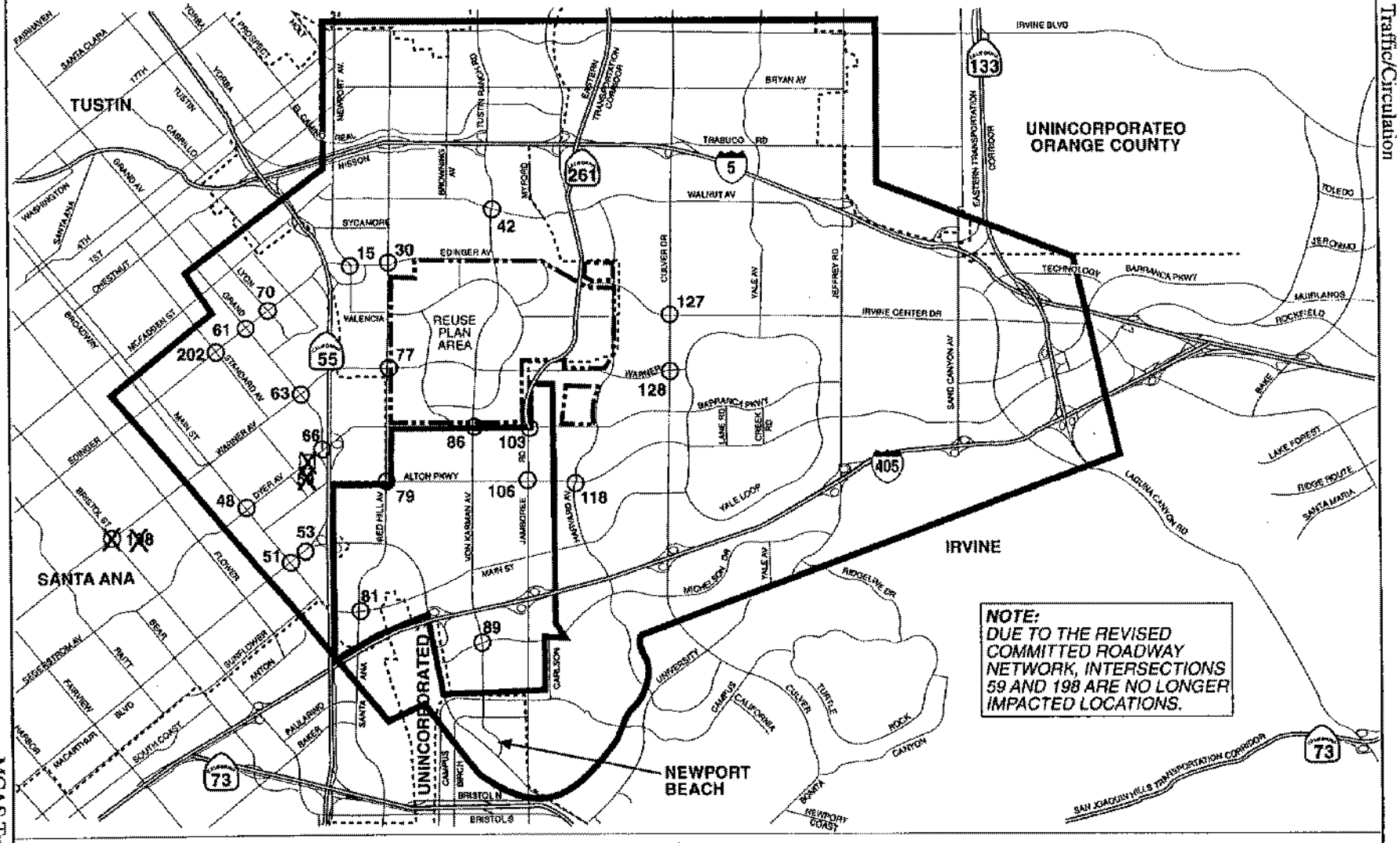


Figure 4.12-15
Alternative 3
2020 Impacted Intersections

Table 4.12-24
Alternative 3 2020 Impacted Arterial Intersections Summary

Location		Without Reuse		With Alt. 3		Difference		Impact	
		AM	PM	AM	PM	AM	PM	AM	PM
Tustin									
15.	Newport & Edinger[3]	.85	.87	.90	.94	.05	.07	–	p
30.	Red Hill & Edinger[3]	.75	.88	.83	.95	.08	.07	–	p
42.	Tustin Ranch & Walnut	.84	.89	1.16	1.06	.32	.17	p	p
Tustin/Santa Ana									
77.	Red Hill & Warner[3]	.50	.46	.83	.95	.33	.49	–	p
Tustin/Irvine									
86.	Von Karman & Barranca[1]	.61	.77	.85	1.10	.24	.33	–	p
103.	Jamboree & Barranca[1,2, 3]	.83	1.15	1.02	1.27	.19	.12	–	[4]
Santa Ana									
48.	Main & Dyer	~~.81~~ .65	~~1.10~~ .85	~~.80~~ .65	~~1.18~~ .91	– .00	~~.08~~ .06	–	c p
51.	Main & MacArthur	.71	.98	.70	1.00	–	.02	–	c
53.	Hutton Centre & MacArthur	.73	.91	.73	.93	–	.02	–	c
61.	Grand & Edinger[3]	~~.98~~ .75	~~1.05~~ .84	~~1.02~~ .82	~~1.18~~ .96	~~.04~~ .07	~~.13~~ .12	c =	c p
63.	Grand & Warner[3]	~~.61~~ .57	~~.98~~ .71	~~.78~~ .73	~~1.07~~ 1.03	~~.17~~ .16	~~.17~~ .32	–	p
66.	Grand & Dyer[3]	~~.73~~ .66	~~.97~~ .94	~~.72~~ .70	~~1.11~~ 1.03	– .04	~~.14~~ .09	–	c
70.	Lyon & Edinger[3]	.86	.97	.90	1.03	.04	.06	–	c
~~198.~~	~~Bristol & Warner~~	~~.88~~	~~1.01~~	~~.91~~	~~1.03~~	~~.03~~	~~.02~~	p	c
202.	Standard & Edinger	.80	.95	.90	1.01	.10	.06	–	c
Irvine									
81.	Red Hill & Main[1]	.70	.99	.75	1.18	.05	.19	–	p
89.	Von Karman & Michelson[1]	.68	1.07	.86	1.18	.18	.11	–	c
106.	Jamboree & Alton[1]	.94	1.01	.94	1.09	–	.08	–	p
118.	Harvard & Alton	.85	.89	.94	.88	.09	–	p	–
127.	Culver & Irvine Center	.90	.88	.89	.92	–	.04	–	–[2]
128.	Culver & Warner	.79	.79	.84	.99	.05	.20	–	p
Irvine/Santa Ana									
79.	Red Hill & Alton[1]	.68	1.01	.70	1.14	.02	.13	–	p

p - project causes deficiency
c - project contributes to deficiency
[1] IBC intersection - credit of .05 for ATMS included in the analysis but not reflected in the ICUs
[2] Location identified in City of Irvine as an ATMS intersection which discounts the AM and PM peak hour ICUs by .05; therefore there is no project impact at this location in the AM condition only.
[3] TSIA intersection
[4] Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA. Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Table 4.12-25
Alternative 3 2020 Impacted Freeway Ramp Intersections Summary

Location	Without Reuse		With Alt. 3		Difference		Impact	
	AM	PM	AM	PM	AM	PM	AM	PM
Santa Ana								
~~59. Hotel Terrace/SR-55 & Dyer[1]~~	~~.68~~	~~.87~~	~~.75~~	~~.96~~	~~.07~~	~~.09~~	-	p
67. SR-55 Northbound Ramps & Dyer[1]	~~.76~~ .68	~~.69~~ .61	.81	.94	~~.05~~ .13	~~.25~~ .33	-	p

p - project causes deficiency
[1] TSIA intersection
LOS/ICU equivalents: A/≤0.60; B/0.61-0.70; C/0.71-080; D/0.81-0.90; E/0.91-1.00; F/≥1.00

Mitigation measures for the traffic impacts of Alternative 3 would add lanes or change lane movements at existing intersections to increase capacity and would implement ATMS improvements to increase operating efficiency. At individual intersections, either or both types of improvements may be specified. The addition of lanes and the modification of lane movements may be accomplished by restriping or by construction. As noted above, an ICU reduction of .05 is taken for ATMS at IBC locations and at locations in Irvine identified as ATMS intersections. In addition, year 2005 mitigation measures would provide a new access into the reuse area from Warner Avenue west of Jamboree Road. It should be noted that mitigation for the intersection of #86 (Von Karman Avenue and Barranca Parkway) is an interim improvement only and is not necessary for 2020. If subsequent studies demonstrate that trips would not be generated or impacts would be different than those projected in this EIS/EIR, the mitigation measures may be modified, subject to the approval of the City of Tustin and any other affected jurisdictions, provided that mitigation to the same ~~ICU value~~ level of service would be provided.

~~No specific mitigation measures are warranted for the stand-alone analysis because of the hypothetical nature of that evaluation. Immediate full buildout with no change of external conditions is not a feasible development scenario.~~

Construction

Mitigation measure T/C-1, as stated for Alternative 1, shall be implemented for Alternative 3.

~~Interim Development - 2005~~

T/C-~~11~~13 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall ensure that the arterial intersection improvements required in 2005 and 2020 and as indicated in Table 4.12-26 are implemented for their respective jurisdictions according to the cumulative ADT thresholds identified in each table and according to the fair share basis noted.

~~Buildout - 2020~~

~~T/C-12 The City of Tustin and the City of Irvine, as applicable, shall ensure that the arterial intersection improvements indicated in Table 4.12-27 are implemented for their respective jurisdictions.~~

T/C-~~13~~14 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall contribute, on a fair share basis, to improvements to freeway ramps as listed in Tables 4.12-26a and 4.12-28. The method of implementing ~~nature of~~ the improvements, e.g., restriping, ramp widening, shall ~~would~~ be based on the ~~subject of~~ special design studies, in association with Caltrans.

T/C-15 The City of Tustin and the City of Irvine, as applicable (for that portion of the reuse plan area within Irvine), shall ensure that all on-site circulation system improvements for the reuse plan area assumed in the 2005 and 2020 traffic analysis and as shown in Table 4.12.29 are implemented according to the cumulative ADT thresholds identified in the table.

Interim Development - 2005 and Buildout - 2020

Mitigation measures T/C-~~4~~5 through T/C-~~7~~8, as stated for Alternative 1, shall also be implemented for Alternative 3, using the tables appropriate for Alternative 3.

Table 4.12-26
Alternative 3 2005 Mitigation for Impacted Intersections

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold	Project Share[4]
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	Cumulative ADT	Percent
Tustin																			
31. Red Hill & Valencia[1]	Base	2	3	1	1	2	1	2	3	1	1	1	1	p	p	ma	ma	78,000	100
	Mit.	2	3	1	2	2	1	2	3	1	1	2	1						
42. Tustin Ranch & Walnut	Base	1.5	–	1.5	–	2	d	–	–	–	1	2	–	–	c	–	mp	81,000	7
	Mit.	1.5	–	1.5	–	2	d	–	–	–	2	2	–						
Tustin/Santa Ana																			
77. Red Hill & Warner[1]	Base	1	3	–	1	1	1	2	3	1	2	1	1	–	p	–	ma	97,000	100
	Mit.	2	3	–	1	1	2	2	3	1	2	1	1						
Tustin/Irvine																			
86. Von Karman & Barranca[2]	Base	–	–	–	2	3	–	2	–	1	–	3	d	–	c	–	ma	106,000	100
	Mit.	–	–	–	2	3	–	2	–	2	–	3	d						
103. Jamboree & Barranca[1, 3]	Base	2	4	f	2	3	f	2	4	f	2.5	2.5	1	–	p	–	ma	(5)	(6)
	Mit.	2	4	f	2	3	f	2	4	f	2.5	2.5	1						
Santa Ana																			
47. Main & Warner	Base	2	3	–	1	2	–	2	3	–	1	2	1	–	c	–	mp	53,000	23
	Mit.	2	3	–	1	3	–	2	3	–	1	2	1						
47. Standard & Warner	Base	1	–	1	–	2	1	1	1	–	1	2	–	–	p	–	ma	99,000	100
	Mit.	1	–	1	–	2	1	1	2	–	1	2	–						
61. Grand & Edinger[1]	Base	1	3	–	1	3	–	1	3	–	1	3	–	–	p	–	ma	30,000	100
	Mit.	1	3	–	1	3	–	2	3	–	21	3	–						
63. Grand & Warner[1]	Base	1	3	–	2	2	1	1	3	–	2	3	1	–	p	–	ma	107,000	100
	Mit.	1	3	–	2	3	1	1	3	–	2	3	1						
72. Ritchey & Edinger	Base	1	2	–	1	3	–	1	1	–	1	3	–	–	p	–	ma	71,000	100
	Mit.	1	2	–	1	3	–	1	2	–	1	3	–						
198. Bristol & Warner	Base	1	3	–	1	2	–	1	2	1	1	2	1	c	c	mp	ma	63,000	19
	Mit.	1	3	–	1	3	–	1	3	–	1	2	1						

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
ATMS - Advanced Transportation Management System
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane changes
A .5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - Project contributes to deficiency.
ma - Mitigated to adequate level of service; mp - Project impact mitigated

(1) TSIA intersection
(2) Additional access from Warner Avenue west of Jamboree Road
(3) Interim improvement only, not necessary for 2020
(4) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer~~ mutually agreed to by the City of Irvine and City of Tustin.
(5) Short-range buildout of Reuse Alternative 3.
(6) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

Table 4.12-26a
Alternative 3 2005 Mitigation for Impacted Freeway Ramp Intersection

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Result		Implementation Threshold Cumulative ADT	Project Share[3] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Santa Ana																			
75. SR-55 SB Ramps & Edinger [1][2]	Base	1	1	d	1	2	f	1.5	.5	f	1	2	f	c		c		46,000	22
	Mit.	1	1	f	1	2	f	1.5	.5	f	1	3	f	c		mp			

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation)
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - project contributes to deficiency.
ma - Mitigated to an adequate level of service; mp - Project portion of impact mitigated, LOS remains less than adequate
(1) CMP monitored intersection
(2) TSIA intersection
(3) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.

Table 4.12-27
Alternative 3 2020 Mitigation for Impacted Arterial Intersections

Location		Southbound			Westbound			Northbound			Eastbound			Impacts		Result		Implementation Threshold Cumulative ADT	Project Share[6] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Tustin																			
15. Newport & Edinger[1, 4]	Base	2	2.5	1.5	1	3	f	2	3	d	2	3	1	–	p	[illegible]	ma	217,000	100
	Mit.	2	2.5	1.5	1	3	f	2	3	d	2	3	1						
30. Red Hill & Edinger[1, 4]	Base	2	3	1	2	3	1	2	3	1	2	3	1	–	p	[illegible]	ma	192,000	100
	Mit.	2	3	1	2	3	1	2	3	1	2	3	1						
42. Tustin Ranch & Walnut[2]	Base	2	3	d	1	2	1	2	3	d	1	2	1	p	p	nm	nm	136,000	100
	Mit.	2	3	d	2	2	1	2	3	d	2	2	1						
Tustin/Santa Ana																			
77. Red Hill & Warner[1, 4, 5]	Base	2	4	1	2	3	1	2	4	1	2	3	1	–	p	[illegible]	ma	280,000	100
	Mit.	2	4	1	2	3	1	2	4	1	2	3	1						
Tustin/Irvine																			
86. Von Karman & Barranca[3]	Base	2	3	2	2	4	1	2	3	1	2	4	1	–	p	[illegible]	nm	273,000	100
	Mit.	2	3	2	2	4	1	2	3	1	2	4	1						
103. Jamboree & Barranca[3, 4]	Base	2	4	f	2	3	f	2	4	f	2.5	2.5	1	–	c	[illegible]	nm	145,000	[8]
	Mit.	2	4	f	2	3	f	2	4	f	2.5	2.5	1						
Santa Ana																			
48. Main & Dyer	Base	2	3	~~–1~~	~~+2~~	3	~~–1~~	2	3	~~–1~~	~~+2~~	3	1	–	c	[illegible]	ma	[7]	17
	Mit.	2	3	~~–1~~	~~+2~~	3	~~–1~~	2	~~+4~~	~~+1~~	~~+2~~	3	1						
51. Main & MacArthur	Base	2	3	1	2	3	1	2	3	1	2	3	1	–	c	[illegible]	mp	[7]	8
	Mit.	2	3	1	2	3	1	2	~~+4~~	~~+1~~	2	3	1						
53. Hutton Centre & MacArthur	Base	2	1	2	2	3	1	1	.5	1.5	2	3	1	–	c	[illegible]	ma	[7]	20
	Mit.	2	1	2	2	4	~~+1~~	1	.5	1.5	2	3	1						
61. Grand & Edinger[4]	Base	2	3	~~–1~~	~~+2~~	3	~~–1~~	~~+2~~	3	1	~~+2~~	3	~~–1~~	c	c	ma	ma	219,000	100
	Mit.	2	3	~~–1~~	~~+2~~	~~+4~~	~~+1~~	~~+2~~	~~+4~~	~~+1~~	~~+2~~	3	~~–1~~						
63. Grand & Warner[4]	Base	2	3	~~–1~~	2	~~+3~~	1	~~+2~~	3	~~–1~~	2	3	1	–	p	[illegible]	nm	228,000	100
	Mit.	2	3	~~+1~~	2	~~+3~~	~~+1~~	~~+2~~	~~+4~~	–	2	3	1						
66. Grand & Dyer[4]	Base	2	–	1	–	~~+3~~	1	–	–	–	~~+2~~	3	–	–	c	[illegible]	ma	154,000	27
	Mit.	1.5	–	1.5	–	~~+3~~	1	–	–	–	~~+2~~	3	–						
70. Lyon & Edinger[4]	Base	1	1	1	1	3	1	1	1	2	1	3	–	–	c	[illegible]	ma	174,000	15
	Mit.	~~+1~~, 5	~~+.5~~	1	1	3	1	~~+.5~~	~~+1~~, 5	2	1	3	~~–1~~						
~~198. Bristol & Warner~~	~~Base~~	~~+~~	~~3~~	~~—~~	~~+~~	~~3~~	~~—~~	~~+~~	~~3~~	~~—~~	~~+~~	~~3~~	~~—~~	p	c				
	~~Mit.~~	~~2~~	~~3~~	~~—~~	~~+~~	~~3~~	~~—~~	~~2~~	~~3~~	~~—~~	~~+~~	~~3~~	~~—~~						
202. Standard & Edinger	Base	1	2	–	1	3	–	1	2	–	1	3	–	–	c	[illegible]	mp	174,000	17
	Mit.	1	2	–	1	3	1	1	2	–	1	3	–						

Table 4.12-27. Continued

Location		Southbound			Westbound			Northbound			Eastbound			Impacts		Result		Implementation Threshold	Project Share[6]
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	Cumulative ADT	Percent
Irvine																			
81. Red Hill & Main	Base	1	3	d	2	3	d	2	3	f	1	3	d						
	Mit.	1	3	f	2	3	d	2	3	f	1	3	d	–	p	ma	ma	181,000	100
89. Von Karman & Michelson	Base	1	2	d	1	2	f	1	2	1	1	2	d						
	Mit.	1	2	d	1	2	f	1	2	1	2	2	d	–	c	ma	ma	147,000	31
106. Jamboree & Alton	Base	2	4	d	2	3	d	2	4	1	2	3	d						
	Mit.	2	4	d	2	3	d	2	5	1	2	3	d	–	p	ma	ma	228,000	100
118. Harvard & Alton	Base	1	2	1	2	3	d	1	2	d	2	3	1						
	Mit.	1	2	1	2	3	d	2	2	d	2	3	1	p	–	ma	ma	235,000	100
128. Culver & Warner	Base	1	3	d	1	2	d	1	3	1	1	2	d						
	Mit.	1	3	d	1	2	d	1	3	1	2	2	d	–	p	ma	ma	223,000	100
Irvine/Santa Ana																			
79. Red Hill & Alton	Base	1	3	d	2	1	1	1	3	d	1	2	1						
	Mit.	2	3	d	2	1	1	1	3	d	1	2	1	–	p	ma	ma	183,000	100

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
ATMS - Advanced Transportation Management System
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane changes
A .5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency; c - Project contributes to deficiency.
ma - Mitigated to adequate level of service; nm - Project impact not mitigated; mp - Project impact mitigated

(1) No lane changes; ATMS measures
(2) Lane changes and ATMS measures
(3) No identifiable mitigation measures.
(4) TSIA intersection
(5) ATMS measures
(6) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer~~ mutually agreed to by the City of Irvine and City of Tustin.
(7) Full buildout of Reuse Alternative 3
(8) Currently unidentified future improvements will be made to this intersection to maintain an acceptable level of service to be agreed to by the cities of Tustin and Irvine for baseline conditions pursuant to the TCA, Tustin and Irvine 1998 MOA. Only when these improvements are included in the ICU calculations can the impact of reuse be identified. Therefore, impacts from reuse may be overstated, difficult to quantify at this time and could be less at this location because of unknown improvements.

Table 4.12-28
Alternative 3 2020 Mitigation Lanes for Impacted Freeway Ramp Intersections

Location		Southbound			Westbound			Northbound			Eastbound			Impact		Results		Implementation Threshold Cumulative ADT	Project Share[1] Percent
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM		
Santa Ana																			
~~59. Hotel Terrace/SR-55 & Dyer[1]~~	~~Base~~	~~.5~~	~~1.5~~	~~1~~	~~2~~	~~3~~	~~1~~	~~1.5~~	~~.5~~	~~2~~	~~1~~	~~3~~	~~—~~	—	p				
	~~Mit.~~	~~.5~~	~~1.5~~	~~1~~	~~2~~	~~3~~	~~1~~	~~1.5~~	~~.5~~	~~2~~	~~1~~	~~3~~	~~1~~						
67. SR-55 Northbound Ramps & Dyer[1]	Base	–	–	–	–	~~34~~	–	1.5	–	1.5	–	3	1 f	–	p				
	Mit.	–	–	–	–	3 2.5	f 1.5	1.5	–	1.5	–	3	1 f	–	p	–	ma	174,000	15

Base - Intersection lanes without mitigation; Mit. - Intersection lanes with mitigation
d - de facto right-turn; f - free right-turn
L, T, R - left, through, right
Bold - notation indicates lane change from base scenario (without mitigation)
A 0.5 or 1.5 lane designation represents lane sharing between different movements
p - Project causes deficiency.
ma - Mitigated to an adequate level of service

(1) TSIA intersection

(2) Fair share contribution by City of Tustin for project responsibility. TSIA funds would not be used for this portion of the funding. Many of the measures specified for mitigation of traffic/circulation impacts require financial contributions on a fair share basis. Fair share contributions shall be no greater than required for capacity improvements consistent with and assumed in this EIS/EIR, as ~~defined by the City of Tustin Traffic Engineer~~ mutually agreed to by the Cities of Tustin, Irvine, and Santa Ana, as applicable.

Table 4.12-29a
Alternative 3 - On-site ADT Development Thresholds

ADT (Cumulative)		Roads Added
27,000	(27,000)	Edinger Avenue - along project frontage between Red Hill Avenue and Jamboree Road Landsdowne Road North Loop Road - Red Hill Avenue to West Connector Road (Build 3 lanes only) West Connector Road
87,500	(114,500)	East Connector Road Marble Mountain Road Moffett Drive North Loop Road - Red Hill Avenue to Moffett Drive Connector Road (Final Buildout) Red Hill Avenue/Carnegie Avenue Intersection (East Leg) Red Hill Avenue/Warner Avenue Intersection (East Leg) Severyns Road
28,000	(142,500)	Armstrong Avenue - North Loop Road to Barranca Parkway North Loop Road - Moffett Drive to Warner Avenue South Loop Road - Warner Avenue to Tustin Ranch Road Tustin Ranch Road - Edinger Avenue to North Loop Road (6 lanes) Tustin Ranch Road - Warner Avenue to Barranca Parkway (Build 4 lanes only) Warner Avenue - Red Hill Avenue to Jamboree Road (Build 4 lanes only)
41,200	(183,700)	South Loop Road - Armstrong Avenue to Tustin Ranch Road Tustin Ranch Road - North Loop Road to South Loop Road (Build 4 lanes only)
111,200	(294,900)	Widen Tustin Ranch Road to 6 lanes (Final Buildout) Widen Warner Avenue to 6 lanes (Final Buildout)

4.12.6 No Action Alternative

Traffic Impacts

Trip Generation

With MCAS Tustin in a caretaker status, trip generation would be less than 100 trips per day.

Impact Analysis

No Action Alternative Plus Existing

For this analysis, no modifications or additions were assumed to the existing circulation system outside the reuse plan area. ADT volumes and a listing of ICU values for intersections for this

analysis are included in Appendix F. The analysis indicates that there would be improved performance at many intersections near the reuse plan area, and at three intersections, Red Hill/Walnut, Red Hill/Sycamore, and Jamboree southbound/Walnut, operations would change from an unacceptable to an acceptable classification. However, implementation of the No Action Alternative would prevent the extension of Tustin Ranch Road/Von Karman Avenue, Valencia Avenue/Moffett Avenue and Warner Avenue through the reuse plan area, whicb would contribute to the elimination of existing circulation deficiencies, which is a purpose of the reuse plan.

Interim Development - 2005

ADT volumes and a listing of ICU values for intersections for this analysis are included in Appendix F. The analysis indicates that there would be improved performance at many intersections near the reuse plan area; however, no intersections were identified wbere operations would cbange from an unacceptable to an acceptable classification. However, implementation of the No Action Alternative would prevent the extension of Tustin Ranch Road/Von Karman Avenue, Valencia Avenue/Moffett Avenue and Warner Avenue through the reuse plan area, which would contribute to the elimination of existing circulation deficiencies, which is a purpose of the reuse plan.

Buildout - 2020

ADT volumes and a listing of ICU values for intersections for this analysis are included in Appendix F. The analysis indicates that there would be improved performance at many intersections near the reuse plan area. Although at the intersection of Red Hill/I-5 northbound ramps, operations would cbange from an unacceptable to an acceptable classification in the AM peak bour, the intersection would remain deficient in the PM peak hour. However, implementation of the No Action Alternative would prevent the extension of Tustin Rancb Road/Von Karman Avenue, Valencia Avenue/Moffett Avenue and Warner Avenue through the reuse plan area, which would contribute to the elimination of existing circulation deficiencies, which is a purpose of the reuse plan.

Public Transit Impacts

Implementation of the No Action Alternative would not create demand for additional public transit service. When compared with the baseline, there would be a likely reduction in ridership under the No Action Alternative. Further, the continued closure of the reuse plan area would eliminate opportunities for improved service with direct routing of bus lines across the reuse plan area.

Pedestrian and Bicycle Impacts

No specific significant pedestrian or bicycle impacts would occur.

Construction Impacts

There would be no construction activity associated with the No Action Alternative, and no adverse impacts.

Mitigation Measures

No mitigation measures would be required. However, development associated with reuse, or additions to the City of Tustin and City of Irvine Capital Improvement programs, as applicable, would be required to extend arterial roadways through the reuse plan area to avoid traffic circulation impacts.

4.12.7 Post-2020 Analysis

As part of the technical traffic study, an analysis of post-2020 conditions was completed. This analysis assumed the buildout of the General Plans of four cities in the study area (Irvine, Tustin, Santa Ana and Newport Beach). The OCP-96 Modified demographic data used for the 2020 analysis was revised to reflect this buildout condition and then used in the traffic model to prepare Post-2020 traffic forecasts. The roadway system for the post-2020 analysis assumed complete buildout of the Orange County MPAH and the General Plan Circulation Elements of the four cities. In the post-2020 roadway system, the Orange County Toll Roads - the Eastern, Foothill and San Joaquin Hill Transportation Corridors - were assumed to be operating as no-toll facilities.

One analysis was completed for each of the three reuse alternatives, and the resulting ADT volumes and ICU calculations are included in Appendix F. With the full buildout conditions, operations at some intersections in the study area would not meet the desired performance standards. None of these post-2020 traffic impacts would be attributed to implementation of the reuse alternatives, because impacts and mitigation measures for each reuse alternative were accounted for in the 2020 analysis. Thus, the required mitigation for circulation impacts for each reuse alternative would be completed prior to the full buildout of the area surrounding the reuse site. The Post-2020 analysis does indicate, however, that additional circulation improvements will be required to accommodate

full buildout of the local General Plans. The responsibility for implementation of these improvements has not been identified.

4.13 AIR QUALITY

4.13.1 Significance Criteria

Air quality impacts would be considered significant if disposal or subsequent reuse of MCAS Tustin would violate any ambient air quality standard, contribute to an existing or projected air quality violation, or expose sensitive receptors to pollutant concentrations (*Guidelines for the Implementation of CEQA*, Cal. Code Regs., Title 14, Appendix E).

Under NEPA, air quality impacts would be considered significant if the disposal or subsequent reuse of MCAS Tustin would be inconsistent with the assumptions or objectives of the 1994 AQMP, the most recently adopted AQMP by USEPA. Under CEQA, air quality impacts would be considered significant if the disposal or subsequent reuse of MCAS Tustin would be inconsistent with the assumptions or objectives of the 1997 AQMP, the most recently adopted AQMP by the State of California.

One method of quantitative determination for new projects is the comparison with emissions standards set by the local air quality management district. SCAQMD (1993) has established the thresholds shown in Table 4.13-1 as guidance when evaluating when a proposed action sbould be considered significant. A proposed action would not be considered significant if the forecast emissions from the proposed action have been anticipated in regional and state air quality planning and are included in the applicable AQMP and SIP.

Table 4.13-1
SCAQMD Thresholds of Significance

Activity	Pollutant Emission Rate				
	CO	ROC	NO_X	SO_X	PM_{10}
Construction (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Construction (pounds/day)	550	75	100	150	150
Operations (pounds/day)	550	55	55	150	150

Source: SCAQMD 1993

The emissions to he compared to the SCAQMD thresholds are the net emissions resulting when the baseline emissions are subtracted from those which would result from the implementation of one of the reuse alternatives. The values of the baseline emissions are shown in Section 3.13 of this EIS/EIR.

4.13.2 Methodology

Estimated emission rates and total emissions from many construction and operations activities were calculated using emission factors and methods published in the *Compilation of Air Pollution Emission Factors*, AP-42 (USEPA); the *CEQA Air Quality Handbook* (SCAQMD 1993); and the vehicle emission factors models EMFAC7F and EMFAC7G (CARB 1996). Data from emissions reports and permit applications relative to historical, current, and proposed emissions was also used. Detailed calculations are on file at the City of Tustin.

Construction

In order to determine peak construction emissions, peak year construction activity was estimated by assuming that 60 percent of the five-year phasing development would occur in one year. Peak quarterly construction activity was estimated by assuming that 50 percent of the peak year development would occur in one quarter. Peak daily construction mass grading activity was estimated by assuming that 1/5th of the peak quarter acres would be graded every day that quarter, with a minimum of 15 acres graded each peak day unless the peak quarterly acres graded is less than 15. In this case, the peak quarterly acres graded was assumed to occur on the peak day. Peak daily demolition, asbestos removal, site preparation and utility installation, and building construction activities was estimated by assuming that peak quarterly construction activity occurs over 60 days per quarter.

Construction air emissions would result from the following four discrete construction activities: (1) demolition (which may include asbestos removal); (2) mass grading; (3) site preparation and utility installation; and (4) building construction.

While these discrete activities may not occur simultaneously on any particular development site in the reuse plan area, several different development projects may occur simultaneously. Therefore, a "Simultaneous Construction Activity" scenario was developed by adding 50 percent of each discrete activity emissions to the highest discrete activity emissions for each pollutant. Each group of calculations shows both gross emissions and reduced emissions. The latter category assumes

emission reductions for implementation of required and recommended SCAQMD Rules, control measures, and mitigation measures. Both gross and reduced calculations are included in the tables in the following sections, in accordance with the guidance of the SCAQMD CEQA Air Quality Handbook (1993).

Operation

Operational vehicular source air pollutant emissions were calculated for each of the development phases by estimating the number of trips associated with each particular land use described in Section 2.4 of this EIS/EIR. EMFAC7G emission factors were used for vehicular emissions estimates. Operational stationary source air pollutant emissions were estimated by using CEQA Handbook emission factors for each particular land use (SCAQMD 1993). Gross and reduced calculations of forecast operations emissions are included in the tables in the following sections, as described above for construction emissions.

Net peak operation emissions were calculated by subtracting the baseline emissions, as given in Section 3.13 of this EIS/EIR, from estimated gross operation emissions.

CO "Hot Spot"

In order to determine if a CO "Hot Spot" would be created, the three intersections with the worst LOS and highest A.M. peak hour traffic volumes were chosen for analysis, as suggested by applicable EPA guidance (USEPA 1992). The guidance indicates that these intersections would have the greatest potential for CO hot spots. Both years 2005 and 2020 were analyzed; years in which traffic data is available (Section 4.12, and Appendix F of this EIS/EIR). EMFAC7F was used to estimate mobile emission factors for these two analysis years.

4.13.3 DON Disposal of MCAS Tustin

Impacts

DON disposal of MCAS Tustin would not result in a direct impact to air quality because the disposal is simply a transfer of title and, in and of itself, would not result in a significant effect on air quality.

Mitigation Measures

Disposal of MCAS Tustin would not adversely impact air quality and no mitigation measures would be required.

General Conformity

In order to ensure that federal activities do not hamper local efforts to control air pollution, the Clean Air Act (CAA) (42 U.S.C. § 7491 et seq.) prohibits federal agencies from approving any action that does not conform to an approved SIP. A SIP is required in any area that has been found to be in violation of NAAQS and has been classified as "nonattainment" and in attainment areas which bave been reclassified from nonattainment. The purpose of a SIP is the elimination or reduction in severity and number of NAAQS violations.

Conformity provisions first appeared in the CAA Amendments of 1977 (Pub. L. 95-59, Aug. 7, 1977, 91 Stat. 685-796 and Pub. L. 95-190, Nov. 16, 1977, 91 Stat. 1399-1404). Section 176(c) of the CAA, as amended in 1990 (Pub. L. 101-549, Nov. 15, 1990, 104 Stat. 2399), further defines conformity, as follows:

> Conformity to a plan's purpose of elimination or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards; and that such activities will not
>
> - cause or contribute to new violations of the NAAQS;
> - increase the frequency or severity of an existing violation; or
> - delay the timely attainment of a standard, interim emission reduction, or milestone.

On November 30, 1993, USEPA published the Federal General Conformity Rule (40 C.F.R. § 51.100 et seq. and § 93.100 et seq). The U.S. Navy document Chief of Naval Operations Interim Guidance on Compliance with the Clean Air Act General Conformity Rule (U.S. Navy 1994) provides policies and procedures for conformity evaluations.

As specified in 40 C.F.R. § 51.853 and 40 C.F.R. § 93.153, certain actions are exempt from General Conformity determinations including:

- Actions where a total of direct and indirect emissions are below the emissions levels specified for each pollutant in each classification of nonattainment or maintenance area;
- Specified actions which would result in no emissions increase or an increase that is clearly de minimis;
- Actions where the emissions are not reasonably foreseeable:
- Actions which implement a decision to conduct or carry out a conforming program;
- Actions in response to emergencies or natural disasters, which meet certain requirements;
- The portion of an action that includes new or modified stationary sources that require a permit under the new source review program or the prevention of significant deterioration program.

Pursuant to Section 176(c) of the Clean Air Act, 42 U.S.C. § 7401, et seq. (1990) and the General Conformity Rule (40 C.F.R. § 93), the action to dispose of MCAS Tustin is exempt from the conformity determination. The finding is based on the following exemption as stated in 40 C.F.R. § 51.853(c)(2)(xix) and 40 C.F.R. § 93.153(c)(2)(xix): "Actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific, reasonable condition is met, such as promptly after the land is certified as meeting the requirements of CERCLA, and where the Federal agency does not retain continuing authority to control emissions associated with the land, facilities, title, or real properties." This is further explained in Volume 58 Number 228 of the *Federal Register*, "Supplementary Information on the Final Rule." Subsection III.J(3)(e) states that "federal land transfers are included in the regulatory list of actions ... exempt from the final conformity rules."

4.13.4 Alternative 1

Impacts

Buildout of Alternative 1 would result in short-term air pollutant emissions from construction activities, long-term emissions from operation of new uses, and may result in long-term emissions from hazardous air pollutants.

Construction

Clearing and grading of sites, and construction of buildings and infrastructure within the reuse plan area would generate fugitive dust and emissions from construction equipment and from workers' vehicles. These emissions would be greatest during grading and clearing of individual development sites.

Development of the site would occur over a period of over 20+ years. According to the development phasing plan for reuse of the site (see Section 2.4), new development would proceed in the following five phases:

Early Phase (by 2005): About 4.3 million square feet of nonresidential and 1,614 units of new residential development. The early phase would also include rehabilitation, as necessary, of the existing residential units within the reuse plan area.

Middle Phase I (2006-2010): About 1.6 million square feet of nonresidential and 559 units of residential development.

Middle Phase II (2011-2015): About 1.7 million square feet of nonresidential and 891 units of residential development.

Later Phase (2016-2020): About 1.1 million square feet of nonresidential development.

Buildout (2020+): About 2.6 million square feet of nonresidential development.

Using the methodology described above, Table 4.13-2 shows the estimated peak quarterly construction activity for Alternative 1.

Tables 4.13-3 and 4.13-4 show the resulting estimated peak quarterly and daily construction emissions for the "Simultaneous Construction Activity" scenario. Each table has data for "peak emissions" and "peak reduced emissions". Peak emissions would occur without the implementation of required SCAQMD control measures. Peak reduced emissions would occur with the use of these measures. The two control actions included in the calculations are watering of active grading sites and measures to reduce emissions from interior and exterior architectural coatings (painting). A reduction in PM_{10} emissions of 34 percent is taken for twice daily watering of grading sites. A reduction of 16 percent in ROC emissions is taken for assuming that five percent of the area to be coated uses each of the following: 1) natural-colored building materials or pre-coated materials, 2) high transfer efficiency equipment, and 3) low-ROC coating materials and high transfer efficiency equipment.

Table 4.13-2
Alternative 1 Estimated Peak Construction Activity

	By 2005	2006-2010	2011-2015	2016-2020	2020+
Grading - Peak Day (acres)	33	15	15	11	15
Grading - Peak Quarter (acres)	211	38	52	11	21
All Other Activities - Peak Quarter					
Single-Family Residential (DU)	9	0	0	0	0
Multi-family Residential (DU)	475	168	267	0	0
Non-Residential Development (TSF)	1,292	492	523	333	782
Golf Course (acres)	48	0	0	0	0

TSF = thousand square foot

Table 4.13-3
Peak Construction Emissions by Pbase – Tons per Quarter

	CO	ROC	NO_x	PM_{10}	SO_x
Early Phase (by 2005)					
Peak emissions	1.69	194.13	5.28	28.16	Negl.
Peak reduced emissions	1.69	162.66	5.28	19.28	Negl.
Middle Phase I (2006-2010)					
Peak emissions	0.69	86.34	2.62	12.17	Negl.
Peak reduced emissions	0.69	72.34	2.62	8.13	Negl.
Middle Phase II (2011-2015)					
Peak emissions	0.69	99.23	2.64	12.17	Negl.
Peak reduced emissions	0.69	83.14	2.64	8.13	Negl.
Later Phase (2016-2020)					
Peak emissions	0.38	56.59	1.07	8.83	Negl.
Peak reduced emissions	0.38	47.41	1.07	5.87	Negl.
Buildout					
Peak emissions	0.70	98.16	2.76	12.18	Negl.
Peak reduced emissions	0.70	82.24	2.76	8.14	Negl.
SCAQMD Threshold	24.75	2.50	2.50	6.75	6.75

Note: "reduced emissions" are those that would result assuming implementation of required SCAQMD ~~from reductions associated with~~ control measures. Control measures include watering, use of low-VOC coating materials, etc. Assumed 2020-2025 for Final Phase calculations.

Table 4.13-4
Peak Construction Emissions by Phase – Ponnds per Day

	CO	ROC	NO_x	PM_{10}	SO_x
Early Phase (by 2005)					
Peak emissions	56	6,471	176	939	Negl.
Peak reduced emissions	56	5,422	176	643	Negl.
Middle Phase I (2006-2010)					
Peak emissions	23	2,878	87	406	Negl.
Peak reduced emissions	23	2,411	87	271	Negl.
Middle Phase II (2011-2015)					
Peak emissions	23	3,308	88	406	Negl.
Peak reduced emissions	23	2,771	88	271	Negl.
Later Phase (2016-2020)					
Peak emissions	13	1,886	36	294	Negl.
Peak reduced emissions	13	1,580	36	196	Negl.
Buildout					
Peak emissions	23	3,272	92	406	Negl.
Peak reduced emissions	23	2,741	92	271	Negl.
SCAQMD Threshold	550	75	100	150	150

Note: "reduced emissions" are those that would result assuming implementation of required SCAQMD ~~from reductions associated with~~ control measures. Control measures include watering, use of low-VOC coating materials, etc. Assumed 2020-2025 for Final Phase calculations.

As seen in Table 4.13-3, gross quarterly emissions would exceed SCAQMD significance criteria for PM_{10} and ROC during each phase and for NO_x during all but the Later Phase. Control and mitigation measures would reduce overall ROC and PM_{10} emissions, though not below SCAQMD significance criteria, except for PM_{10} during the Later Phase. As seen in Table 4.13-4, gross daily emissions would exceed SCAQMD significance criteria for PM_{10} and ROC during all phases, and would exceed criteria for NO_x during the Early Phase. Control and mitigation measures would reduce PM_{10} and ROC emissions, though not below SCAQMD significance criteria.

PM_{10} emissions would reach their peak during the Early Phase, primarily due to the grading activity that would occur when developing the golf course (see Table 4.13-1). All grading activities on the site would comply with applicable SCAQMD rules and associated control measures, and city grading permit requirements. Compliance with these requirements (Best Available Control Measures) would reduce fugitive dust amounts by 34 to 68 percent. Dust reducing control measures would include, at a minimum, regular watering of actively disturbed soils, restricting construction vehicle travel to established roadways, and suspending operations that create dust during windy conditions.

Levels of ROC that exceed SCAQMD significance criteria would occur in each of the five phases, due primarily to ROC emissions associated with painting activities (e.g., architectural coatings), which are estimated to constitute more than 99 percent of peak daily ROC emissions.

Asbestos emissions due to the demolition of buildings and utilities that contain ACMs would occur during the Early Phase. Daily peak construction activities would result in approximately 1.35 pounds of ashestos emitted on the worst case day during the Early Phase. Assuming that all ACM removal would occur in the first phase, there would be no asbestos emissions in suhsequent phases. There are no significance criteria for asbestos emissions; however, asbestos is a carcinogenic air contaminant. As stated in Section 4.11 of this EIS/EIR, ACM removal would he in accordance with applicahle regulations. The applicable SCAQMD regulation is Rule 1403, *Asbestos Emissions from Demolition/Renovation Activities.* As noted in the SCAQMD CEQA Handbook (1993), compliance with Rule 1403 would reduce the asbestos emissions to a less than significant level.

Operation

Buildout under the Alternative 1 would result in pollutant emissions from vehicular travel and from regional power plants and facilities (off-site stationary sources) which would supply electricity and natural gas for the site. As discussed in Section 4.12 of this EIS/EIR , implementation of Alternative 1 would result in an estimated 108,452 ADT in year 2005, and 215,093 ADT at huildout (2020). Table 4.13-5 shows the estimated operational stationary and vehicular source air emissions for each of the development phases of Alternative 1. As noted in the footnote, "reduced emissions" assume implementation of SCAQMD control measures. Control efficiencies for reduced emissions are as follows: 7.1 percent for ROC; 9.1 percent for No_x; 9.1 percent for CO and 9.1 percent for PM_{10} for commercial/business land use; and 4.1 percent for ROC, No_x, CO, and PM_{10} for residential land use. As would be expected, with the occupation of the reuse area, ADT and vehicle miles traveled would increase with each phase. The emissions for certain pollutants, however, would not always increase. The variability is due to emission factors which decline in future years to offset the increase in vehicle use.

With implementation of Alternative 1, CO, NO_X, and ROC net operational emissions would exceed SCAQMD significance criteria in each of the five phases of development. SO_X emissions would exceed the significance criteria in the last two phases. Control and mitigation measures would reduce overall CO, NO_X, and ROC emissions, but not below SCAQMD significance criteria, except for ROC during the 2006-2010 period.

Table 4.13-5
Alternative 1 Peak Operational Air Pollutant Emissions by Phase – Pounds per Day

	CO	ROC	NO_X	PM_{10}	SO_X
Early Phase (by 2005)					
Gross emissions	20,543	1,270	2,947	235	161
Gross reduced emissions	19,218	1,202	2,778	221	161
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~13,760~~	~~380~~	~~1,642~~	~~88~~	~~67~~
	14,298	545	1,553	71	86
Net reduced emissions	~~12,435~~	~~312~~	~~1,473~~	~~74~~	~~67~~
	12,973	477	1,523	57	86
Middle Phase I (2006-2010)					
Gross emissions	18,201	1,016	3,114	79	193
Gross reduced emissions	17,042	962	2,942	75	193
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~11,418~~	~~126~~	~~1,809~~	~~-68~~	~~99~~
	11,956	291	1,859	-85	118
Net reduced emissions	~~10,259~~	~~72~~	~~1,637~~	~~-72~~	~~99~~
	10,797	237	1,687	-89	118
Middle Phase II (2011-2015)					
Gross emissions	16,122	1,068	3,676	96	257
Gross reduced emissions	15,060	1,009	3,471	90	257
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~9,339~~	~~178~~	~~2,371~~	~~-51~~	~~163~~
	9,877	343	2,421	-68	182
Net reduced emissions	~~8,277~~	~~119~~	~~2,166~~	~~-57~~	~~163~~
	8,815	284	2,216	-74	182
Later Phase (2016-2020)					
Gross emissions	20,132	1,626	4,201	106	284
Gross reduced emissions	18,742	1,533	3,955	99	284
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~13,349~~	~~736~~	~~2,896~~	~~-41~~	~~190~~
	13,887	901	2,946	-58	209
Net reduced emissions	~~11,959~~	~~643~~	~~2,650~~	~~-48~~	~~190~~
	12,497	828	2,700	-65	209
Buildout					
Gross emissions	21,069	1,690	4,647	117	316
Gross reduced emissions	19,578	1,592	4,371	110	316
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~14,286~~	~~800~~	~~3,342~~	~~-30~~	~~222~~
	14,824	965	3,392	-47	241
Net reduced emissions	~~12,795~~	~~702~~	~~3,066~~	~~-37~~	~~222~~
	13,333	867	3,116	-54	241
SCAQMD Threshold	550	75	100	150	150

Note: "reduced emissions" are those that would result assuming implementation of required SCAQMD ~~from reductions associated with~~ control measures.

As described in Section 3.13 of this EIS/EIR, MCAS Tustin is a facility that is permitted to emit NO_X under RECLAIM. Total RECLAIM annual emissions allocations for MCAS Tustin are shown in Table 3.13-5, and the minimum allocation through 2010, 4,621 pounds per day, exceeds the maximum forecast emissions for the implementation of Alternative 1. Therefore, if the allocated credits are transferred to the reuse, the forecast NO_X emissions would not be significant. RECLAIM credits are not transferrable between RECLAIM and a non-RECLAIM source. The final disposition of the credits is unknown at this time.

The City of Tustin has implemented a TR/TDM plan (City of Tustin 1993) as part of the City's CMP to reduce automobile trips within the City of Tustin, reduce vehicular congestion, and improve air quality. As part of the plan, all new development projects with 100 or more employees, and expanded projects where additional square footage will result in a total of 100 or more employees, are required to prepare a TR/TDM strategy plan to achieve this goal. The City of Irvine also has implemented a TDM program. Due to the requirements of the traffic model, only some of the reductions in vehicular trips associated with the implementation of TR/TDM plans were accounted for in the traffic study. Additional reductions in vehicular trips beyond those accounted for in the traffic study would result from implementation of the TR/TDM plans. These reductions would reduce forecast CO, NO_X, and ROC vehicular emissions, though not below SCAQMD significance criteria.

Both the City of Tustin and the City of Irvine have bicycle transportation plans and policies, as discussed in Section 3.12. The availability of existing and future bicycle transportation infrastructure in the area on the site, particularly Class I bikeways, would encourage some people to use bicycles instead of cars and result in some reduction in vehicular emissions, though not below SCAQMD significance thresholds.

The City of Tustin General Plan (1994a) includes policies that may result in some reduction in operational off-site air emissions. These policies include efforts to promote energy conservation (Policy 4.1) and local recycling of wastes and use of recycled materials (Policy 4.2). These policies are implemented on a city-wide basis.

CO "Hot Spot"

Implementation of Alternative 1 would add vehicular trips and could adversely impact several roadways' LOS. Therefore, the potential exists for localized carbon monoxide (CO) hot spots. A CO hot spot is created when sensitive receptors are exposed to CO levels that exceed either state or

federal CO standards (SCAQMD 1993). The state standards for CO are an average of 9.0 ppm over a 8-hour period and an average of 20 ppm over a 1-hour period. The federal standards for CO are an average of 9.0 ppm over a 8-hour period, and an average of 35 ppm over a 1-hour period.

In order to determine if implementation of Alternative 1 would result in CO levels that exceed these standards, the three intersections with the worst LOS and highest a.m. peak hour traffic volumes were chosen for analysis. Both years 2005 and 2020 were analyzed, the years for which forecast traffic data were available (Section 4.12 and Appendix F of this EIS/EIR).

For the year 2005, two of the three intersections with the highest traffic volume would also have the highest LOS. Therefore, the following four intersections were selected for analysis: Jamboree Road and Barranca Parkway, Jamboree Road and Michelson Drive, Grand Avenue and Edinger Avenue, and Von Karman Avenue and Barranca Parkway.

In the year 2020, one of the three intersections with the highest traffic volume would also have the highest LOS. Therefore, five intersections were analyzed: Jamboree Road and Barranca Parkway, Jamboree Road and Michelson Drive, Tustin Ranch Road and Walnut Avenue, Culver Drive and Irvine Center Drive, and Grand Avenue and Edinger Avenue.

The CALINE-4 dispersion model was used to estimate the CO concentrations from vehicular exhaust at these intersections. Receptor locations were established at 20, 60, and 80 feet from the outer edges of each of the selected roadways.

As shown in Tables 4.13-6 and 4.13-7, the CALINE-4 model demonstrates that CO levels would not be expected to exceed state or federal standards at 20 feet from the outer edges of the selected roadways. CO concentrations would be less at distances greater than at 20 feet. Because no sensitive receptor would be located closer than 20 feet from the outer edges of these roadways, no sensitive receptors at these intersections would be expected to be exposed to CO hot spots in the years 2005 and 2020. Further, because the USEPA guidance indicates that the greatest potential for CO hot spots would occur at the selected intersections, it may be inferred there would be no hot spots at the remainder of the intersection affected by Alternative 1 traffic. Therefore, the CO impact would be less than significant.

Table 4.13-6
Alternative 1 2005 Estimated Peak CO Concentrations at Selected Intersections[1]

Intersection	Estimated Peak 1-hour Concentration (ppm)		State/Federal 1-hour Standard (ppm)	Exceeds Standard?	Estimated Peak 8-hour Concentration (ppm)		State/Federa l 8-hour Standard (ppm)	Exceeds Standard?
	Back-Ground	With Project			Back-Ground	With Project		
Jamboree and Barranca	7.7	13.1	20/35	No	4.6	7.9	9/9	No
Jamboree and Michelson	7.7	13.8	20/35	No	4.6	8.3	9/9	No
Grand and Edinger	7.7	11.9	20/35	No	4.6	7.1	9/9	No
Von Karman and Barranca	7.7	10.6	20/35	No	4.6	6.4	9/9	No

[1] All concentrations reported at 20 feet from roadway edge.

Table 4.13-7
Alternative 1 2020 Estimated Peak CO Concentrations at Selected Intersections [1]

Intersection	Estimated Peak 1-hour Concentration (ppm)		State/ Federal 1-hour Standard (ppm)	Exceeds Standard?	Extimated Peak 8-hour Concentration (ppm)		State/ Federal 8-hour Standard (ppm)	Exceeds Standard?
	Back-Ground	With Project			Back-Ground	With Project		
Jamboree and Barranca	7.7	11.8	20/35	No	4.6	7.9	9/9	No
Jamboree and Michelson	7.7	11.6	20/35	No	4.6	8.3	9/9	No
Tustin Ranch and Walnut	7.7	10.5	20/35	No	4.6	6.3	9/9	No
Culver and Irvine Center	7.7	10.4	20/35	No	4.6	6.2	9/9	No
Grand and Edinger	7.7	11.0	20/35	No	4.6	6.6	9/9	No

[1] All concentrations reported at 20 feet from roadway edge.

Air Toxics

Some land uses which may be developed in Alternative 1 may generate air contaminants (other than the criteria pollutants discussed above) that have the potential to harm human health and the environment. The actual amount of these air contaminants cannot be quantified due to a lack of information about specific business uses that may locate in the reuse plan area.

Unless otherwise specified, proposed operations which would emit air pollutants are required to obtain SCAQMD permits (Authority to Construct and Permit to Operate) prior to construction and operation. Exemptions are specified in SCAQMD Rules and Regulations, particularly Rule 219, and are often dependent on the proposed size of facilities or anticipated quantity of emissions. Permits are often required for dry cleaners and gasoline service stations, as well as for certain industries.

These uses would comply with SCAQMD Rules 1421, 1401, and 1402, which would ensure that sensitive receptors that exist at the time the facility is permitted would not be exposed to or burdened by health risks associated with unacceptable (as determined by SCAQMD, the State of California, or USEPA) exposure to toxic air contaminants. After the permit is granted, the SCAQMD would verify, through its compliance and inspection program, that no new sensitive receptors would be exposed to these contaminants.

If, upon consultation, the SCAQMD determines that the proposed business use requires a Rule 1401 permit, the applicant would be required to submit an Air Toxic Emissions Inventory Plan to SCAQMD for approval, in conformance with California Air Toxics Hot Spots Information and Assessment Act of 1987. The permit would be granted on the basis of an independent environmental analysis conducted according to CEQA Guidelines. Part of this analysis would include a public health risk screening assessment of the area within ¼ mile of the proposed use. If SCAQMD approves the inventory plan and grants the Rule 1401 permit, updates of the plan would be submitted every two years. The permit would allocate maximum annual and/or daily amounts of emissions to the individual emitter. Compliance with SCAQMD Rule 1401 would provide adequate safety from exposure to toxic air contaminants for existing and future sensitive receptors on the site.

Consistency with Air Quality Management Plan

The SCAQMD requires that an EIR discuss a project's consistency with the current regional Air Quality Management Plan and other regional plans. The purpose of the consistency finding is to determine whether an alternative would be is consistent with the assumptions and objectives of the regional air quality plans, and thus whether it would interfere with the region's ability to comply with federal and state air quality standards.

Future closure of MCAS Tustin was acknowledged in the 1994 AQMP Draft EIR (SCAQMD 1994b). However, no data has been found to demonstrate that emissions associated with reuse at an intensity comparable with the action proposed in Alternative 1 were included in the 1994 AQMP. Nor has data been found that reuse emissions were included in the 1997 AQMP or the 2000 AQMP, now in preparation. To the contrary, data obtained from SCAG indicates that forecasts for employment within the reuse area used for the 1997 AQMP were significantly less than subsequently included in OCP-96 Modified projections, and projected for Alternative 1 (SCAG 1999). Therefore, Alternative 1 would not be consistent with the 1994 and 1997 AQMPs. This would be a significant, unmitigable impact.

Mitigation Measnres

Construction

There would be significant air quality impacts from PM_{10} and ROC emissions during each phase. The following mitigation measures should be included in project development plans to minimize construction air quality impacts, but would not reduce the impact below a level of significance.

AQ-1 If determined feasible and appropriate on a project-by-project basis, the City of Tustin and the City of Irvine, as applicable, shall require individual development projects to implement one or more of the following control measures, if not already required by the SCAQMD under Rule 403:

- Apply water twice daily, or chemical soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces at all actively disturbed sites.
- Develop a construction traffic management plan that includes, but is not limited to, rerouting construction trucks off congested streets, consolidating truck deliveries, and providing dedicated turn lanes for movement of construction trucks and equipment onsite and offsite.
- Use electricity from power poles rather than temporary diesel or gasoline powered generators.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.
- Pave construction roads that have a traffic volume of more than 50 daily trips by construction equipment or 150 total daily trips for all vehicles.
- Apply approved chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for four days or more).
- Replace ground cover in disturbed areas as quickly as possible.
- Enclose, cover, water twice daily, or apply approved soil binders according to manufacturers' specifications, to exposed piles of gravel, sand, or dirt.

- Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and top of the trailer).
- Sweep streets at the end of the day if visible soil material is carried over to adjacent roads (use water sweepers with reclaimed water when feasible).
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

AQ-2 Unless determined by the City of Tustin and the City of Irvine, as applicable, to be infeasible on a project-by-project basis due to unique project characteristics, each city shall require individual development projects to use low VOC architectural coatings for all interior and exterior painting operations.

Operation

There would be significant operational air quality impacts that cannot be fully mitigated. In order to minimize emissions as much as possible, the following mitigation measures should be included in project development plans:

AQ-3 Prior to the issuance of development permits for new non-residential projects with 100 or more employees, and expanded projects where additional square footage would result in a total of 100 or more employees, the City of Tustin and the City of Irvine, as applicable, shall impose a mix of TDM measures which, upon estimation, would result in an average vehicle ridership of at least 1.5, for each development with characteristics that would be reasonably conducive to successful implementation of such TDM measures. These TDM measures may include one or more of the following, as determined appropriate and feasible by each city on a case-by-case basis:

- Establish preferential parking for carpool vehicles.
- Provide bicycle parking facilities.
- Provide shower and locker facilities.
- Provide carpool and vanpool loading areas.
- Incorporate bus stop improvements into facility design.
- Implement shuttles to shopping, eating, recreation, and/or parking and transit facilities.
- Construct remote parking facilities.

- Provide pedestrian circulation linkages.
- Construct pedestrian grade separations.
- Establish carpool and vanpool programs.
- Provide cash allowances, passes, and other public transit and purchase incentives.
- Establish parking fees for single occupancy vehicles.
- Provide parking subsidies for rideshare vehicles.
- Institute a computerized commuter rideshare matching system.
- Provide a guaranteed ride-home program for ridesharing.
- Establish alternative work week, flex-time, and compressed work week schedules.
- Establish telecommuting or work-at-home programs.
- Provide additional vacation and compensatory leave incentives.
- Provide on-site lunch rooms/cafeterias and commercial services such as banks, restaurants, and small retail.
- Provide on-site day care facilities.
- Establish an employee transportation coordinator(s).

AQ-4 If not required under each individual development's TDM plan, the City of Tustin and the City of Irvine, as applicable, shall implement the following measures, as determined appropriate or feasible by each city on a case-by-case basis:

- Reschedule truck deliveries and pickups for off-peak hours.
- Implement lunch shuttle service from a worksite(s) to food establishments.
- Implement compressed work week schedules where weekly work hours are compressed into fewer than five days, such as 9/80, 4/40, or 3/36.
- Provide on-site child care and after-school facilities or contribute to off-site developments within walking distance.
- Provide on-site employee services such as cafeterias, banks, etc.
- Implement a pricing structure for single-occupancy employee parking, and/or provide discounts to ridesharers.
- Construct off-site pedestrian facility improvements such as overpasses and wider sidewalks.
- Include retail services within or adjacent to residential subdivisions.
- Provide shuttles to major rail transit centers or multi-modal stations.
- Contribute to regional transit systems (e.g., right-of-way, capital improvements, etc.).
- Synchronize traffic lights on streets impacted by development.

- Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes.
- Include residential units within a commercial development.
- Provide off-site bicycle facility improvements, such as bicycle trails linking the facility to designated bicycle commuting routes, or on-site improvements, such as bicycle paths.
- Include bicycle parking facilities such as bicycle lockers.
- Include showers for bicycling and pedestrian employees' use.
- Construct on-site pedestrian facility improvements, such as building access which is physically separated from street and parking lot traffic, and walk paths.

4.13.5 Alternative 2

Impacts

Construction

Construction emissions from the development of Alternative 2 would be similar to those that would result from the development of Alternative 1. Like Alternative 1, a golf course would be developed in the Early Phase, which would result in PM_{10} emissions that exceed SCAQMD daily and quarterly significance criteria during that phase. Because more development activity would occur during the first three phases compared to Alternative 1, higher peak daily and quarterly emissions would result from the development of Alternative 2. Therefore, it is estimated that PM_{10} emissions from Alternative 2 would exceed SCAQMD daily and quarterly significance criteria during the first three phases, while ROC would exceed daily and quarterly significance criteria during each phase. NOx emissions from Alternative 2 would also be expected to exceed SCAQMD quarterly thresholds in each phase except the later phase and final phase, and daily thresholds during the early phase. Construction emissions from Alternative 2 would exceed those estimated for Alternative 1.

Operation

Development of Alternative 2 would generate air pollutants from vehicular emissions, and emissions associated with production and use of electricity and natural gas. In the years 2005 and 2020, this alternative would result in approximately 108,246 ADT and 260,918 ADT, respectively.

The additional residential development incorporated under Alternative 2 would result in approximately 45,825 more daily vehicular trips than number of trips associated with Alternative 1 at buildout (2020). Operational air pollutant emissions for Alternative 2 are summarized in Table 4.13-8.

As seen in Table 4.13-8, CO, NO_X, and SO_X emissions would exceed SCAQMD significance criteria in each of the development phases. At buildout of Alternative 2, CO, NO_X, PM_{10}, and SO_X emissions would be higher than Alternative 1, due to the vehicular trips associated with the larger number of residential units under this alternative.

CO "Hot Spot"

Like Alternative 1, traffic conditions under Alternative 2 would not present the combination of roadway geometrics, traffic volumes, and LOS levels that would be necessary for the CALINE-4 model to demonstrate CO levels that exceed state and federal CO 8- and 1-hour standards.

No CO hot spots would be created under this alternative, and there would be no significant impact.

Air Toxics

Like Alternative 1, Alternative 2 would include research and development uses that may generate toxic air emissions. The actual amount of these emissions was not quantified because there are no specific business operations proposed at this time. However, these emissions would likely be similar to those under Alternative 1. All emitters of air toxic emissions would comply with SCAQMD Rules and regulations, as applicable.

Consistency with Air Quality Management Plan

As described for Alternative 1, no data has been found to demonstrate that emissions associated with reuse at an intensity comparable with the action proposed in Alternative 2 were included in the 1994 AQMP. Nor has data been found that reuse emissions were included in the 1997 AQMP or the 2000 AQMP, now in preparation. Therefore, Alternative 2 would not be consistent with the 1994 and 1997 AQMPs, which would be a significant impact.

Table 4.13-8
Alternative 2 Peak Operational Air Pollutant Emissions by Phase – Pounds per Day

	CO	ROC	NO_X	PM_{10}	SO_X
Early Phase (by 2005)					
Gross emissions	19,180	1,208	2,746	213	149
Gross reduced emissions	17,757	1,135	2,566	198	149
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~12,397~~	~~318~~	~~1,441~~	~~66~~	~~55~~
	12,935	483	1,491	49	74
Net reduced emissions	~~10,974~~	~~245~~	~~1,261~~	~~51~~	~~55~~
	11,512	410	1,311	34	74
Middle Phase I (2006-2010)					
Gross emissions	21,130	1,194	3,593	91	222
Gross reduced emissions	19,642	1,125	3,373	85	222
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~14,347~~	~~304~~	~~2,288~~	~~-56~~	~~128~~
	14,885	469	2,338	-73	147
Net reduced emissions	~~12,859~~	~~235~~	~~2,068~~	~~-62~~	~~128~~
	13,397	400	2,118	-79	147
Middle Phase II (2011-2015)					
Gross emissions	23,780	1,611	5,194	135	360
Gross reduced emissions	22,042	1,514	4,866	126	360
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~16,997~~	~~721~~	~~3,889~~	~~-12~~	~~266~~
	17,535	886	3,939	-29	285
Net reduced emissions	~~15,259~~	~~624~~	~~3,561~~	~~-21~~	~~266~~
	15,797	789	3,611	-38	285
Later Phase (2016-2020)					
Gross emissions	26,879	2,203	5,405	135	361
Gross reduced emissions	24,900	2,070	5,063	126	361
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~20,096~~	~~1,313~~	~~4,100~~	~~-12~~	~~267~~
	20,634	1,478	4,150	-29	286
Net reduced emissions	~~18,117~~	~~1,180~~	~~3,758~~	~~-21~~	~~267~~
	18,655	1,345	3,808	-38	286
Buildout					
Gross emissions	26,004	2,103	5,496	138	370
Gross reduced emissions	24,100	1,977	5,146	129	370
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~19,221~~	~~1,213~~	~~4,191~~	~~-9~~	~~276~~
	19,759	1,378	4,241	-26	295
Net reduced emissions	~~17,317~~	~~1,087~~	~~3,841~~	~~-18~~	~~276~~
	17,855	1,252	3,891	-35	295
SCAQMD Threshold	550	75	100	150	150

Note: "reduced emissions" are those that would result assuming implementation of required SCAQMD ~~from reductions associated with~~ control measures.

Mitigation Measures

Mitigation measures AQ-1, AQ-2, AQ-3, and AQ-4 would also apply to Alternative 2. They would not reduce impacts below a level of significance.

4.13.6 Alternative 3

Impacts

Construction

Construction emissions from the development of Alternative 3 would be similar to those that would result from the development of Alternative 1. Like Alternative 1, a golf course would be developed in the Early Phase, which would result in PM_{10} emissions that exceed SCAQMD daily and quarterly significance criteria during that phase. PM_{10} emissions would also be expected to exceed SCAQMD daily and quarterly significance criteria during the second and third phases. NOx emissions from Alternative 3 would also be expected to exceed SCAQMD quarterly thresholds in each phase except the final phase, and daily thresholds during the early phase. Also, similar to Alternative 1, painting activities under Alternative 3 would result in peak daily and quarterly ROC emissions that exceed SCAQMD significance criteria in each of the development phases. Construction emissions from Alterative 3 would be slightly lower than those estimated for Alternative 1.

Operation

Development of Alternative 3 would generate air pollutants from vehicular emissions, and emissions associated with production and use of electricity and natural gas. In the years 2005 and 2020, this alternative will result in approximately 114,534 ADT and 288,187 ADT, respectively. More residential development and a larger shopping center development under Alternative 3 would result in approximately 78,173 more vehicular trips than the number of trips associated with Alternative 1 at buildout (2020). Operational air pollutant emissions for Alternative 3 are summarized in Table 4.13-9.

As seen in Table 4.13-9, CO, NO_X, and SO_X emissions would exceed SCAQMD significance criteria in each of the development phases. At buildout of Alternative 3, CO, NO_X, PM_{10}, and SO_X emissions would be higher than Alternative 1 due to the increased number of vehicular trips associated with the larger amount of residential and commercial development under this alternative.

Table 4.13-9
Alternative 3 Peak Operational Air Pollutant Emissions by Phase – Pounds per Day

	CO	ROC	NO_X	PM_{10}	SO_X
Early Phase (by 2005)					
Gross emissions	20,768	1,297	2,868	229	155
Gross reduced emissions	19,598	1,237	2,719	216	155
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~13,985~~	~~407~~	~~1,563~~	~~82~~	~~61~~
	14,523	572	1,613	65	80
Net reduced emissions	~~12,815~~	~~347~~	~~1,414~~	~~69~~	~~61~~
	13,353	512	1,464	52	80
Middle Phase I (2006-2010)					
Gross emissions	20,306	1,138	3,392	86	210
Gross reduced emissions	19,191	1,086	3,226	82	210
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~13,523~~	~~248~~	~~2,087~~	~~-61~~	~~116~~
	14,061	413	2,137	-78	135
Net reduced emissions	~~12,408~~	~~196~~	~~1,921~~	~~-65~~	~~116~~
	12,946	361	1,971	-82	135
Middle Phase II (2011-2015)					
Gross emissions	20,104	1,358	4,352	113	302
Gross reduced emissions	18,824	1,287	4,111	106	302
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~13,321~~	~~468~~	~~3,047~~	~~-34~~	~~208~~
	13,859	633	3,097	-51	227
Net reduced emissions	~~12,041~~	~~397~~	~~2,806~~	~~-41~~	~~208~~
	12,579	562	2,856	-58	227
Later Phase (2016-2020)					
Gross emissions	27,679	2,300	5,400	133	359
Gross reduced emissions	25,774	2,172	5,076	125	359
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~20,896~~	~~1,410~~	~~4,095~~	~~-14~~	~~265~~
	21,434	1,575	4,145	-31	284
Net reduced emissions	~~18,991~~	~~1,282~~	~~3,771~~	~~-22~~	~~265~~
	19,529	1,447	3,821	-39	284
Buildout					
Gross emissions	26,361	2,150	5,532	138	371
Gross reduced emissions	24,516	2,028	5,195	130	371
Baseline emissions	~~6,783~~	~~890~~	~~1,305~~	~~147~~	~~94~~
	6,245	725	1,255	164	75
Net emissions	~~19,578~~	~~1,260~~	~~4,227~~	~~-9~~	~~277~~
	20,116	1,425	4,277	-26	296
Net reduced emissions	~~17,733~~	~~1,138~~	~~3,890~~	~~-17~~	~~277~~
	18,271	1,303	3,940	-34	296
SCAQMD Threshold	550	75	100	150	150

Note: "reduced emissions" are those that would result assuming implementation of required SCAQMD ~~from reductions associated with~~ control measures.

CO "Hot Spot"

Like Alternative 1, traffic conditions under Alternative 3 would not present the combination of roadway geometrics, traffic volumes, and LOS levels that would be necessary for the CALINE-4 model to demonstrate CO levels that exceed state and federal CO 8- and 1-hour standards.

No CO hot spots would be created under this alternative, and there would be no significant impact.

Air Toxics

Like Alternative 1, Alternative 3 would include research and development uses that may generate toxic air emissions. The actual amount of these emissions was not quantified because there are no specific business operations proposed at this time. However, these emissions would likely be similar to those under Alternative 1. All emitters of air toxic emissions would comply with SCAQMD Rules and regulations, as applicable.

Consistency with Air Quality Management Plan

As described for Alternative 1, no data has been found to demonstrate that emissions associated with reuse at an intensity comparable with the action proposed in Alternative 3 were included in the 1994 AQMP. Nor has data been found that reuse emissions were included in the 1997 AQMP or the 2000 AQMP, now in preparation. Therefore, Alternative 3 would not be consistent with the 1994 and 1997 AQMPs, which would be a significant impact.

Mitigation Measures

Mitigation measures AQ-1, AQ-2, AQ-3, and AQ-4 would also apply to Alternative 3. They will not reduce impacts below a level of significance.

4.13.7 No Action Alternative

The No Action Alternative would result in virtually no air pollutant emissions. The site would be retained under federal ownership under a caretaker maintenance program. No operations other than minimal maintenance and security would occur. As a result, this alternative would have a beneficial impact on air quality because it would eliminate the majority of existing air pollutant emissions associated with the site and would not generate new emissions.

Mitigation Measures

No mitigation is required because the impact on air quality would be beneficial.

4.14 NOISE

This section discusses noise impacts resulting from DON's disposal of MCAS Tustin, civilian reuse of the reuse plan area, or caretaker status (No Action). Existing and future noise levels along roadways in the reuse plan area and surrounding areas were projected using data from a traffic study prepared for the proposed MCAS Tustin Reuse Plan (AFA 1999), Appendix F, and employing the methodology from the Federal Highway Administration's "Highway Traffic Noise Prediction Model" (FHWA 1978). Noise impacts are analyzed considering a full build-out condition for each of the reuse alternatives. Traffic noise levels were estimated for the roadways discussed in Section 4.12 (Traffic/Circulation). Technical terms used in this section are defined in Section 3.14 (Noise) of this EIS/EIR. Noise level calculations are indicated in tables to tenths of a dB; noise levels in the text are rounded to the nearest whole dB.

4.14.1 Significance Criteria

Noise impacts would be considered significant if noise levels experienced by sensitive receptors would exceed those considered "normally acceptable" for the applicable land use categories in the Noise Elements of the General Plans for the cities of Tustin, Irvine, and Santa Ana (see Tables 3.14-2, 3.14-3, and 3.14-4 in Chapter 3). Residences, schools, libraries, hospitals, and recreational areas are generally considered sensitive noise receptors. Existing on-site residential developments are considered sensitive noise receptors. New development within the reuse area would include sensitive noise receptors, such as residences and schools. The area surrounding the site contains numerous sensitive receptors in the cities of Irvine, Tustin, Santa Ana, and the unincorporated County of Orange. In the case where existing noise levels already exceed normally acceptable levels for any given land use category, then an increase of 3 dB CNEL or greater noise levels experienced by a sensitive receptor would be considered a significant impact (City of San Diego 1994).

4.14.2 DON Disposal of MCAS Tustin

Impacts

DON disposal of MCAS Tustin, which involves a transfer of title, in and of itself would not have a significant noise impact. Disposal is simply a transfer of title and would not generate or reduce aircraft operations or vehicular trips and associated noise.

Mitigation Measures

Disposal of MCAS Tustin would result in less than significant noise impacts, and no mitigation measures would be required.

4.14.3 Alternative 1

Impacts

With implementation of Alternative 1, there would be no aircraft operations occurring in the reuse area. In the baseline condition, aircraft noise levels within most of the reuse area exceeded 65 dBA CNEL, as shown in Figure 3.14-1 of this EIS/EIR. Therefore, the elimination of aircraft operations proposed by Alternative 1 would result in the elimination of the associated noise and a reduction in the overall noise levels within and around the reuse area. This would be a beneficial impact.

Implementation of Alternative 1 would result in additional vehicular noise from traffic generated by new development. Projected vehicle noise levels along major roadways in the area are summarized in Table 4.14-1. Noise levels would also increase in the future without implementation of Alternative 1. As shown in the second to last column in Table 4.14-1, traffic from future cumulative development without Alternative 1 (future baseline condition) would add up to ~~4~~ 7 dB CNEL along existing roadways at a distance of 75 feet from the roadway's centerline. With the implementation of Alternative 1, development closest to major roadways would be affected by noise of 70 dB CNEL or higher. The highest noise levels, ranging from 71 to 74 dB CNEL, are projected along portions of Irvine Boulevard, Tustin Ranch Road, Warner Avenue, Red Hill Avenue, Jamboree Road, and Barranca Parkway. All except Tustin Ranch Road south of Walnut Avenue are existing roadways that carry relatively heavy traffic volumes which generate existing noise levels between 70 and 74 dB CNEL. As shown in the last column of the table, implementation of Alternative 1 would change noise levels on existing major roadways, with increases greater than 3 dB CNEL on four segments: Valencia Avenue west of Red Hill Avenue (City of Tustin), Warner Avenue west of Red Hill Avenue (cities of Tustin and Santa Ana), Warner Avenue east of Grand Avenue (City of Santa Ana), and Warner Avenue west of Harvard Avenue (City of Irvine). All of the areas affected by these noise levels are designated as either Professional Office (City of Tustin), Industrial (cities of Tustin and Santa Ana), or Business and Industrial or Urban and Industrial (City of Irvine) under the respective city's general plan land use designations. The Tustin General Plan Noise Element (1994),

Table 4.14-1
Alternative 1 Noise Impacts From On-site Development and Cumulative Traffic

Roadway Segment [1]	24-hour Traffic Volume			Noise Level (CNEL or Ldn) at Distance from Roadway Centerline										
				Existing Baseline			Future Baseline			Future Baseline Plus Alternative 1			Baseline Change From Existing	Change due to Project
	Existing Baseline	Future Baseline Without Project	Future Baseline Plus Project	75 feet	200 feet	500 feet	75 feet	200 feet	500 feet	75 feet	200 feet	500 feet		
TUSTIN/REUSE PLAN AREA														
Valencia e/o Red Hill		10,000	22,000	–	–	–	65.1	58.2	52.2	68.5	61.6	55.6	–	+3.4
Loop N e/o Armstrong			9,000	–	–	–	–	–	–	64.6	57.7	51.7	–	–
Loop N w/o Tustin Ranch			14,000	–	–	–	–	–	–	66.6	59.7	53.6	–	–
Loop N e/o Tustin Ranch			8,000	–	–	–	–	–	–	64.1	57.2	51.2	–	–
Loop S e/o Armstrong			12,000	–	–	–	–	–	–	65.9	59.0	52.9	–	–
Loop S w/o Tustin Ranch			20,000	–	–	–	–	–	–	68.1	61.2	55.2	–	–
Loop S s/o Warner			6,000	–	–	–	–	–	–	62.9	56.0	49.9	–	–
Moffett e/o Loop		1,000	6,000	–	–	–	55.1	48.2	42.2	62.9	56.0	49.9	–	+7.8
Tustin Ranch s/o Edinger			27,000	–	–	–	–	–	–	69.4	62.5	56.5	–	–
Tustin Ranch s/o Loop N			25,000	–	–	–	–	–	–	69.1	62.2	56.1	–	–
Tustin Ranch s/o Warner			38,000	–	–	–	–	–	–	70.9	64.0	58.0	–	–
Tustin Ranch s/o Loop S			39,000	–	–	–	–	–	–	71.0	64.1	58.1	–	–
Warner e/o Red Hill			51,000	–	–	–	–	–	–	72.2	65.3	59.2	–	–
Warner e/o Armstrong			43,000	–	–	–	–	–	–	71.4	64.5	58.5	–	–
Warner e/o Tustin Ranch			20,000	–	–	–	–	–	–	68.1	61.2	55.2	–	–
Armstrong n/o Barranca			6,000	–	–	–	–	–	–	62.9	56.0	49.9	–	–
Armstrong n/o Loop S			9,000	–	–	–	–	–	–	64.6	57.7	51.7	–	–
Armstrong n/o Warner			11,000	–	–	–	–	–	–	65.5	58.6	52.6	–	–
TUSTIN/OFF SITE														
Irvine w/o Jamboree	26,000	45,000	44,000	69.2	62.3	56.3	71.6	64.7	58.7	71.5	64.6	58.6	+2.3	-0.1
Tustin Ranch s/o I-5	18,000	32,000	44,000	67.7	60.7	54.7	70.1	63.2	57.2	71.5	64.6	58.6	+3.9	+1.4
Tustin Ranch s/o Walnut			40,000	–	–	–	–	–	–	71.1	64.2	58.2	–	–
Valencia w/o Red Hill	4,000	8,000	17,000	61.1	54.2	48.2	64.1	57.2	51.2	67.4	60.5	54.5	+6.3	+3.3
TUSTIN/SANTA ANA														
Red Hill n/o Dyer/Barranca	31,000	26,000	33,000	70.0	63.1	57.1	69.2	62.3	56.3	70.3	63.4	57.3	+0.3	+1.0
Warner w/o Red Hill	15,000	12,000	39,000	66.9	60.0	53.9	65.9	59.0	52.9	71.0	64.1	58.1	+4.1	+5.1
Barranca e/o Red Hill	33,000	34,000	46,000	70.3	63.4	57.3	70.4	63.5	57.5	71.7	64.8	58.8	+1.4	+1.3
TUSTIN/IRVINE														
Barranca w/o Von Karman		30,000	41,000	–	–	–	69.9	63.0	56.9	71.2	64.3	58.3	–	+1.4
Barranca w/o Jamboree	29,000	29,000	44,000	69.7	62.8	56.8	69.7	62.8	56.8	71.5	64.6	58.6	+1.8	+1.8
Harvard n/o Irvine Center	10,000	10,000	12,000	65.1	58.2	52.2	65.1	58.2	52.2	65.9	59.0	52.9	+0.8	+0.8
Harvard s/o Irvine Center	10,000	9,000	14,000	65.1	58.2	52.2	64.6	57.7	51.7	66.6	59.7	53.6	+1.5	+1.9
Harvard n/o Warner	10,000	8,000	11,000	65.1	58.2	52.2	64.1	57.2	51.2	65.5	58.6	52.6	+0.4	+1.4
Jamboree n/o Barranca	34,000	78,000	86,000	70.4	63.5	57.5	74.0	67.1	61.1	74.4	67.5	61.5	+4.0	+0.4
SANTA ANA														
Warner e/o Grand	19,000	18,000	40,000	67.9	61.0	54.9	67.7	60.7	54.7	71.1	64.2	58.2	+3.2	+3.5
IRVINE														
Barranca e/o Jamboree	25,000	24,000	27,000	69.1	62.2	56.1	68.9	62.0	56.0	69.4	62.5	56.5	+0.3	+0.5
Irvine e/o Jamboree	23,000	39,000	38,000	68.7	61.8	55.8	71.0	64.1	58.1	70.9	64.0	58.0	+2.2	-0.1
Warner e/o Harvard	3,000	9,000	15,000	59.9	53.0	46.9	64.6	57.7	51.7	66.9	60.0	53.9	+7.0	+2.2
Warner w/o Harvard	1,000	2,000	14,000	55.1	48.2	42.2	58.1	51.2	45.2	66.6	59.7	53.6	+11.5	8.5

[1] n/o = north of; s/o = south of; e/o = east of; w/o = west of

Santa Ana General Plan Noise Element (1997), and Irvine General Plan Noise Element (1997) consider a CNEL of up to 75 dB compatible for the uses that would be affected by these noise levels. ~~Therefore, this impact~~ Based on the designated land uses, these impacts would be less than significant.

With implementation of Alternative 1, noise levels at a distance of 75 feet from the centerline of Warner Avenue, between Harvard Avenue and Culver Drive, would increase from a future baseline noise level of approximately 65 dB CNEL to a noise level of approximately 67 dB CNEL. There are residential and park uses along this segment of roadway without noise barriers, and the Alternative 1 projected noise level could contribute to the exceedence of the City of Irvine standard of 65 dB CNEL, which would be a significant impact.

The extension of Tustin Ranch Road from Walnut Avenue to Edinger Avenue is a planned City of Tustin project and is not part of Alternative 1. This improvement is forecast to result in traffic noise levels of 71 dB CNEL 75 feet from the roadway centerline, which exceeds the land use compatibility standards for residential uses in the City of Tustin. There are existing single-family residences located along the proposed extension, which, at present, is a cleared corridor. Between the homes and the corridor there are existing walls or earthen berms. The grade separation of the Tustin Ranch Road/Edinger Avenue intersection would be included in Alternative 1. This action would likely result in the future roadway being located at an elevation higher than the existing corridor. In this case, homes adjacent to the elevated portion of Tustin Ranch Road may be exposed to noise levels that are greater than 65 dB CNEL, which would be a significant impact. Future vehicular noise (future baseline plus Alternative 1) from all other existing roadways analyzed in the traffic study (Appendix F) would not exceed the threshold of significance.

Within the reuse plan area, noise levels along future roadways would range from 63 to 72 dB CNEL at a distance of 75 feet from the roadway centerline. Areas affected by traffic noise from Warner Avenue along Harvard Avenue are located within the reuse plan area. The future projected noise levels and contours show that a portion of the existing military housing, which would be converted to civilian uses, would be located within the 70 dB CNEL contours of Jamboree Road and Harvard Avenue. A portion of the proposed bousing would also be affected by noise levels above 70 dB CNEL from vehicular traffic on Loop Road, Edinger Avenue, Tustin Ranch Road, Harvard Avenue, and Jamboree Road.

The most noise-sensitive uses within the reuse plan area would be residences and schools, which would be located in the northern and southern portion of the site, and would be affected by traffic noise from major roadways.

Proposed residential units within the reuse plan area adjacent to Edinger Avenue would be affected by noise from SRRCA/OCTA railroad operations and maintenance. This noise may occur at all hours of the day and night and may exceed 70 dB CNEL. The state requirements include a CNEL of 45 dB or less for interior multi-family residential spaces (with closed windows and proper ventilation). The General Plan Noise Elements for Tustin and Irvine require noise analysis and insulation (if necessary) in residences exposed to exterior noise levels of above 60 dB CNEL, with a CNEL above 65 dB considered "normally incompatible with residential uses."

As part of existing routine development conditions, the cities of Tustin and Irvine require, as applicable, all residential lots and new dwellings to be sound attenuated against present and projected noise so as not to exceed an exterior standard of 65 dB CNEL in outdoor living areas and an interior standard of 45 dB CNEL in all habitable rooms. Evidence that these standards would be satisfied in a manner consistent with applicable zoning regulations, prepared by a certified acoustical consultant, must be submitted to each city prior to issuance of any building permits. For non-residential structures, both cities require sound attenuation that meets the interior noise criteria specified in eacb city's general plan. Development applicants are required to provide evidence prepared by a certified acoustical consultant that these standards would be satisfied in a manner consistent with each city's applicable zoning regulations. These existing requirements, would result in adequate noise protection for future residential uses, including those units affected by SCRRA/OCTA railroad operations and maintenance noise.

Schools would be built in conformance with existing state requirements for school facilities, which would result in adequate noise protections for students and teacbers. The state requirements for interior noise levels would be met either through setting classrooms at appropriate distances from the roadways or insulating the school buildings. Since the proposed school sites are 10 or more acres in size, there would be enough flexibility for siting classrooms at adequate setbacks from the roadways. The TUSD and IUSD would be responsible for providing necessary noise attenuation for their facilities.

Summary of Impacts

Existing uses on other roadways surrounding the site would not experience noise levels that exceed those established as acceptable for the affected land use resulting from Alternative 1, and impacts would be less than significant. The proposed extension of Tustin Ranch Road to Von Karman Avenue could expose existing residences to noise levels greater than 65 dB CNEL. With implementation of Alternative 1 and other future development, noise levels at residential and park uses adjacent to Warner Avenue between Harvard Avenue and Culver Drive may be exposed to noise levels greater than 65 dB CNEL, a significant impact.

Within the reuse plan area, future noise-sensitive uses would be developed in accordance with applicable regulations and would have adequate noise protection; thus, this impact would be less than significant. Some existing on-site housing units planned for reuse would experience noise levels greater than 65 dB CNEL. Because these units would experience a noise level higher than that established for residential uses, this impact is considered significant. Therefore, prior to reuse for civilian housing, appropriate noise attenuation measures should be implemented to ensure that these units do not exceed applicable noise standards.

Mitigation Measures

The following mitigation measures shall be implemented to reduce the noise impacts of Alternative 1 to a level less than significant:

N-1 Prior to reuse of any existing residential units within the reuse area for civilian use, The City of Tustin or the City of Irvine, as applicable, and where necessary and feasible, shall require the installation of noise attenuation barriers, insulation, or similar devices to ensure that interior and exterior noise levels at these residential units do not exceed applicable noise standards.

N-2 During design of the grade-separated intersection of Tustin Ranch Road at Edinger Avenue, the City of Tustin sball evaluate potential noise impacts on surrounding properties to the northeast of Edinger Avenue and shall incorporate into the design of this intersection noise attenuation measures determined appropriate and feasible by the City of Tustin, in order to ensure that these surrounding properties do not experience noise levels that exceed City of Tustin noise standards.

N-3 For new development within the reuse area, The City of Tustin and City of Irvine, as applicable, shall ensure that interior and exterior noise levels do not exceed those prescribed by state requirements and local city ordinances and general plans. Plans demonstrating noise regulation conformity shall be submitted for review and approval prior to building permits being issued to accommodate reuse.

N-4 Prior to the connection of Warner Avenue to the North Loop Road or the South Loop Road, the City of Tustin shall conduct an acoustical study to assess reuse traffic noise impacts to existing sensitive receptors adjacent to Warner Avenue, between Harvard Avenue and Culver Drive. If mitigation of reuse traffic noise impacts is required, the City of Tustin and the City of Irvine shall enter into an agreement that defines required mitigation and which allocates the cost of mitigation between the City of Tustin and the City of Irvine on a fair share basis.

4.14.4 Alternative 2

Impacts

With implementation of Alternative 2, there would be no aircraft operations occurring in the reuse area. In the baseline condition, aircraft noise levels within most of the reuse area exceeded 65 dBA CNEL, as shown in Figure 3.14-1 of this EIS/EIR. Therefore, the elimination of aircraft operations proposed by Alternative 2 would result in the elimination of the associated noise and a reduction in the overall noise levels within and around the reuse area. This would be a beneficial impact.

Alternative 2 would result in traffic noise impacts along major streets, similar to Alternative 1. As shown in the last column of Table 4.14-2, implementation of Alternative 2 would add up to 9 dB CNEL to existing roadways over future baseline conditions. Traffic noise levels along these roadways would range from 66 to 72 dB CNEL at 75 feet from the street centerline.

Similar to Alternative 1, the same four roadways would experience more than a 3 dB CNEL increase but would not exceed land use compatibility levels established for the ~~affected~~ designated land use, as these roadways are located in commercial and industrial areas. Vehicular traffic along all other analyzed roadways, as discussed in Section 3.12 (Traffic/Circulation), would not result in more than a 3 dB CNEL increase in the future baseline plus Alternative 2 condition. There could be a significant impact on residential and park uses on Warner Avenue between Harvard Avenue and Culver Drive, as described for Alternative 1.

Table 4.14-2
Alternative 2 Noise Impacts From On-site Development and Cumulative Traffic

Roadway Segment	24-hour Traffic Volume			Noise Level (CNEL or Ldn) at Distance from Roadway Centerline										
				Existing Baseline			Future Baseline			Future Baseline Plus Alternative 2			Baseline Change From Existing	Change due to Project
	Existing Baseline	Future Baseline Without Project	Future Baseline Plus Project	75 feet	200 feet	500 feet	75 feet	200 feet	500 feet	75 feet	200 feet	500 feet		
TUSTIN/REUSE PLAN AREA														
Tustin Ranch s/o Edinger			37,000	–	–	–	–	–	–	70.8	63.9	57.8	–	–
Tustin Ranch s/o Valencia			24,000	–	–	–	–	–	–	68.9	62.0	56.0	–	–
Tustin Ranch s/o Warner			40,000	–	–	–	–	–	–	71.1	64.2	58.2	–	–
Tustin Ranch n/o Barranca			41,000	–	–	–	–	–	–	71.2	64.3	58.3	–	–
Valencia e/o Red Hill			31,000	–	–	–	–	–	–	70.0	63.1	57.1	–	–
Valencia w/o Armstrong			17,000	–	–	–	–	–	–	67.4	60.5	54.5	–	–
Valencia e/o Tustin Ranch			31,000	–	–	–	–	–	–	70.0	63.1	57.1	–	–
Valencia w/o Tustin Ranch			6,000	–	–	–	–	–	–	62.9	56.0	49.9	–	–
Moffett e/o Jamboree			8,000	–	–	–	–	–	–	64.1	57.2	51.2	–	–
Armstrong s/o Valencia			9,000	–	–	–	–	–	–	64.6	57.7	51.7	–	–
Armstrong s/o Warner			11,000	–	–	–	–	–	–	65.5	58.6	52.6	–	–
Armstrong n/o Barranca			7,000	–	–	–	–	–	–	63.5	56.6	50.6	–	–
Jamboree Ext n/o Warner			17,000	–	–	–	–	–	–	67.4	60.5	54.5	–	–
Jamboree Ext n/o Valencia			22,000	–	–	–	–	–	–	68.5	61.6	55.6	–	–
TUSTIN/OFF SITE														
Irvine w/o Jamboree	26,000	45,000	43,000	69.2	62.3	56.3	71.6	64.7	58.7	71.4	64.5	58.8	+2.2	-0.2
Tustin Ranch s/o I-5	18,000	32,000	47,000	97.7	60.7	54.7	70.1	63.2	57.2	71.8	64.9	58.9	+4.2	+1.7
Tustin Ranch s/o Walnut			45,000	–	–	–	–	–	–	71.6	64.7	58.7	–	–
Valencia w/o Red Hill	4,000	8,000	21,000	61.1	54.2	48.2	64.1	57.2	51.2	68.3	61.4	55.4	+7.2	+4.2
TUSTIN/SANTA ANA														
Red Hill n/o Dyer/Barranca	31,000	26,000	35,000	70.0	63.1	57.1	69.2	62.3	56.3	70.5	63.6	57.6	+0.5	+1.3
Warner w/o Red Hill	15,000	12,000	44,000	66.9	60.0	53.9	65.9	59.0	52.9	71.5	64.6	58.6	+4.7	+5.6
Barranca e/o Red Hill	33,000	34,000	49,000	70.3	63.4	57.3	70.4	63.5	57.5	72.0	65.1	59.1	+1.7	+1.6
TUSTIN/IRVINE														
Barranca w/o Von Karman		30,000	45,000	0.0	0.0	0.0	69.9	63.0	56.9	71.6	64.7	58.7	–	+1.8
Barranca w/o Jamboree	29,000	29,000	47,000	69.7	62.8	56.8	69.7	62.8	56.8	71.8	64.9	58.9	+2.1	+2.1
Harvard n/o Irvine Center	10,000	10,000	11,000	65.1	58.2	52.2	65.1	58.2	52.2	65.5	58.6	52.6	+0.4	+0.4
Harvard s/o Irvine Center	10,000	9,000	15,000	65.1	58.2	52.2	64.6	57.7	51.7	66.9	60.0	53.9	+1.8	+2.2
Harvard n/o Warner	10,000	8,000	11,000	65.1	58.2	52.2	64.1	57.2	51.2	65.5	58.6	52.6	+0.4	+1.4
Jamboree n/o Barranca	34,000	78,000	92,000	70.4	63.5	57.5	74.0	67.1	61.1	74.7	67.8	61.8	+4.3	+0.7
SANTA ANA														
Warner e/o Grand	19,000	18,000	45,000	67.9	61.0	54.9	67.7	60.7	54.7	71.6	64.7	58.7	+3.7	+4.0
IRVINE														
Barranca e/o Jamboree	25,000	24,000	28,000	69.1	62.2	56.1	68.9	62.0	56.0	69.6	62.7	56.6	+0.5	+0.7
Irvine e/o Jamboree	23,000	39,000	38,000	68.7	61.8	55.8	71.0	61.4	58.1	70.9	64.0	58.0	+2.2	-0.1
Warner e/o Harvard	3,000	9,000	15,000	59.9	53.0	46.9	64.6	57.7	51.7	66.9	60.0	53.9	+7.0	+2.2
Warner w/o Harvard	1,000	2,000	15,000	55.1	48.2	42.2	58.1	51.2	45.2	66.9	60.0	53.9	+11.8	+8.8

[1] n/o = north of; s/o = south of; e/o = east of; w/o = west of

Within the reuse plan area, more housing units are proposed under this alternative compared to Alternative 1, so more housing units would be affected by traffic noise from major roadways. Noise generated by railroad operations and maintenance of the railroad would also affect residential development along the railroad. Like Alternative 1, some existing on-site residential units would experience a CNEL noise level that would exceed applicable City of Tustin and City of Irvine noise standards.

As with Alternative 1, development under Alternative 2 would be required to comply with existing local noise ordinances and state requirements and with noise control requirements of the reuse plan area. Schools would be constructed in compliance with state noise standards, existing housing units would be noise-attenuated as determined appropriate by the cities of Tustin and Irvine prior to reuse as civilian housing, and new housing and other development in areas affected by traffic noise would be set back from the streets and would provide noise attenuation as necessary. Therefore, the noise-sensitive housing and school uses would be adequately protected from external noise levels, and this impact would be considered less than significant.

The extension of Tustin Ranch Road from Walnut Avenue to Edinger Avenue is a planned City of Tustin project and is not part of Alternative 2. This improvement is forecast to result in traffic noise levels of 71 dB CNEL 75 feet from the roadway centerline, which exceeds the land use compatibility standards for residential uses in the City of Tustin. There are existing single-family residences located along the proposed extension, which, at present, is a cleared corridor. Between the homes and the corridor there are existing walls or earthen berms. The grade separation of the Tustin Ranch Road/Edinger Avenue intersection would be included in Alternative 2. This action would likely result in the future roadway being located at an elevation higher than the existing corridor. In this case, homes adjacent to the elevated portion of Tustin Ranch Road may be exposed to noise levels that are greater than 65 dB CNEL, which would be a significant impact. Future vehicular noise (future baseline plus Alternative 1) from all other existing roadways analyzed in the traffic study (Appendix F) would not exceed the threshold of significance.

Mitigation Measures

Mitigation measures N-1, N-2, N-3, and N-4 specified for Alternative 1 would be required under Alternative 2. With mitigation, the level of impact for Alternative 2 would be less than significant.

4.14.5 Alternative 3

Impacts

With implementation of Alternative 3, there would be no aircraft operations occurring in the reuse area. In the baseline condition, aircraft noise levels within most of the reuse area exceeded 65 dBA CNEL, as shown in Figure 3.14-1 of this EIS/EIR. Therefore, the elimination of aircraft operations proposed by Alternative 3 would result in the elimination of the associated noise and a reduction in the overall noise levels within and around the reuse area. This would be a beneficial impact.

Alternative 3 would result in traffic noise impacts along major streets, similar to Alternative 1. As shown on Table 4.14-3, implementation of Alternative 3 would add up to 9 dB CNEL to existing roadways as future haseline conditions. Traffic noise levels along these roadways would range from 66 to 75 dB CNEL at 75 feet from the street centerline.

The same four roadways would experience more than a 3 dB CNEL increase due to project traffic but would not exceed land use compatibility levels established for the affected land use since these roadways are located in commercial and industrial areas. There could be a significant impact on residential and park uses on Warner Avenue between Harvard Avenue and Culver Drive, as described for Alternative 1.

Under Alternative 3, areas along Moffett Avenue east of Loop Road and Von Karman Avenue south of Barranca Avenue would also experience more than a 3 dB CNEL increase due to project traffic. The estimated noise level of 71 dB CNEL at 75 feet from the centerline of Von Karman Avenue is considered compatible with the business and industrial land use designation for the affected area south of Barranca Avenue. Existing on-site residential units along Moffett Avenue east of Loop Road would be affected by a 64 dB CNEL at 75 feet from the street centerline, a level considered compatible with residential uses. Vehicular traffic along all other roadways, as discussed in Section 3.12 (Traffic/Circulation), would not result in more than a 3 dB CNEL increase in the future baseline plus Alternative 3 condition. Noise from the operation and maintenance of the railroad would also affect residential development along the railroad. Like Alternative 1, some existing on-site residential units would experience a CNEL noise level that would exceed applicable City of Tustin and City of Irvine noise standards.

Table 4.14-3
Alternative 3 Noise Impacts From On-site Development and Cumulative Traffic

Roadway Segment[1]	24-hour Traffic Volume			Noise Level (CNEL or Ldn) at Distance from Roadway Centerline										
				Existing Baseline			Future Baseline			Future Baseline Plus Alternative 3			Baseline Change From Existing	Change due to Project
	Existing Baseline	Future Baseline Without Project	Future Baseline Plus Project	75 feet	200 feet	500 feet	75 feet	200 feet	500 feet	75 feet	200 feet	500 feet		
TUSTIN REUSE														
Valencia e/o Red Hill		10,000	19,000	—	—	—	65.1	58.2	52.2	67.9	61.0	54.9	—	+2.8
Loop N e/o Armstrong			24,000	—	—	—	—	—	—	68.9	62.0	56.0	—	—
Loop N w/o Tustin Ranch			12,000	—	—	—	—	—	—	65.9	59.0	52.9	—	—
Loop N e/o Tustin Ranch			17,000	—	—	—	—	—	—	67.4	60.5	54.5	—	—
Loop S e/o Armstrong			45,000	—	—	—	—	—	—	71.6	64.7	58.7	—	—
Loop S w/o Tustin Ranch			22,000	—	—	—	—	—	—	68.5	61.6	55.6	—	—
Loop S s/o Warner			25,000	—	—	—	—	—	—	69.1	62.2	56.1	—	—
Moffett e/o Loop		1,000	8,000	—	—	—	55.1	48.2	42.2	64.1	57.2	51.2	—	+9.0
Tustin Ranch s/o Edinger			27,000	—	—	—	—	—	—	69.4	62.5	56.5	—	—
Tustin Ranch s/o Loop N			25,000	—	—	—	—	—	—	69.1	62.2	56.1	—	—
Tustin Ranch s/o Warner			48,000	—	—	—	—	—	—	71.9	65.0	59.0	—	—
Tustin Ranch s/o Loop S			49,000	—	—	—	—	—	—	72.0	65.1	59.1	—	—
Warner e/o Red Hill			65,000	—	—	—	—	—	—	73.2	66.3	60.3	—	—
Warner e/o Armstrong			44,000	—	—	—	—	—	—	71.5	64.6	58.6	—	—
Warner e/o Tustin Ranch			22,000	—	—	—	—	—	—	68.5	61.6	55.6	—	—
Armstrong n/o Barranca			11,000	—	—	—	—	—	—	65.5	58.6	52.6	—	—
Armstrong n/o Loop S			18,000	—	—	—	—	—	—	67.7	60.7	54.7	—	—
Armstrong n/o Warner			10,000	—	—	—	—	—	—	65.1	58.2	52.2	—	—
TUSTIN OFF SITE														
Irvine w/o Jamboree	26,000	45,000	43,000	69.2	62.3	56.3	71.6	64.7	58.7	71.4	64.5	58.5	+2.2	-0.2
Tustin Ranch s/o I-5	18,000	32,000	46,000	67.7	60.7	54.7	70.1	63.2	57.2	71.7	64.8	58.8	+4.1	+1.6
Tustin Ranch s/o Walnut			45,000	—	—	—	—	—	—	71.6	64.7	58.7	—	—
Valencia w/o Red Hill	4,000	8,000	19,000	61.1	54.2	48.2	64.1	57.2	51.2	67.9	61.0	54.9	+6.8	+3.8
TUSTIN/SANTA ANA														
Red Hill n/o Dyer/Barranca	31,000	26,000	35,000	70.0	63.1	57.1	69.2	62.3	56.3	70.5	63.6	57.6	+0.5	+1.3
Warner w/o Red Hill	15,000	12,000	46,000	66.9	60.0	53.9	65.9	59.0	52.9	71.7	64.8	58.8	+4.9	+5.8
Barranca e/o Red Hill	33,000	34,000	53,000	70.3	63.4	57.3	70.4	63.5	57.5	72.3	65.4	59.4	+2.1	+1.9
TUSTIN/IRVINE														
Barranca w/o Von Karman		30,000	45,000	—	—	—	69.9	63.0	56.9	71.6	64.7	58.7	—	+1.8
Barranca w/o Jamboree	29,000	29,000	52,000	69.7	62.8	56.8	69.7	62.8	56.8	72.3	65.4	59.3	+2.5	+2.5
Harvard n/o Irvine Center	10,000	10,000	16,000	65.1	58.2	52.2	65.1	58.2	52.2	67.1	60.2	54.2	+2.0	+2.0
Harvard s/o Irvine Center	10,000	9,000	15,000	65.1	58.2	52.2	64.6	57.7	51.7	66.9	60.0	53.9	+1.8	+2.2
Harvard n/o Warner	10,000	8,000	12,000	65.1	58.2	52.2	64.1	57.2	51.2	65.9	59.0	52.9	+0.8	+1.8
Jamboree n/o Barranca	34,000	78,000	95,000	70.4	63.5	57.5	74.0	67.1	61.1	74.9	68.0	61.9	+4.5	+0.9
SANTA ANA														
Warner e/o Grand	19,000	18,000	47,000	67.9	61.0	54.9	67.7	60.7	54.7	71.8	64.9	58.9	+3.9	+4.2
IRVINE														
Barranca e/o Jamboree	25,000	24,000	29,000	69.1	62.2	56.1	68.9	62.0	56.0	69.7	62.8	56.8	+0.6	+0.8
Von Karman s/o Barranca	16,000	18,000	36,000	67.1	60.2	54.2	67.7	60.8	54.7	70.7	63.8	57.7	+3.5	+3.0
Irvine e/o Jamboree	23,000	39,000	38,000	68.7	61.8	55.8	71.0	64.1	58.1	70.9	64.0	58.0	+2.2	-0.1
Warner e/o Harvard	3,000	9,000	16,000	59.9	53.0	46.9	64.6	57.7	51.7	67.1	60.2	54.2	+7.3	+2.5
Warner w/o Harvard	1,000	2,000	15,000	55.1	48.2	42.2	58.1	51.2	45.2	66.9	60.0	53.9	+11.8	8.8

[1] n/o = north of; s/o = south of; e/o = east of; w/o = west of

The extension of Tustin Ranch Road from Walnut Avenue to Edinger Avenue is a planned City of Tustin project and is not part of Alternative 3. This improvement is forecast to result in traffic noise levels of 71 dB CNEL 75 feet from the roadway centerline, which exceeds the land use compatibility standards for residential uses in the City of Tustin. There are existing single-family residences located along the proposed extension, which, at present, is a cleared corridor. Between the homes and the corridor there are existing walls or earthen berms. The grade separation of the Tustin Ranch Road/Edinger Avenue intersection would be included in Alternative 3. This action would likely result in the future roadway being located at an elevation higher than the existing corridor. In this case, homes adjacent to the elevated portion of Tustin Ranch Road may be exposed to noise levels that are greater than 65 dB CNEL, which would be a significant impact. Future vehicular noise (future baseline plus Alternative 3) from all other existing roadways analyzed in the traffic study (Appendix F) would not exceed the threshold of significance.

Development under this alternative would be required to comply with existing local noise ordinances and state requirements, and with noise control requirements of the Reuse plan area. Schools would be constructed in compliance with state noise standards, existing housing units would be noise-attenuated as determined appropriate by local jurisdictions prior to reuse as civilian housing, and new housing and other development in areas affected by traffic noise would be set back from the streets and would provide noise attenuation as necessary. Therefore, the noise-sensitive housing and school uses would be adequately protected from external noise levels, and this impact is considered less than significant.

Mitigation Measures

Mitigation measures N-1, N-2, N-3, and N-4 specified for Alternative 1 would be required under Alternative 3. With mitigation, the level of impact would be less than significant.

4.14.6 No Action Alternative

Impacts

Under the No Action Alternative, the Air Station would remain in federal government ownership under a caretaker maintenance program. As with Alternatives 1, 2, and 3, military aircraft operations would cease, eliminating a major source of noise from overflights. No new activity would occur on the Air Station, resulting in the elimination of traffic noise generated by vehicles traveling to and

from the Air Station. As a result, the No Action Alternative would have a beneficial impact of reducing both aircraft and traffic noise.

Mitigation Measures

The No Action Alternative would result in a beneficial noise impact; no mitigation would be required.

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CHAPTER 5.0
CUMULATIVE PROJECTS AND IMPACTS

5.1 Description of General Plan and Regional Plans 5-2
5.2 Analysis of Cumulative Impacts 5-4

CHAPTER 5.0
CUMULATIVE PROJECTS AND IMPACTS

Federal regulations implementing NEPA (40 C.F.R. §§ 1500-1508) and the Marine Corps Environmental Compliance and Protection Manual (Order P5090.2) require that the cumulative impacts of a proposed action be assessed. NEPA defines a cumulative impact as an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 C.F.R. § 1508.7).

Due to recent changes to the *CEQA Guidelines*, cumulative impact analysis under CEQA is now slightly different than under NEPA. California guidelines implementing CEQA require a discussion of the "cumulative impacts of a project when the project's incremental effect is cumulatively considerable." Where a project's incremental effect is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable." (Cal. Code Regs., Title 14 § 15130 (a)). "Cumulatively considerable" means the incremental effects of a project are considerable when viewed in combination with the effects of "past, present, and probable future projects" or in relation to "a summary of projections contained in an adopted general plan or related planning document" (Cal. Code Regs., Title 14, § 15065(c) and § 15130(b)(1)(A)(B)). CEQA clearly defines "probable future projects" to include projects included in an adopted capital improvements program, general plan, regional transportation plan, or other similar plan (Cal. Code Regs., Title 14, § 15130(b)(1)(B)(2)). A cumulative impact is defined as an impact which is created as a "result of a combination of the project together with other projects causing related impacts" (Cal. Code Regs., Title 14, § 15130(a)(1)).

Pursuant to the *CEQA Guidelines*, a project's contribution to a significant cumulative impact can be less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure designed to alleviate the cumulative impact, or if the impact is *de minimus* (Cal. Code Regs., Title 14, § 15130(a)). CEQ Regulations implementing NEPA state that cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 C.F.R. § 1508.7). The distinction may not be applicable in many instances, but it is possible for a project which has no project-related cumulative impact to be considered a significant cumulative impact under NEPA, whereas by definition, it would not be significant under CEQA.

In this section, cumulative impacts are determined in terms of long-term projections of growth and development contained in local general plans and regional plans for the affected areas. These plans are briefly described in Section 5.1. Cumulative impacts of the reuse alternatives in conjunction with projections contained in those plans are evaluated in Section 5.2. The time frame for the cumulative impact analysis extends past the year 2020 because civilian reuse would occur over this time period.

5.1 DESCRIPTION OF GENERAL PLAN AND REGIONAL PLANS

This cumulative impact analysis is based on build-out of general plans in the affected geographic area, including the cities of Tustin, Irvine, and Santa Ana and in the case of traffic, the committed roadway network as defined in Section 3.12, is also included. Additionally, this cumulative analysis considers the disposal and reuse of MCAS El Toro. The general plans of the cities and the County of Orange are the primary plans governing growth and development in Orange County on the local level. Local growth and development is also reflected in and affected by the master plans for facilities of utility providers, including water, sanitation, flood control, and solid waste disposal. On the regional level, growth management, mobility, air quality, and housing needs plans of SCAG and other agencies also affect growth and development in areas nearby the reuse plan area and in Orange County as a whole.

The City of Tustin encompasses 11.02 square miles and is fully developed with the exception of portions of Tustin Ranch. Tustin Ranch is a 1,746-acre planned community at the eastern boundary of the City of Tustin and includes a mixture of residential, commercial, and public uses. Approximately 75 percent of that project has been developed. The Tustin Planning Area consists of approximately 17.2 square miles and includes all of the land within the City's incorporated boundary (11.02 miles), as well as the City of Tustin's "sphere of influence" (an additional 6.2 square miles of unincorporated county area) located immediately adjacent to the City's northern boundaries and approved by the Local Agency Formation Commission as Tustin's probable ultimate physical boundaries and service area. Two smaller additional areas of approximately 115 acres located adjacent to the city's southeasterly boundary are also included in the Tustin Planning Area. This unincorporated area (6.2 square miles) within the city's sphere of influence is fully developed. Future development within the Tustin Planning Area would be limited to infill projects, Tustin Ranch, and the reuse of MCAS Tustin.

The City of Irvine encompasses 43 square miles and is divided into 41 planning areas. The City of Irvine is in the process of updating its General Plan dated 1995. As of January 1, 1999, there were approximately 48,000 dwelling units and 73,000,000 square feet of non-residential uses (includes

multi-use, institutional, industrial, commercial, and military uses). Future build-out under maximum intensity projects would be approximately 87,500 dwelling units and 153,000,000 square feet of non-residential uses (City of Irvine 1999). Therefore, for the purpose of this cumulative analysis, it is assumed that the City of Irvine is 55 percent built out for residential uses and 48 percent built out for non-residential uses.

The City of Santa Ana, located directly west of the reuse plan area, encompasses 27 square miles and is fully developed. Of this total, 58 percent is devoted to residential development, 15 percent to commercial uses, 14 percent to industrial uses, 11 percent to public and institutional uses, and two percent to public parkland and open space. An estimated 5,185 acres (or eight square miles) are currently included in six redevelopment projects. Further, a 7,000-acre area has been designated as a *California Enterprise Zone* since 1993. This designation provides businesses with tax incentives intended to promote new business development and growth, or expansion of existing businesses within the zone. Any new development would consist of redevelopment and infill development on the remaining vacant and underutilized parcels. According to the City's General Plan, many parcels within non-residential land use designations will never be developed to the maximum intensity permitted in the General Plan (City of Santa Ana 1998).

MCAS El Toro is an approximately 4,700-acre Air Station that was operationally closed in July 1999. It is located in central Orange County about 10 miles southwest of MCAS Tustin. Approximately 424 acres are within the City of Irvine and the remainder is within unincorporated Orange County. The County of Orange is the LRA. The proposed project utilized for this analysis is the adopted reuse plan submitted by the LRA to the DON and HUD in December 1996. In general, the LRA Reuse Plan would consist of a 38 million air passenger (MAP) international airport with approximately 2,070 acres devoted to aviation uses (air support, cargo, terminal uses, parking, and restricted use), and 1,640 acres identified for non-aviation uses (community services, open space, public utilities/infrastructure, institutional uses, agriculture, residential, R&D/light industrial, recreation, commercial/office, etc.). Another 990 acres is designated as habitat preserve. The *MCAS El Toro Community Reuse Plan Final EIR (Report No. 563)* (County of Orange 1996) evaluates the LRA Reuse Plan as Reuse Alternative A. On October 16, 1998, the County of Orange issued a Notice of Preparation (NOP) for Draft EIR for the MCAS El Toro Master Development Plan (Report No. 573). According to the NOP, this Draft EIR will examine both aviation and non-aviation alternatives for development. The NOP indicates aviation alternatives at MCAS El Toro ranging from 23.4 MAP to 28.8 MAP.

5.2 ANALYSIS OF CUMULATIVE IMPACTS

5.2.1 Land Use

Cumulative land use impacts would be those that would occur within the cities of Tustin, Irvine, and Santa Ana, and portions of unincorporated Orange County (including MCAS El Toro). Each of the three reuse alternatives would result in development of additional urban uses. Combined with future build-out, anticipated under the general plans of the three cities and disposal and reuse of MCAS El Toro, each reuse alternative would contribute to a cumulative increase in urbanization of the area and the region.

The increased urbanization process within the region would be required to proceed in accordance with land use plans of the local communities, as each community's General Plan governs all future development within its jurisdictional boundaries. These plans contain policies, implementation measures, and programs designed to ensure that future development would be compatible with existing and planned land uses, proceed in an orderly fashion, and contribute to community goals and objectives for land use. The MCAS El Toro EIR identifies a significant adverse cumulative impact on land use as the remaining rural character of the Tustin Plain around the Air Station is diminished by conversion from open space and agriculture to urban uses.

While each of the three alternatives would be a component of that region-wide process, they would generally result in planned development and infill of an already highly urbanized area. Although all three reuse alternatives are inconsistent with the general plans and zoning maps of Tustin/Irvine, none would result in urban sprawl because the plans have been created to blend and/or continue existing land uses, or they would not create land use conflicts with existing or future land uses in the area. After implementation of mitigation to amend the general plans and zoning codes of each jurisdiction the inconsistency with local land use plans would be eliminated. Therefore, the potential cumulative impacts of land use compatibility and consistency with local land use plans would be less than significant under CEQA for all three reuse alternatives. Under NEPA, however, the reuse alternatives incremental contribution to an identified cumulative impact would result in cumulatively significant impacts.

5.2.2 Socioeconomics

Each of the three reuse alternatives would increase the population of the cities of Tustin and Irvine through the provision of new housing units. Additional population increases may be seen in other local jurisdictions as individuals and families move closer to the reuse plan area to take advantage of increased employment opportunities generated under each of the three reuse alternatives.

Each of the three reuse alternatives would increase the local housing supply, with the provision of new housing units alone or in combination with the conversion of former military housing units to civilian use. Each of the three reuse alternatives would increase employment in Orange County through the provision of direct employment within the reuse plan area and through indirect and induced employment within the county. The total increase of jobs would he anywhere from four to five times higher than military use at MCAS Tustin. Reuse of MCAS El Toro would also increase johs hy four to five times.

The population, housing, and employment growth that would result from implementation of each of the three reuse alternatives are, in general, consistent with the assumptions that have heen used in the Orange County planning process. The project is consistent with the adopted SCAG Orange County subregional growth forecasts, but inconsistent with SCAG Regional Transportation Plan 97 growth forecast for the City of Tustin. Cumulative development would result in increased employment that would more than off-set the direct johs lost as a result of hase closure.

5.2.3 Utilities

Eacb of the three reuse alternatives in combination with cumulative regional development would result in increased demand for utilities in Orange County (potable water, non-potahle water, sewer, drainage, solid waste disposal, natural gas, electricity, telephone, and cable). The increased regional demand could require construction of new and enlarged utility systems and upgrading of existing utility infrastructure, including some regional facilities as needed. Construction of utility systems and facilities to serve regional growth and development would proceed under the direction of the utility providers. If development occurs prior to the provision of adequate utilities, or if the utility services existing users are denigrated as a result of MCAS Tustin reuse, a significant regional impact would result. Development restrictions which do not permit construction until sufficient infrastructure and capacity is availahle would ensure against project-related cumulative impacts to utilities.

Each of the reuse alternatives would include development of utility systems and facilities which would adequately serve the reuse development without impacting services in the region. There would be no cumulative CEQA or NEPA impact.

5.2.4 Public Services and Facilities

Each of the three reuse alternatives, in conjunction with urban development associated with reuse of El Toro and build-out of the various general plans would result in a cumulative increase in demand for all public services and for maintenance of public facilities. Development restrictions would not allow for construction of a reuse alternative until all public services can be provided. Under both NEPA and CEQA, MCAS Tustin reuse development of any of the three alternatives would not increase the cumulative impacts beyond those already anticipated, analyzed, and mitigated under the general plans of the identified cities.

5.2.5 Aesthetics

Each of the reuse alternatives would result in a change from a military air station and associated structures (which are generally older buildings of varying designs) and agricultural uses to a mixed-use development. This mixed-use development would be similar in character to the surrounding development in the cities of Tustin, Irvine, and Santa Ana and in Orange County as a whole. The two blimp hangars on the Air Station are considered unique features. Alternative 1 includes the possible reuse of the hangars, depending on the economic viability. Because of the visual prominence of the hangars, the removal of one hangar would be a noticeable change and an impact to visual quality, but the removal of both hangars which would be considered a significant, unmitigable cumulative impact under both NEPA and CEQA. The landform change to MCAS El Toro is identified in the EIR (County of Orange 1996) as cumulatively significant because a pastural, rolling foothill landscape would be converted to manufactured slopes and urban activity. Cumulative visual impacts would be significant under CEQA and NEPA.

5.2.6 Cultural and Paleontological Resources

All three reuse alternatives have the potential to uncover previously unidentified cultural and paleontological resources. If resources are identified in the future, either on the four-acre parcel to be surveyed or within the current boundaries of MCAS Tustin, and they are found to be significant on a project-by-project basis, impacts can be mitigated by data recovery. The same can be said

regarding development of other projects in the three jurisdictions or at MCAS El Toro. Cumulative impacts would, therefore, be mitigated as well.

Each of the three reuse alternatives would result in irreversibly eliminating most of the two discontiguous eligible historic districts, resulting in significant impacts to the districts. California's role in World War II was physically represented by the presence of numerous military bases. Closings of other U.S. military bases in California could result in the demolition of similar historic buildings and districts. The cumulative effect of such closures is that the amount of increasingly rare World War II military base building stock is being irreplaceably diminished. The significance of that impact is difficult to judge, bowever, as no criteria have been developed. Only seven blimp hangars such as those at MCAS Tustin exist in the U.S. including two at Moffatt Field on San Francisco Bay (City of Tustin 1994b). Loss of structures associated with blimp hangar use in World War II would have a significant cumulative impact on the number of structures representing this specialized activity. Significant, unmitigable cumulative impacts are identified under both NEPA and CEQA.

5.2.7 Biological Resources

Each of the three reuse alternatives would contribute to the urbanization of Orange County, which would cumulatively alter existing biological resources. In central Orange County, where the project is located, much of the native babitat and species have been lost to agriculture and subsequent conversion to urban uses. Close to the project area, the impact of the reuse alternatives combined with impacts from the construction of the Eastern Transportation Corridor (recently completed) and development of the Lower Peters Canyon Specific Plan (proposed mixed use development northeast of MCAS Tustin with up to 8,000 dwelling units), would result in alterations in and near wetlands along the Peters Canyon Channel. Riparian habitat and sensitive species supported by that babitat, which includes the southwestern pond turtle, would be altered by flood control improvements in a variety of channels and by general urban encroachment. As a result of the area-wide urbanization, wetlands in Peters Canyon Cbannel and the San Diego Creek watershed would be impacted. Additionally, the reuse of MCAS El Toro would contribute to loss of native plant communities and habitat fragmentation.

Each reuse alternative includes mitigation measures for direct and indirect project impacts to wetlands so that no net loss in wetland value would result, and to relocate southwestern pond turtles to a viable offsite location. These measures would reduce the impact from each alternative reuse development to less than significant level. In compliance with existing federal and state regulations, each development affecting wetlands and/or sensitive habitat in the County would be required to

replace the lost wetlands so that no net loss in value of wetlands would result. Additionally, each project is required to mitigate project effects on sensitive species. Under CEQA, cumulative impacts would be less than significant since project impacts under each of the reuse alternative would be less than significant. However, development of identified general plans and the reuse of MCAS El Toro would contribute to continued, irreversible loss of native habitat and sensitive species.

5.2.8 Agricultural Resources

Each of the three reuse alternatives, in conjunction with the future build-out of the three jurisdictions and reuse of MCAS El Toro would continue the pattern of modifying agriculture to urban uses. While this is typical of Orange County, the cumulative impact would be significant because the land to be converted represents some of the last remaining agricultural land in the county. This EIS/EIR identifies the loss of Prime Farmland and Farmlands of Statewide Importance as significant. Absent existing or planned county-wide programs or policies to buffer or replace farmland lost to urban development, cumulative impacts would be significant and unavoidable under both NEPA and CEQA.

5.2.9 Soils and Geology

Each of the three reuse alternatives, in conjunction with future development in the cities and reuse of MCAS El Toro, would expose more persons to earthquake hazards. Other geotechnical constraints, such as expansive soils and liquefaction, might present hazards in specific areas. The cumulative development could create hazards due to the removal and overcovering of the soil over large areas, and the replacement of natural slopes with cut and fill slopes. Also, vegetation removal would present potential erosion conditions. Adherence to recommendations contained in site-specific geotechnical reports, building codes, and grading ordinances, and implementation of region-wide erosion control plans, would avoid significant cumulative impacts under both NEPA and CEQA because exposure would not result in risks higher than commonly accepted in southern California.

5.2.10 Water Resources

Cumulative impacts on water resources are discussed in terms of the Orange County aquifer and the Santa Ana watershed.

Groundwater

Implementation of any of the three reuse alternatives in tandem with further urban development throughout Orange County, including reuse of MCAS El Toro, would result in increased demand for water supplies, which could result in increased pumping of the Orange County aquifer. Producers within the Orange County Water District (OCWD) would be required to pay for any increase over 75 percent of their average annual historical pumping at a rate equivalent to the cost of imported water. This constraint is anticipated to limit groundwater pumping from the Orange County aquifer to the level of up to 490,000 acre-feet by the year 2020, projected and planned for by the OCWD (Master Plan Report for the Orange County Water District, April, 1999). Because this pricing constraint exists, the cumulative impact related to groundwater withdrawal would be less than significant under NEPA and CEQA. The reuse plan area is inside the boundary of the OCWD, the manager of the local groundwater basin. OCWD will be responsible to manage any groundwater withdrawals from the reuse area consistent with OCWD's District Act and to the benefit of the producers inside OCWD.

Water Quality

Lower San Diego Creek and Newport Bay are two water bodies downstream from the reuse plan area within the Santa Ana River watershed. Both would be affected by increased urban runoff under any of the three reuse alternatives in conjunction with urbanization throughout central Orange County. These water bodies are already considered impaired and in need of restoration. The cumulative reduction in agricultural land within the Santa Ana River watershed would result in a reduction in agricultural runoff, which could lead to a reduction in pollutants related to agricultural production. However, urbanization within the watershed would result in increased total runoff due to increases in the total amount of land covered by impermeable surfaces as well as increased urban contaminant loads.

The SARWQCB has prepared a Basin Plan and four Total Daily Mass load studies with the goal to rehabilitate water quality in Lower San Diego Creek and Newport Bay (SARWQCB 1995, 1998a, 1998b). These plans are designed to improve water quality within the watershed and respond to increased runoff from cumulative urban development, including runoff from construction sites. Additionally, all development over five acres in size within the County would require an NPDES permit for construction and operation. Compliance with these plans, policies, and regulations would avoid any significant cumulative impact under both NEPA and CEQA on water quality.

5.2.11 Hazardous Wastes, Substances, and Materials

Implementation of any of the reuse alternatives would result in the use of hazardous materials and the generation of hazardous wastes. The same would be true of reuse at MCAS El Toro. Future development would be required to comply with all applicable federal, state, and local regulations governing the use, storage, transfer, and disposal of hazardous materials. Cumulative impacts under both NEPA and CEQA would be less than significant. Ongoing remediation programs would continue at MCAS Tustin and MCAS El Toro, as necessary, and would be considered a beneficial impact.

5.2.12 Traffic/Circulation

The traffic analysis for this EIS/EIR calculated traffic to be generated by each of the reuse alternatives for the site, added it to projected traffic from probable future development, distributed the trips to the probable future committed circulation network, and then determined the impact. The analysis assumed full build-out of the alternatives in year 2020 and other future development consistent with OCP-96 Modified. The exception is reuse of MCAS El Toro which is not assumed in OCP-96 Modified. To incorporate that project, 2005 and 2020 forecasts incorporate trip generation data for a 38 MAP airport and the other reuse categories. The future conditions in the traffic analysis therefore are consistent with the cumulative projects identified for this analysis. Therefore, cumulative impacts have been disclosed in Section 4.12. Even after implementation of the mitigation measures described in 4.12, some significant traffic impacts would remain. Section 6.1 contains a summary of adverse impacts remaining after mitigation for each of the reuse alternatives.

5.2.13 Air Quality

The geographic scope of impacts on air quality is the South Coast Air Basin (SCAB). Stationary source emissions within the project boundaries, mobile source emissions from people traveling to and from the project site, and power plant emissions from facilities providing power to the project site all fall within the boundaries of the SCAB and affect concentrations of pollutants at locations distant from tbe site within the basin.

Each of the three reuse alternatives, in conjunction with the projected growth in the SCAB, would contribute to cumulative air quality impacts within the SCAB. Both the project's contribution and the total contribution from all projects is considered significant by the South Coast Air Quality

Management District based on the District's thresholds of significance for individual development projects.

5.2.14 Noise

Noise impacts resulting from traffic generated by each of the reuse alternatives have been combined with projected noise impacts derived from projected roadway traffic (Section 4.14). Noise from roadway traffic was calculated based on the future traffic projections resulting from anticipated build-out consistent with OCP-96 Modified and reuse of MCAS El Toro. This would incorporate all anticipated cumulative development. The reuse of MCAS Tustin would not result in significant unmitigable noise impacts, so CEQA impacts would be less than significant. The regional analysis, however, identified a possible noise impact to residents associated with future Tustin Ranch Road from if elevated over existing railroad tracks. That impact would need to be mitigated by the specific project proponent. Other regional noise impacts associated with reuse of MCAS El Toro include increases in noise levels along Jamboree Road, Irvine Boulevard, and Bryan Avenue, and in existing and planned residential areas to the north of MCAS El Toro. Noise impacts would be cumulatively significant under NEPA.

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CHAPTER 6.0
OTHER CONSIDERATIONS REQUIRED BY NEPA/CEQA

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CHAPTER 6.0
OTHER CONSIDERATIONS REQUIRED BY NEPA/CEQA

This section addresses other topics required by NEPA and CEQA in an EIS/EIR. These include: an analysis of significant unavoidable adverse impacts to the environment (NEPA, 42 U.S.C. § 4321 et seq.; and CEQA, Cal. Pub. Res. Code, § 21000 et seq., as amended); the relationship between local short-term uses of the environment and long-term productivity (NEPA); the identification of any irreversible and irretrievable commitments of resources (NEPA and CEQA); an analysis of growth-inducing impacts (CEQA); a discussion of effects found not to be significant (CEQA); a discussion of Executive Order 13045 (Environmental Health and Safety Risks to Children, 62 Fed. Reg. 19885 (1997)); and a discussion of issues related to Executive Order 12898 (Environmental Justice, 59 Fed. Reg 7629 (1994)).

6.1 SIGNIFICANT UNAVOIDABLE ADVERSE EFFECTS

An EIS/EIR must describe any significant unavoidable adverse environmental impacts for which either no mitigation or only partial mitigation is feasible. The impact analysis presented in Chapter 4 of this EIS/EIR indicates that certain significant unavoidable adverse effects would occur, to a greater or lesser degree, with implementation of each of the alternatives under consideration. This section provides a summary of the significant impacts that remain for each alternative, even after implementation of stated mitigation measures.

Alternative 1

- Development under this alternative would result in the conversion of prime agricultural land to urban uses. Approximately 682 acres of Prime Farmland and 20 acres of Farmland of Statewide Importance would ultimately be developed with residential, commercial, recreation, institutional, and other urban uses, and would result in unavoidable significant impacts to a total of 702 acres of Farmland.

- Development would eliminate the two discontiguous historic districts. It is possible that both blimp hangars may not be retained given financial feasibility.

- Possible demolition of both hangars would eliminate prominent and irreplaceable visual features.

- Air quality emissions would exceed SCAQMD thresholds and mitigation would not fully eliminate all impacts.

- Significant traffic impacts would remain at the intersections of Tustin Ranch Road and Walnut Avenue, and Jamboree Road and Barranca Parkway under full buildout (year 2020).

Alternative 2

- Development under Alternative 2 would convert 702 acres of Farmland to urban uses, resulting in unavoidable significant impacts.

- The planned demolition of the southern blimp hangar and the two discontiguous historic districts would result in unavoidable significant effects on historic resources under this alternative. It is possible that the northern blimp hangar may be demolished also, if it is not financially feasible to retain it.

- Possible demolition of both hangars would eliminate prominent and irreplaceable visual features.

- Air quality emissions would exceed SCAQMD thresholds and mitigation would not fully eliminate all impacts.

- Significant traffic impacts would remain at the intersections of Tustin Ranch Road and Walnut Road, Van Karman Avenue and Barranca Parkway, and Jamboree Road and Barranca Parkway, Grand Avenue and Edinger Avenue, and Grand Avenue and Warner Avenue under full buildout (year 2020).

Alternative 3

- Development under Alternative 3 would convert 702 acres of Farmland to urban uses, resulting in unavoidable significant impacts.

- The planned demolition of the southern blimp hangar and the two discontiguous historic districts would result in unavoidable significant effects on historic resources under this alternative. It is possible that the northern blimp hangar may be demolisbed also, if it is not financially feasible to retain it.

- Possible demolition of both hangars would eliminate prominent and irreplaceable visual features.

- Air quality emissions would exceed SCAQMD thresholds and mitigation would not fully eliminate all impacts.

- Significant traffic impacts would remain at the intersections of Tustin Ranch Road and Walnut Avenue, Van Karman Avenue and Barranca Parkway, ~~and~~ Jamboree Road and Barranca Parkway, and Grand Avenue and Warner Avenue under full buildout (year 2020).

6.2 SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

NEPA requires that an EIS/EIR consider the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity. The analysis covers the extent to which both disposal and reuse would involve tradeoffs between short-term environmental gains at the expense of long-term losses, or vice versa.

Disposal of MCAS Tustin could reduce long-term military productivity, should there be a future need for these facilities. However, disposal and subsequent reuse of the property would result in long-term economic gains by providing jobs, revenue, and housing. Additionally, reuse would allow the LRA to realize three goals: (1) providing parkland to satisfy an existing deficiency, (2) provide housing to meet projected demand, and (3) institute a circulation system with connections across the site.

Much of MCAS Tustin has been developed and utilized as a military installation, and redevelopment under any of the three reuse alternatives would not affect the productivity of areas previously built out. However, there are approximately 702 acres of agricultural lands that would be unavoidably lost under any of the alteroatives, thus reducing the long-term agricultural productivity of the site and the associated benefit to the local and regional economy.

The tradeoff for the potential environmental impacts would be the socioeconomic gain of providing housing and jobs to the area.

6.3 IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES

NEPA and CEQA require that an EIS/EIR analyze the extent to which the proposed alternatives' primary and secondary effects would commit nonrenewable resources to uses that future generations

would be unable to reverse. Disposal of MCAS Tustin property and structures would increase the options for site use and for responsible long-term resource management and disposal would make no resource commitments.

Implementation of any of the reuse alternatives would require commitments of both renewable and nonrenewable energy and material resources for demolition, and commitments for construction of the structures and infrastructure improvements required for implementation. These developments would represent a very large commitment of financial resources but would not represent an irreversible commitment of the MCAS Tustin properties to the proposed uses.

Alternative 1 would include a commitment of biological resources including jurisdictional wetlands and southwestern pond turtles, as well as agricultural resources due to the use of Prime Farmland and Farmland of Statewide Importance. Depending on the financial feasibility of retaining the blimp hangars, Alternative 1 may also include commitments of aesthetic resources and historic resources. Alternative 2 would include the same commitments as Alternative 1, but would also certainly include commitments of aesthetic resources and historic resources due to the planned loss of the southern blimp hangar. Alternative 3 would include the same commitments as those described for Alternative 2. Under both alternatives 2 and 3, financial feasibility may preclude preservation of the northern blimp hangar and both hangars may be demolished.

The reuse alternatives would also consume large volumes of nonrenewable fossil fuel as a result of increased trips generated by truck and automobile trips.

6.4 GROWTH-INDUCING IMPACTS

Under CEQA, an EIR must discuss the ways in which the proposed action and alternatives could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the area surrounding the proposed action. Analysis of growth-inducing effects includes those characteristics of the action that may encourage and facilitate activities that, either individually or cumulatively, would affect the environment. Population increases, for example, may impose new burdens on existing community service facilities. Similarly, improvement of access routes may encourage growth in previously undeveloped areas. Growth may be considered beneficial, adverse, or of no significance environmentally, depending on its actual impacts to the environmental resources present.

Each of the reuse alternatives analyzed would aid in accommodating economic growth projected for the region, and implementing any of these alternatives would create a number of new jobs. Any demands for additional jobs resulting from reuse activities would be expected to be met by the local population. The cities of Tustin and Irvine will continue to promote and implement local hiring. The increased economic activity would be expected to contribute to regional economic growth in accordance with the *City of Tustin General Plan* and *City of Irvine General Plan*.

The proposed action would partially meet the projected demand for additional housing, jobs, and revenue in southern California. Rather than induce unplanned growth, the proposed action is designed to accommodate future growth in a manner consistent with applicable plans and policies.

Disposal of MCAS Tustin would remove one constraint to growth in the area immediately north of the Air Station. Land uses within Segments A and B of the Browning/CGA Corridor Easements have been until recently restricted (Figure 3.1-4). These clearance corridors restricted the height of land uses developed within the corridors, and residential uses were prohibited within these segments of the corridors. These development restrictions have been eliminated now that the military operation has ceased.

Approximately 70 percent of the land within the corridors has already been developed in accordance with the General Plans and zoning ordinances of the cities of Tustin and Irvine. Removal of the clearance corridors would not result in any additional development of these already built-out parcels. An undeveloped area designated Development Reserve (just north of the Air Station and within the Browning Corridor) could be developed with industrial and/or commercial uses, and small pockets of other undeveloped land within the two corridors could also be developed. However, existing land use regulations would regulate development in these areas, and no unplanned growth would occur simply due to the removal of the corridor designations.

With regard to residential uses, there is one area south of Bryan Avenue (within Segment B of the CGA Corridor) that is designated for residential use and could be developed in accordance with local land use regulations now that the corridor designation is no longer in effect. Again, the future residential development of this area would be consistent with local land use regulations; removal of the corridor designation would not result in unplanned residential development. Overall, disposal of MCAS Tustin would not induce unplanned growth within the clearance corridor areas.

6.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

CEQA Guidelines Section 15128 requires that the environmental document include a brief discussion of various environmental issues that were determined not to be significant. This environmental document did not dismiss any potential environmental issues; all possible effects of the proposed action were analyzed in detail in Chapter 4. Environmental effects have been identified as either significant or not significant. Impacts identified as significant were determined to exceed some or all threshold values expressed in this document as "Significance Criteria." Effects found not to be significant did not exceed thresholds stated as "Significance Criteria."

However, this analysis determined that disposal and reuse of MCAS Tustin would have no significant affect on certain issue areas, including socioeconomics; soils and geology; water resources; and hazardous wastes, substances, and materials. In other instances, consequences of the disposal/reuse action were found to be beneficial, such as the positive effect of job creation on the regional economy, provision of parkland, the provision of housing to meet projected demand in the cities of Tustin and Irvine, and linkages in the circulation network.

6.6 PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

On April 21, 1997 Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks, was signed by President Clinton. The policy of the Executive Order states that:

> "A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weights than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency:
>
> (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and

(b) ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

Under the definitions provided in Executive Order 13045, covered regulatory actions included those that may be "economically significant" (under Executive Order 12866) and "concern an environmental health risk or safety risk that an agency has reason to believe may disproportionately affect children." Further, Executive Order 13045 defines "environmental health risks and safety risks" [to] "mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)." In order to comply with the executive order, this section of the EIS/EIR discusses child-specific environmental health risk and safety risk issues.

There may be potential on-site health and safety impacts resulting from exposure to environmental contamination/hazardous materials on the site during reuse (as discussed in Section 4.11), but there is no indication that any such potential impacts would disproportionately accrue to children. Areas of contamination are scheduled for cleanup prior to reuse, with restoration to levels appropriate to subsequent reuse categories. Children are not expected to be exposed during the cleanup process. Health and safety impact concerns could also extend off-site with some of the reuse alternatives. Air quality impacts (as discussed in Section 4.13) are a potential concern, but given that any such impacts would be of a small incremental level and would be experienced on a regional basis rather than a localized basis, no disproportionate impacts to children are anticipated. Noise impacts, though not linked to a "product or substance" as specified in Executive Order 13045, are another potential concern for the health of children. However, while noise impacts are likely to extend into neighborhoods off-site (as discussed in Section 4.14), there is no evidence that children are likely to be subject to disproportionate impacts based on either excessive ambient noise or through learning disruption as the result of noise, either in residences or schools. In summary, no disproportionate impacts to environmental health risks and/or safety risks to children are likely under any of the reuse alternatives.

6.7 ENVIRONMENTAL JUSTICE

This section summarizes potential impacts from disposal and reuse of the site on issues of environmental justice, as mandated by Executive Order 12898. The "Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,"

issued on February 11, 1994, requires that the relative impacts of federal actions on minority populations and low-income populations be addressed to avoid the placement of a disproportionate share of adverse impacts of these actions on these groups. On April 21, 1995, the Secretary of Defense submitted a formal environmental justice strategy and implementation plan to the USEPA.

In order to comply with the executive order, this EIS/EIR included the following actions:

- gathering economic, racial, and demographic information from the 1990 census to identify areas of low-income and high minority populations in the areas contiguous with the reuse plan area that would potentially be exposed to impacts;

- assessing the disposal and reuse actions for disproportionate impacts resulting from on-site activities associated with reuse of the site; and,

- encouraging community participation and input through public hearings and meetings and extensive public notification, which are described in Chapter 1 and Chapter 8 of this document.

6.7.1 Criteria and Methodology

As discussed in Section 3.2, Socioeconomics, some of the areas near the reuse plan area have minority populations and low-income populations in greater proportion than is the case for Orange County as a whole. These populations could be affected by the activities associated with disposal and reuse of the MCAS Tustin site. Under the provisions of Executive Order 12898, "[m]itigation measures outlined or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible, should address significant and adverse environmental effects of proposed Federal actions on minority communities and low-income communities." Relative to environmental justice, a significant impact would occur if the proposed action, including the consideration of all resource issues, would result in disproportionate negative effects on minority populations or low-income populations. This section provides more information on the minority populations and low-income populations in the area near the site.

6.7.2 Minority Populatioo and Low-iocome Population Overview

As discussed in Section 3.2, Socioeconomics, and presented in Table 3.2-3, the five census tracts contiguous with the reuse plan area (shown on Figure 3.2-1) have a higher non-white (i.e., racial minority) population percentage (27 percent) than does Orange County as a whole (21 percent), but

a lower percentage than the State of California (31 percent). By way of comparison to the contiguous cities, Tustin has the same non-white percentage of total population as the census tracts contiguous with the reuse planning area (27 percent), wbereas the non-white population percentage is lower in Irvine (22 percent) and higher in Santa Ana (32 percent). In terms of proportion of Hispanic population, the census tracts contiguous with the reuse plan area have a much lower percentage of Hispanic residents (9 percent), than Tustin (20 percent), Santa Ana (65 percent), Orange County (23 percent), or the State of California (25 percent), but higher than Irvine (6 percent). Expressed in terms of a total minority population, the census tracts contiguous with the reuse plan area has a lower total minority population percentage (32 percent) than Tustin (36 percent), Santa Ana (77 percent), Orange County (35 percent), or the state as a whole (43 percent), but somewhat higher than Irvine (26 percent). Thus, in comparison to the adjacent cities, the county, and the state, the census tracts contiguous with the reuse plan area cannot be considered a high minority population area.

If areas more distant from the reuse plan area are examined, census tracts with higher minority populations and greater low-income populations may be found. The *Economic Development Conveyance Application for MCAS Tustin* (City of Tustin 1999) included data from four census tracts north of and not contiguous with the reuse plan area (tracts 744.03, 744.04, 755.08, and 755.09). These tracts were noted for inclusion in targeted employment and economic assistance programs (due to low income and high unemployment characteristics) associated with reuse. These tracts range from a few hundred feet to approximately one mile away from the reuse plan area. If the area of analysis for environmental justice issues were enlarged to encompass these tracts, and other tracts within one mile of the reuse plan area, eight more census tracts would fall within the area of analysis (Figure 6-1 illustrates these census tracts). All census tracts within a one-mile buffer around the reuse plan area are encompassed by the cities of Tustin, Irvine, and/or Santa Ana. This area bas a slightly higher proportion of non-White residents than the area defined by census tracts contiguous with the reuse plan area (28 percent compared to 27 percent), but a higher proportion of Hispanic residents (19 percent compared to 9 percent). In terms of total minority figures, the population within the one-mile buffer has a 38 percent minority population whereas the minority component of the population of five contiguous tracts was 32 percent.

The census tracts within one mile of the reuse plan area show a greater internal demographic variability compared to the five tracts contiguous with the reuse plan area, and this is a function of the more inclusive area containing individual tracts with higher proportions of minority populations.

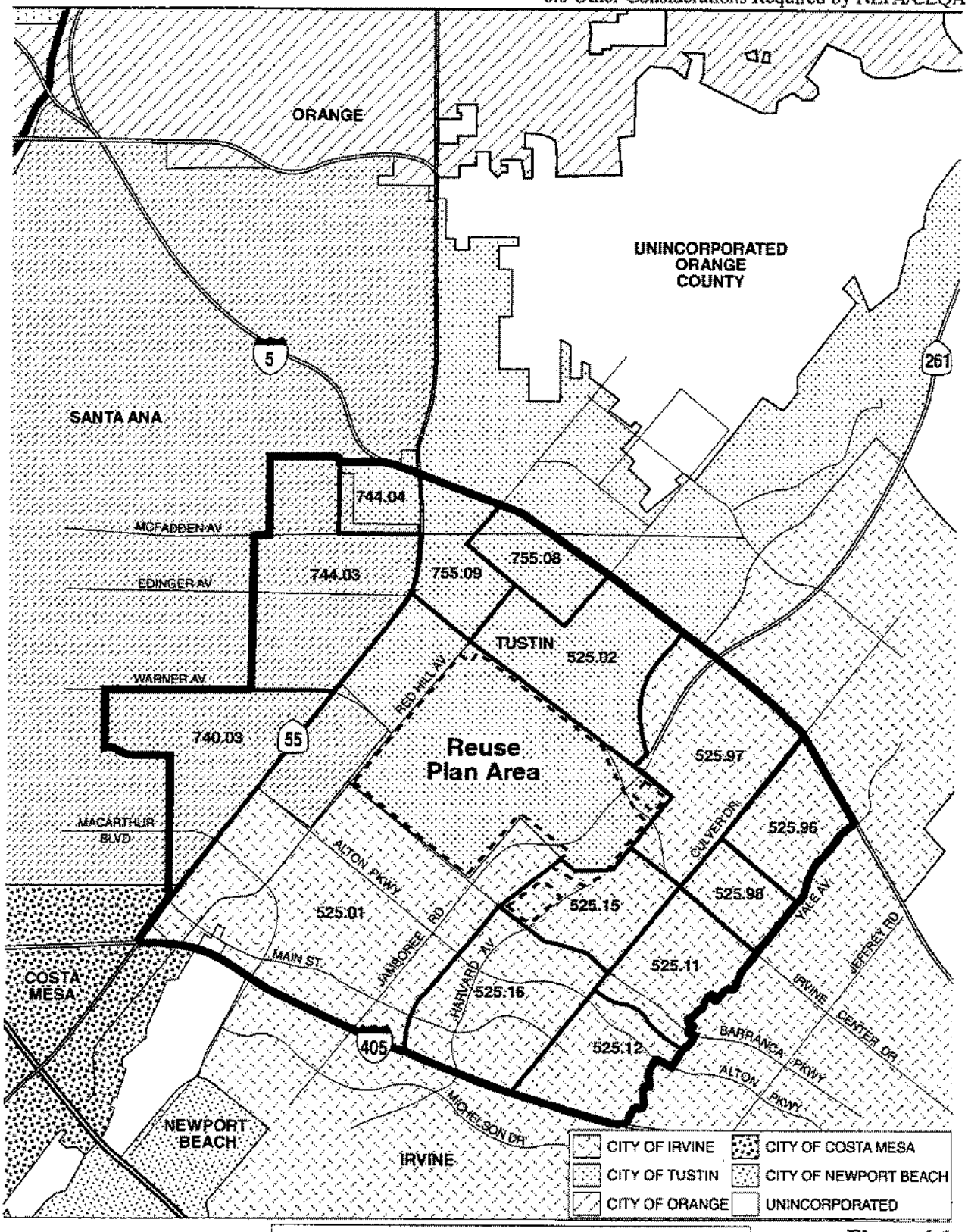


Figure 6-1
Census Tracts within One Mile of Project Area

Within the one-mile buffer, tracts have from 15 to 54 percent of their population comprised of non-white residents (compared to a range of 15 to 36 percent of the residents of the closer-in five tract area). Hispanic residents make up 5 to 91 percent of the population of the tracts within the one-mile buffer. The range is 6 to 13 percent of the population of the tracts including, or adjacent to, the reuse plan area. The total minority component of the population ranges up to 92 percent of the total population for the highest minority tract in the one-mile buffer; the highest minority population percentage in the contiguous five tract area is 39 percent. As an area, however, the census tracts within one mile of the reuse plan area cannot be considered a high minority area in comparison to the population of the state, although percentage of minority population is approximately 3 percent higher than for the county as a whole. The Hispanic portion of this population is lower than the Hispanic representation in the county or state population, while the non-White proportion of population of the area is lower than the non-White population component of the state, but higher than that of the county.

The percentage of people living below poverty level is less for the census tracts within one mile of the reuse plan area (6 percent) than for either the county (8 percent) or the state (12 percent). Median household income shows a great deal of variability from tract to tract within the area. Whereas, the median household income for the county is $45,922 and for the state is $35,798, census tracts in the one-mile buffer area ranged from $24,233 up $62,808. Five tracts have median household income below the state median income level; seven have median household incomes above the county median income level, including five tracts with median household incomes in excess of $60,000. Percent of persons living below the poverty level range from less than 2 percent of total tract population to over 22 percent. Three of the thirteen tracts in the area have a greater percentage of residents living below the poverty level than the county or state average. Taken as a whole, these data show that neither the area encompassed by the census tracts contiguous with the reuse area, nor the census tracts within one mile of the reuse area, can be considered low income areas when persons living below the poverty level is used as the measure. When examined on an individual tract basis, however, there are tracts that bave relatively high proportions of their population living in poverty.

6.7.3 Potential Disproportionate Impacts to Minority Populations or Low-income Populations

None of the reuse alternatives appear likely enough to have a disproportionate impact on minority populations or low-income populations to warrant further analysis beyond that conducted in each of the environmental issue areas. This is due to (1) the area encompassed by the census tracts contiguous with the reuse plan area do not include disproportionately high minority population or

low-income population components compared to adjacent communities or the county; and, (2) the impacts of the reuse of the site under any of tbe various alternatives are not considered to have negative socioeconomic impacts (see Section 4.2), or to be significant if they were to occur. The immediately adjacent City of Santa Ana has greater proportion of minority residents and low-income residents than seen in the cities of Tustin and Irvine, or in Orange County as a wbole. There is no indication, however, that these residents would experience disproportional adverse impacts as a result of the disposal and reuse of the site.

There may be potential on-site health and safety impacts resulting from exposure to environmental contamination/hazardous materials on the site during reuse (as discussed in Section 4.11), but there is no indication that any sucb potential impacts would disproportionately accrue to minority populations or low-income populations. Some changes in non-military land uses on the site may have an impact on non-military employment that could be relevant to minority populations or low income populations. For example, loss of agricultural lands under all of the reuse alternatives may result in the loss of some types of agricultural jobs typically held in disproportional numbers by minority or low-income area residents. Each of the reuse alternatives, however, creates a net gain in employment, and there is no evidence to indicate that the jobs created would not be available to minority populations and low-income populations.

Health and safety impact concerns could also extend off-site with some of the reuse alternatives. Air quality is one such issue, but given that any sucb impacts would be experienced on a regional basis, no disproportionate impacts to minority populations or low-income populations are anticipated.

CHAPTER 7.0
LRA REUSE ALTERNATIVE IMPLEMENTING ACTIONS

7.1 Description of Implementing Actions 7-1
7.2 Environmental Consequences of Implementing Actions 7-16
7.3 Cumulative Impacts 7-43
7.4 Other CEQA Sections 7-44

CHAPTER 7.0
LRA REUSE ALTERNATIVE IMPLEMENTING ACTIONS

7.1 DESCRIPTION OF IMPLEMENTING ACTIONS

Chapter 7 of this environmental document is a program-level EIR as defined by CEQA (Cal. Code Regs., Title 14, §15168), and it addresses only the environmental consequences of the five Implementing Actions for the LRA Reuse Alternative (Alternative 1) (hereinafter called Implementing Actions).

This chapter contains four sections which are similar in intent to individual chapters of this EIS/EIR. Section 7.1 provides a detailed description of the Implementing Actions, with a focus on the features and elements of the Specific Plan. It provides supplemental information to the description of Alternative 1 in Section 2.4.1. Section 7.2 analyzes the environmental impacts of the Implementing Actions. It clearly identifies where impacts would be different than identified under Alternative 1 in Chapter 4. Appropriate mitigation measures from Chapter 4 are incorporated by reference. Sections 7.3 and 7.4 consider cumulative impacts and other CEQA sections for the Implementing Actions only. They are similar in scope and intent to Chapters 5 and 6 of the EIS/EIR. Chapter 1 of this EIS/EIR describes how this program-level EIR will be used for environmental review as the Implementing Actions proceed over time. Chapter 3 describes the affected environment for the Implementing Actions.

The Implementing Actions consist of the following five actions:

1. Adoption of the *MCAS Tustin Specific Plan/Reuse Plan* (City of Tustin 1996b) and the *Errata* (City of Tustin 1998).

2. Amendments of the General Plans and Zoning Ordinances for the City of Tustin and the City of Irvine.

3. Amendment of the County of Orange Master Plan of Arterial Highways.

4. Final designation for MCAS Tustin by the California Trade and Commerce Agency under the LAMBRA Act.

5. Designation of MCAS Tustin and adjacent areas as a redevelopment project under California Community Redevelopment Law (Health and Safety Code §33000 et seq. and §33492.100 et seq).

Each of these Implementing Actions is described in more detail below in Sections 7.1.1 through 7.1.5.

7.1.1 MCAS Tustin Specific Plan

Both the City of Tustin and City of Irvine would use the Specific Plan to implement the goals and policies of their general plans related to the reuse of MCAS Tustin. The Specific Plan contains the development regulations that would constitute zoning for the property. As a federal installation, MCAS Tustin has not been subject to local zoning and planning requirements in the past. However, upon conversion to civilian use, the property would come under the jurisdictional authority of the City of Tustin and the City of Irvine. The property would be subject to the local codes and ordinances of these cities.

The *MCAS Tustin Specific Plan/Reuse Plan* (1996b) and *Errata* (1998) were prepared by the City of Tustin and included the following chapters:

1. Introduction;
2. Plan Description;
3. Land Use and Development/Reuse Regulations;
4. Specific Plan Administration; and
5. Reuse Authority/Institutional Framework.

Key components of the Specific Plan are described below.

Contents of the Specific Plan

Chapter 1 - Introduction

The Introduction to the Specific Plan describes the purpose of the Specific Plan, as well as its location and setting. This chapter of the Plan also summarizes the projected market demand for land uses, the reuse planning process, goals and planning principles, legal authorization for the Plan, the new environmental document is to be used; and Plan organization and use.

Chapter 2 - Plan Description

The Plan Description chapter includes: the purpose and scope of the Specific Plan; the Land Use Plan, including land use designations and neighborhoods; a description of the federal property disposal process; a summary of recommended property conveyance methods; and 13 plans for infrastructure and urban design to support planned land uses.

The Land Use Plan within the Plan Description chapter provides for a range of land use designations under the general categories of Residential, Commercial/Business, and Industrial/Recreational. The Land Use Plan also describes allowable densities and intensities for development, and specific land uses for each of the eight neighborhoods comprising the land use plan. Infrastructure and urban design are addressed as well. More detail about these individual elements is provided below.

Neighborhoods

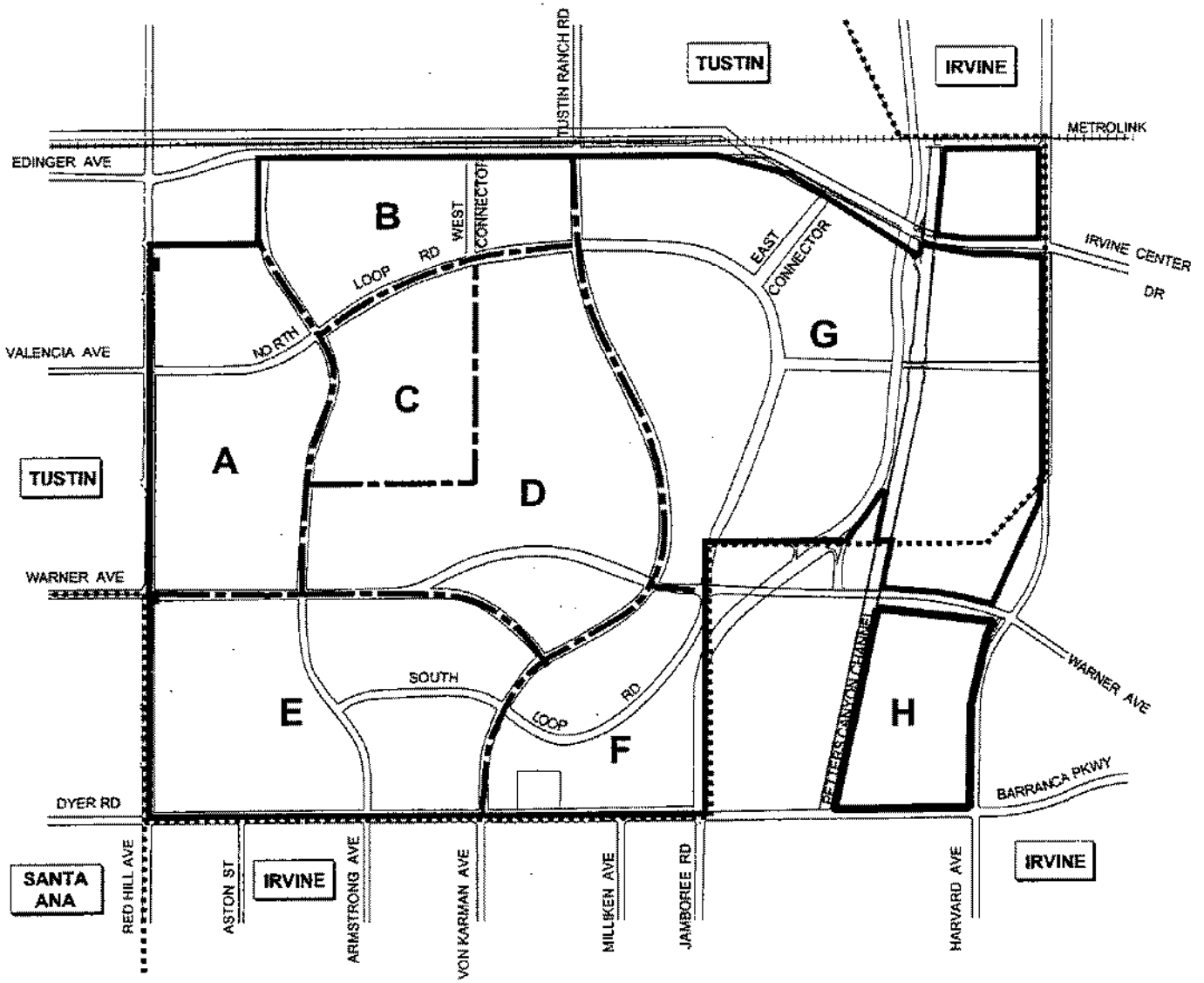
The Specific Plan includes eight distinct but interrelated neighborhoods which form the community structure (Figure 7-1). The neighborhoods are described in the Specific Plan as follows:

Neighborhood A - Learning Village

Neighborhood A is located along the northwestern edge of the site, bordered by Red Hill Avenue, Armstrong Avenue, Warner Avenue, and an existing business center. The Learning Village will be an important anchor for the community with its range of public-serving uses within a walkable campus setting. By virtue of its uses and operation, the Learning Village will be linked to many other uses and activities within the Specific Plan area. Its primary functions are to provide education, training, and specific social service functions. Primary access to Neighborhood A will be from a proposed North Loop Road (extension of Valencia Avenue eastward) and Armstrong Avenue. Secondary access will be provided by Warner Avenue.

Neighborhood B - Village Housing

Neighborhood B is located in the northeastern quadrant of the site, bordered by Edinger Avenue, Tustin Ranch Road, the proposed North Loop Road (extension of Valencia Avenue), and Armstrong Avenue. Through reuse or new development of a range of housing types, Neighborhood B is expected to offer basic, affordable housing within the Specific Plan area. The housing will be complemented by commercial village services that will meet the daily shopping needs of residents, employees, and visitors



Source: MCAS Tustin Specific Plan/Reuse Plan (City of Tustin 1996) and Errata (1998)
Base map: HNTB 1999

Figure 7.1-1
Neighborhoods

to the site. The neighborhood will also have a supporting function as a transition or buffer area between existing residential neighborhoods northeast of Edinger Avenue and the Learning Village and Community Core uses. Primary access to Neighborhood B will be from the North Loop Road. Secondary access will be provided by Armstrong Avenue and the West Connector Road.

Neighborhood C - Urban Regional Park

Neighborhood C is located near the center of the site, bordered by the North Loop Road (extension of Valencia Avenue) and Armstrong Avenue. It is adjacent to Neighborhood D on the southeast and southwest. The Urban Regional Park will be a significant public amenity that will not only serve regional needs, but provide a buffer between the living environment and commercial and business areas.

Neighborhood D - Community Core

Neighborbood D encompasses the central area of the Specific Plan site, bordered by Tustin Rancb Road, Warner Avenue, North Loop Road, and both the Urban Regional Park (Neighborhood C) and Armstrong Avenue on the north. This neighborbood will provide an opportunity for one or more unique, large-scale development proposals that will complete the Specific Plan area. The primary functions of Neighborbood D include: maintaining long-range flexibility as a major opportunity areas, providing opportunities for mixed-use development, revenue generation to offset especially bigh infrastructure and demolition costs, and special attraction to the Specific Plan area.

Neighborhood E - Employment Center

Neighborhood E is located in the southwest quadrant of the site, bordering Red Hill Avenue, Warner Avenue, Tustin Ranch Road, and Barranca Parkway. This neighborbood will be an employment center for the community. It will provide a business park setting for a full range of professional offices, research and development, and commercial business uses. Neighborhood E and the Learning Village in Neighborhood A will have important connections based on the potential for nearby on-the-job training opportunities for persons attending classes in the Learning Village.

Neighborhood F - Regionally-Oriented Commercial District

Neighborhood F is located in the southeasterly quadrant of the site, bordered by Jamboree Road, Barranca Parkway, and Tustin Ranch Road. This neighborbood will be an auto-oriented, regional

level commercial center. Desired commercial uses will include regional commercial and retail uses, specialty merchandising, wholesale, and discount commercial businesses. The southern hangar, if feasible to be retained, may provide the opportunity for a variety of industrial uses. This neighborhood also provides the support function of being an appropriate counterpart to the commercial wholesale uses in the Irvine industrial areas to the southwest.

Neighborhood G - Residential Core

Neighborhood G is located in the southeastern portion of the site, bordered by Edinger Avenue, Harvard Avenue, Tustin Ranch Road, and Warner Avenue. A small portion of this neighborbood adjacent to Warner Avenue is within the City of Irvine and currently accessed from the City of Tustin. The Residential Core contains both new and existing development and is intended to function as the primary residential enclave within the community. The Residential Core will provide a range of housing types from transitional family units to entry-level units, higher-end bousing, and commercial opportunities to be located adjacent to the golf course. This neighborhood will also include recreation-based amenities and visitor-serving uses. It provides the opportunity to tie existing housing to the community through uses, access, and design. As a support function, Neighborhood G will also provide a desirable transition to existing Tustin and Irvine residential neighborhoods to the north and east.

Neighborhood H - Irvine Residential Neighborhood

Neighborhood H is in the south corner of the site, bordered by Warner Avenue, Harvard Avenue, Peters Canyon Channel, and Barranca Parkway. By virtue of its location within the City of Irvine, this existing family housing, when converted to civilian use, will provide a buffer between Irvine residential neighborhoods to the southeast and business uses to the southwest. It will also contain an elementary scbool and park facilities as needed to support residents in the vicinity.

Infrastructure and Urban Design

The Plan Description chapter also includes plans for infrastructure and urban design to support planned land uses. These 13 plans are summarized below.

The circulation plan provides for a major northeast-southwest link via Tustin Ranch Road and an southeast-northwest link via Warner Avenue, with a unifying internal loop roadway. The recreational bikeway/trail plan provides for Class II on-road bikeways on each of the Specific Plan's

roadways and links to adjacent on- and off-road local and regional bikeways and trails. The parks/recreation/open space plan provides for a variety of public parklands, private recreation facilities, and trails including three neighborhood parks, a community park, a regional park, and an 18-hole golf course. An extensive system of existing recreation facilities within the existing housing area on site is incorporated into the Specific Plan.

The recreational bikeway/trail concept plan provides an opportunity to complete vital links necessary for a comprehensive regional system, as well as an improved local system. The cities of Tustin and Irvine, and the Orange County Public Facilities and Resources Department have developed their own recreational bikeway and trail master plan to efficiently move cyclists within the respective communities served. Ongoing interagency coordination will be required to address the issues associated with bikeway and trail implementation.

The parks/recreation/open space plan offers a variety of public parklands, private recreation facilities, and trails to serve the residents of the Specific Plan area as well as the larger community. The plan identifies a variety of public parks including three neighborhood parks, a community park, and a regional park. Recreation facilities will consist of a privately owned 18-bole golf course open to the public in the Golf Village and an extensive system of existing recreation facilities within the existing housing areas.

The schools plan includes provision for four school sites to accommodate the student population growth estimated by the affected school districts in Tustin and Irvine. The location, size, and configuration of the sites is generalized and will be determined when the land is conveyed to the school districts by DON or the LRA (in the event of an Economic Development Conveyance). Within the TUSD, two 10-acre elementary schools (K-6) and one 40-acre high school are planned. Within the IUSD, a 20-acre elementary school (K-8) is planned.

The domestic water plan provides for a new backbone water system of pipelines following a loop pattern and providing service areas with sources of supply. The reclaimed water plan provides for a new backbone system following a loop pattern and potential use of new well sites.

The sanitary sewer plan provides for development of a new loop backbone system of sewer lines, with gravity flows to the south and forced flows to the north, and incorporating existing mains. The storm drainage plan provides for a new backbone system along major arterial roadways for five major on-site drainage areas, mainline facilities for each of the drainage areas, and improvements

to existing channels. The electricity, natural gas, telephone, and cable television plans provide for new underground systems for utilities to be maintained by service providers.

The urban design plan provides for distinct and cohesive architectural and landscape design, features, and treatments to create strong community character and identity for the site. The land use and development/reuse regulations provide for specific building and site design standards and guidelines for each neighborhood and for planning areas within each neighborhood; general development regulations; signage regulation; and off-street parking requirements for individual developments. Among the requirements are the following provisions:

- approval of a concept plan, including landscaping concept and master signage plan, prior to new development;
- design review and approval prior to new development;
- aesthetic upgrade of existing buildings and surrounding areas through architectural and landscape improvements;
- limits on intensity of development of each specific land use;
- limit on height of structures and lot coverage;
- minimum site building setbacks;
- minimum on-site landscaping requirements;
- buffering requirements, including berms, masonry walls, and landscaping;
- lighting regulations, including regulations ensuring that exterior lighting does not negatively impact surrounding property;
- screening regulations for mechanical equipment and outside storage; and
- site signage requirements, including sign permit approval.

Chapter 3 - Land Use and Development Regulations

Chapter 3 of the Specific Plan includes a detailed set of land use and development regulations. Regulations applicable to development in each neighborhood are described, along with general development regulations that apply to the property as a whole. Examples of the regulations include: permitted and conditionally permitted uses, site development standards, maximum dwelling units, transfer of dwelling unit allocations, non-residential land use/trip budget, signage, and off-street parking.

Chapter 4 - Specific Plan Administration

As described in Chapter 4 of the Specific Plan, the City of Tustin and City of Irvine would administer and enforce provisions of the Specific Plan including: (1) processing assistance, (2) interpretations of provisions, (3) management of the pbasing program and non-residential land use/trip budget, (4) approval of temporary and interim uses, (5) specification of conditions of approval, and (6) authorization of certificates of use and occupancy for new development and reuse.

Pbasing

This Specific Plan chapter includes a phasing plan for future development of the site. The buildout of the Specific Plan would occur incrementally over a 20+ year timeframe. The actual level of development within any given pbase would be tied to the availability of infrastructure necessary to support sucb development. The approximate anticipated timing of development is described in Chapter 2. The future market demand for uses planned for the site and the complexity and timing of environmental cleanup efforts are the primary factors influencing the scbedule of development.

Where adequate infrastructure is in place and would support anticipated development, an earlier response to positive market conditions would enable more rapid buildout. Where a proposed development would not be supported by existing infrastructure, conditions of approval would be established to ensure that necessary infrastructure would be constructed in accordance with the Specific Plan.

Pbasing triggering mechanisms that would apply to all development anticipated to occur under the Specific Plan would include facilities and improvements that must be constructed for the subsequent increment of development to proceed. These would include specific on-site and off-site roadway improvements, drainage, water, sewer, electricity, gas, and other utility improvements, and community facilities, including parks. The timing for on-site circulation improvements would he based on specific thresholds for a number of total cumulative additional ADTs. Once the threshold bas been reached, identified specific circulation improvements would be initiated to allow subsequent development.

Certain portions of the site could be rehabilitated without initiating major infrastructure improvements. However, these areas would still bear a proportionate share of on-site and off-site roadway infrastructure costs. They consist of either existing or proposed bousing that could be supported by existing infrastructure. These areas include:

- the medium high density residential land use located near the southeast corner of Edinger Avenue and Jamboree Road;
- existing housing located between Jamboree Road and Harvard Avenue, northeast of Moffett Avenue;
- the proposed elementary school and the neighborhood park sites located north of the corner of Barranca Parkway and Harvard Avenue; and
- existing housing located between Jamboree Road and Harvard Avenue, southwest of Moffett Avenue.

The phasing requirements are summarized in Table 7-1.

Interim Uses

Chapter 4 of the Specific Plan provides for interim uses within the site. The purpose of such uses is to contribute to the continued productivity of the land even though they are not intended to be permanently part of the development pattern. Some interim uses are a continuation of uses similar to existing uses, and they will eventually be replaced. Others may be established in the future to respond to certain site conditions (i.e., hazardous waste cleanup), offset operations and maintenance costs, capture worthwhile market opportunities, or allow for an incremental transition to a permanent use. Existing interim uses will be subject to the requirements of the Specific Plan, where not superseded by the federal government.

Leasing of property for interim uses prior to deed transfers may be conducted by the federal government. Following disposal of the property, the LRA or private interests controlling property on the site may also lease property for interim uses.

Potential interim uses may include continuation of some existing uses, including agricultural leases; storage; industrial warehousing and distribution; office; media industry using the hangars or other structures for filming; and other uses subject to interim use permit requirements established in the Specific Plan.

Chapter 5 - Reuse Authority/Institutional Framework

Chapter 5 of the Specific Plan describes the management and organizational framework for redevelopment of the property, including a plan implementation strategy and tasks. Also included are descriptions of property maintenance and caretaker services, property conveyances, economic

Table 7-1
Phasing Plan Requirements

General Scope	General Triggering Mechanism
Circulation	
1) On-site arterial highways, intersections, and Tustin Ranch Road/Edinger Avenue interchange. 2) Off-site arterial highway, intersection improvements. 3) Selected advanced transportation management system (ATMS) facilities.	When cumulative development and associated ADTs reach ADT development thresholds per phased development.
Bikeways/Trails	
1) Class 1 Bikeway along Peters Canyon Channel. 2) On-site Class II Backbone Bikeway System.	1) When Peters Canyon Channel is improved by the county. 2) When backbone arterial highways are constructed.
Domestic (Potable) Water	
1) Existing housing water distribution lines. 2) New backbone water mains. 3) Abandoned/relocated wells.	1) Upon determination by IRWD regarding acceptability of the lines. 2) When backbone arterial highways are constructed. 3) Upon determination by the IRWD.
Reclaimed (Non-Potable) Water	
1) New backbone water lines. 2) Existing and new well sites.	1) When backbone arterial highways are constructed. 2) Upon completion of negotiations by IRWD and developer(s) regarding exchange of well sites.
Sanitary Sewer	
1) Existing housing sewer conveyance lines. 2) New backbone sewer mains.	1) Upon determination by the IRWD and OCSD regarding acceptability of the lines. 2) When backbone arterial highways are constructed.
Storm Drain	
1) Backbone storm drain channels. 2) Regional flood control channel improvements. 3) Retention basins. 4) Flood plain mitigation.	1,2) Armstrong storm drain prior to any Phase II construction. 1,2) Generally in conjunction with arterial highway construction. 3) Upon determination of acceptability as part of development plans. 4) Filing of flood zone map with FEMA prior to any Phase II construction.
Electricity	
Backbone electric distribution lines.	When backbone arterial highways are constructed.
Natural Gas	
Backbone gas distribution lines.	When backbone arterial highways are constructed.
Telephone	
Backbone telephone lines.	When backbone arterial highways are constructed.
Cable Television	
Backbone cable television distribution lines; fiber optic cables.	When backbone arterial highways are constructed.
Parks	
1) Regional park. 2) Community park. 3) Two neighborhood parks in Tustin. 4) One neighborhood park in Irvine.	1) Site can be used upon transfer to the county; improvements will occur per agreement with City of Tustin. 2) Site can be used upon transfer to the city; upgrading will occur upon receipt of adequate park development fees. 3) When adequate park development fees are received. 4) When adequate funding has been secured from assessment district funding, tax-increment, or developer-negotiation.

development conveyances, personal property transfer, marketing strategy, and infrastructure financing strategy.

7.1.2 Amendments to City of Tustin Plans and Regulations

Amendment of the General Plan, zoning ordinance, and zoning map by the City of Tustin, related to the 1,511-acre portion of the MCAS Tustin Specific Plan located in Tustin, would be necessary to implement the LRA Reuse Alternative. As the city's primary long-range planning document addressing future growth and development, affected elements or chapters of the General Plan will be amended as follows:

- General description of the MCAS Tustin Specific Plan, its plan development process, and associated issues, goals, and policies.

- Amendment of the Land Use Element of the General Plan describing the MCAS Tustin Specific Plan, inclusion of the Specific Plan designation of the Land Use Policy Map in place of the present Military and Public/Institutional land use designations, and other minor narrative and statistical corrections to ensure consistency between General Plan elements and to update General Plan information.

- Amendment of the Housing Element to reflect base closure and disposition of existing military housing, opportunities for new housing provided by the MCAS Tustin Specific Plan, and other minor narrative and statistical corrections to ensure consistency between General Plan elements and to update General Plan information.

- Amendment of the Circulation Element, and its arterial Highway Plan (and the Orange County Master Plan of Highways) and Bikeway Plan, necessary to support implementation of the MCAS Tustin Specific Plan and other projected traffic growth affecting the city street system (including the southwesterly extension of Tustin Ranch Road from Edinger Avenue to Barranca Parkway, the northwest/southeast extension of Warner Avenue from Red Hill Avenue to Jamboree Road through the Specific Plan site; and the addition of a new loop system consisting of Valencia North Loop Road and South Loop Road, Armstrong Avenue, and East Connector and West Connector between Valencia North Loop Road and Edinger Avenue within the Specific Plan site), and other minor statistical corrections to ensure consistency between General Plan elements and to update General Plan information.

- Amendment of the Conservation/Open Space/Recreation Element incorporating major landscaped roadways within the Specific Plan area as scenic resource corridors, and proposed

parks within the Specific Plan area as part of the city's planned park and recreation facilities, and other minor narrative and statistical corrections to ensure consistency between General Plan elements and to update General Plan information.

- Amendment of the Public Safety Element describing the BCP and potential amendment of the AELUP to accommodate interim blimp flights and heliports.

- Amendment of the Noise Element to reflect roadway traffic noise associated with implementation of the Specific Plan.

- Amendment of Growth Management Element describing new planned transportation improvements, including the extension of Tustin Ranch Road and Warner Avenue through the Specific Plan site, and the addition of a new loop roadway system within the Specific Plan site.

The City of Tustin Zoning Ordinance would be amended to refer to the MCAS Tustin Specific Plan as the planning and regulatory document governing future development within the Specific Plan site. Amendment of the zoning map would change the zoning for the Specific Plan site from Public and Institutional to MCAS Tustin Specific Plan.

7.1.3 Amendments to City of Irvine Plans and Regulations

Amendment of the General Plan, zoning ordinance and zoning map by the City of Irvine, related to the 95-acre portion of the MCAS Tustin Specific Plan located in Irvine, would be necessary to implement the LRA Reuse Alternative. As the city's primary long-range planning policy document addressing future growth and development, the General Plan would be amended to reflect:

- A general description of the MCAS Tustin Specific Plan, its plan development process, and associated issues, goals and policies.

- Amendment of the Land Use Element of the General Plan describing the MCAS Tustin Specific Plan, and proposal of the land use designation on the Land Use Policy Map in place of the Military and Recreation land use designations which are consistent with land uses in the MCAS Tustin Specific Plan.

The City of Irvine zoning ordinance would be amended to refer to the MCAS Tustin Specific Plan as the planning and regulatory document governing future development with the 95-acre portion of the site within Irvine. Amendment of the zoning map would change the zoning for the Specific Plan

site in Irvine from Military and Development Reserve to zoning categories consistent with the MCAS Tustin Specific Plan.

7.1.4 Amendment to County of Orange Plans

Amendment of the Orange County Master Plan of Arterial Highways (MPAH) by the County of Orange would be necessary to implement the LRA Reuse Alternative. The MPAH would be amended to include: the southerly extension of Tustin Ranch Road from Edinger Avenue to Barranca Parkway; the east/west extension of Warner Avenue from Red Hill Avenue to Jamboree Road through the Specific Plan site; and the addition of a new loop system consisting of Valencia North Loop Road and South Loop Road, Armstrong Avenue, and East Connector and West Connector between Valencia North and Edinger Avenue within the site.

Both the Tustin Ranch Road and Warner Avenue extensions would be classified as six-lane major arterials. Valencia North Loop Road and South Loop Road, Armstrong Avenue, and the East Connector and West Connector would be classified as four-lane secondary arterials.

7.1.5 LAMBRA Designation

The City of Tustin applied to the CTCA for designation as a LAMBRA and was granted a conditional designation as a LAMBRA on June 23, 1997. The purpose of this designation is to stimulate business and industrial growth in areas affected by military base closures through the provision of relaxed regulatory controls, tax credits, and other economic incentives to private sector investors. As an Implementing Action for the LRA Reuse Alternative, final designation as a LAMBRA would be granted by CTCA.

7.1.6 Redevelopment Project

California Community Redevelopment Law (Health and Safety Code, §33000 et seq.) establisbed redevelopment as a primary tool for use by cities and counties to revitalize deteriorating and blighted urban areas. It established a complex legal process that endows a city or county with specific authority to establish a redevelopment agency and one or more redevelopment project areas. As an Implementing Action for the LRA Reuse Alternative, the City of Tustin intends to establish a redevelopment project for the MCAS Tustin Specific Plan under this law, including Chapter 4.5 commencing with Section 33492 et seq. and special legislation pertaining to the realignment and closure of MCAS Tustin contained in Section 33492.100 et seq., the California Constitution, and all

applicable laws and ordinances. A summary of the main provisions of the MCAS Tustin closure legislation and standard redevelopment plan adoption requirements is presented in Table 7-2.

Table 7-2
Standard Redevelopment Plan Adoption vs. Tustin Base Closure Legislation

	Standard Redevelopment Plan Adoption	Tustin Base Closure Legislation
Plan Effectiveness	30 years	30 years
Debt Establishment	20 years + 10 year amendment	20 years + 10 year amendment
Repay Indebtedness/ Collect Tax Increment	45 years	45 years
Eminent Domain	12 years	MCAS Tustin - Yes, 12 years Non-base - No
Tax Increment Limit	No	No
Bonded Indebtedness Limit	Yes	Yes
Urbanization Finding Requirement	Yes	MCAS Tustin - No Non-base - Yes
Deferral of Low-Moderate Housing Payment	No	Yes (Up to 10 years-50 percent of amount required by Section 33334.2)[1]
General Plan Conformance Finding Required for Plan Adoption	Yes	No[2]
EIR Required for Plan Adoption	Yes	No[3]
Statutory Tax Sharing Formulas	Yes	Yes[4]
Blighting Condition Required for Adoption	One physical and one economic (CRL Section 33031)	Combination of two or more of the conditions described in CRL Section 33492.104

(1) Agency shall pay to the low-moderate-income housing fund the amount of payments deferred between the period beginning the 11th year to the end of the 20th year after the establishment of the project area.

(2) Agency may not expend any tax increment funds allocated to the agency from the project area on project-related expenses until the City of Tustin finds the Redevelopment Plan conforms with the general plan of the city.

(3) Agency does not need to make a finding that the Redevelopment Plan is consistent with the general plan.

(4) The agency shall make pass-through payments, except that each of the time periods governing the payments shall be calculated from the date the county auditor makes the certification pursuant to Section 33492.9 of the CRL, instead of from the first year that the agency receives tax increment revenue.

The MCAS Tustin legislation allows for adoption of a Redevelopment Plan without conformity with or findings of consistency with applicable general plans for the area. The MCAS Tustin legislation does require that prior to implementation of any redevelopment activities within the redevelopment project or the expenditure of tax increment funds allocated to the agency, the applicable general plans in Tustin and Irvine be amended as appropriate for the project area and findings of consistency be made.

The proposed Redevelopment Plan, which will be forthcoming, will include MCAS Tustin property within Tustin and Irvine and may also include up to 52 acres of property that is non-contiguous outside, but adjacent to the MCAS Tustin property. The cities of Tustin and Irvine have agreed to cooperate in the planning and implementation of a Redevelopment Plan for the entirety of the proposed property and the City of Irvine has granted redevelopment authority to the Tustin Community Redevelopment Agency over the portion of MCAS Tustin located within the City of Irvine.

The environmental analysis of the proposed redevelopment project is being conducted on the MCAS Tustin portion of the site only at this time. A subsequent tiered environmental document will be prepared to address any additional land area outside of the MCAS Tustin project.

7.2 ENVIRONMENTAL CONSEQUENCES OF IMPLEMENTING ACTIONS

This section describes the environmental impacts associated with the Implementing Actions described in Section 7.1 for the LRA Reuse Alternative only. The environmental consequences of DON disposal, the three reuse alternatives, and the No Action alternative are described in Chapters 4 and 5 of this EIS/EIR.

In Chapters 4 and 5, the environmental analysis of the LRA Reuse Alternative identified the environmental impacts and mitigation measures associated with disposal and reuse of MCAS Tustin. In the environmental analysis of the Implementing Actions which follows, those impacts are assumed to occur and are summarized in each subsection. The analysis in this section focuses on the physical impacts of the Specific Plan and other Implementing Actions above and beyond that previously identified. Only the population and housing components of socioeconomics are addressed in this CEQA analysis because the other components are not required under CEQA. The 14 issue areas are addressed in the same order as presented in Chapters 3 and 4, with Population and Housing replacing Socioeconomics.

7.2.1 Land Use

Significance Criteria

Land use impacts would be considered significant if the Implementing Actions would result in development of uses that would be (1) internally incompatible within the site or incompatible with surrounding existing or planned land uses, (2) inconsistent with applicable land use plans and

policies of the City of Tustin or the City of Irvine and/or (3) inconsistent with the AELUP for John Wayne Airport and such inconsistencies could not be mitigated.

Impacts

As discussed in Section 4.1, a significant impact would exist where reuse of MCAS Tustin would create potential incompatibility or conflict with adjacent existing or planned land uses or with land uses in the surrounding area. Incompatibility would result from the proximity of existing land uses, such as agriculture, to new urban uses as development associated with reuse occurs on site. A significant impact would also result from inconsistency with applicable land use plans and policies of the City of Tustin or the City of Irvine which currently designate MCAS Tustin for public/institutional and military use. Mitigation included in Section 4.1 calls for zoning ordinance amendments to regulate land use so that such land use incompatibilities and conflicts may be avoided, as well as General Plan amendments to designate the site as MCAS Tustin Specific Plan.

The discussion below focuses only on the potential effects of the Implementing Actions.

Adoption of the Specific Plan, amendments to Tustin and Irvine general plans, zoning ordinances and maps, amendment of the Orange County MPAH, LAMBRA designation, and Redevelopment Plan formation would provide the City of Tustin, the Tustin Community Redevelopment Agency, and the City of Irvine, as applicable, with control over various characteristics of the LRA Reuse Alternative, such as land use designations, zoning categories, recreation and open space areas, major arterial roadways, urban design, public facilities, and infrastructure systems. However, of these Implementing Actions, only adoption of the Specific Plan, amendments to the Tustin and Irvine general plans/zoning ordinances/zoning maps, and the Orange County MPAH amendment would create physical changes.

The Implementing Actions would mitigate a previously identified land use impact by addressing compatibility through proper land use planning and amending pertinent general plans and zoning ordinances. Land uses allowed under these Implementing Actions would be internally compatible within the site and with surrounding existing and planned land uses based on regulations controlling land use and development standards (such as screening, buffering, and landscaping) contained within the Specific Plan. The general plan and zoning ordinance/zoning map amendments by Tustin and Irvine, as well as the Orange County MPAH amendment, have been specifically designed to create consistent policy and regulations governing redevelopment of MCAS Tustin. The LAMBRA designation is consistent with land uses in the Specific Plan that are designed to accommodate

business and industrial growth in areas affected by military base closures. Redevelopment Project formation would provide another means of financing the improvements needed to develop the Implementing Actions and would support the Specific Plan development through tax increment financing. In addition, pursuant to §33492.3 and §33320.1, urhanization findings would not need to be made for MCAS Tustin.

Mitigation Measures

The Implementing Actions are the mitigation measures specified in Section 4.1.2, and their adoption would mitigate any potential land use impacts associated with the LRA Reuse Alternative. Amendments to the general plans and zoning ordinances would control land use and development and would create consistent policy and regulations for redevelopment of MCAS Tustin. No further mitigation measures would be required.

7.2.2 Population and Housing

Significance Criteria

Population impacts are considered neither adverse nor beneficial by themselves; however, population impacts may have ramifications for other environmental issues, i.e., increased demand for parks. The significance of other impacts are defined in pertinent sections of this document.

Because one purpose and need for reuse is to generate housing, any increased housing availability would be beneficial. The City of Tustin also identified an "affordability gap," so any increased availability of affordable housing would also be beneficial. Any changes that would cause displacement of existing housing or preclude the development of any additional affordable bousing units within the reuse plan area would be significant.

Impacts

As discussed in Section 4.2, development of the reuse plan area would increase the population of Tustin and Irvine by approximately 12,500 persons through the provision of new housing units. This represents a net increase of approximately 9,350 persons over the baseline population. The ramifications of this population growth for other environmental issues are addressed in Chapters 4, 5, 6, and 7 of this document. Many of these effects can be avoided or reduced to a less than significant level through careful project design and the application of standard development

engineering practices and existing regulations. Where significant impacts could occur, such as dust from construction, mitigation measures are identified.

Approximately 4,600 housing units would be provided on site at buildout. Over a third of the units are existing military housing which could be converted to civilian use or reconstructed; therefore, no displacement of existing housing would occur. Up to 1,699 units of medium high density housing, which is generally more affordable than low density housing, would be developed on the site. Provision of affordable housing would address the needs of persons of low and moderate income, as well as the homeless. No significant housing impacts would occur and no mitigation is required.

The discussion below focuses on the potential effects of the Implementing Actions.

Adoption of the Specific Plan, amendments to Tustin and Irvine general plans, zoning ordinances and maps, and Redevelopment Project formation would provide the City of Tustin, the Tustin Community Redevelopment Agency, and the City of Irvine, as applicable, with control over various aspects of the LRA Reuse Alternative, such as the number, type, and location of housing units to be constructed. Although population is not specifically limited by the Implementing Actions, characteristics of housing units to be developed (such as, square footage of floor area, number of bedrooms, and available parking) would place practical limitations on the number of persons that could reside on the site. Amendments of the Orange County MPAH and the LAMBRA designation do not affect population and housing issues under the LRA Reuse Alternative.

Control over housing developed on the site under the LRA Reuse Alternative would extend to the density of housing to be constructed. The inclusion of up to 1,699 units of Medium High Density Residential (16-25 dwelling units/acre) and affordable housing provision in selected areas would meet the needs of low and moderate income persons and the homeless, resulting in a beneficial housing effect. Redevelopment Project formation would result in the generation of tax increment revenue as development of the site proceeds; a portion of this revenue must be allocated to the provision of affordable housing under California law. Control over the amount, location, and types of housing under the LRA Reuse Alternative provided through the Implementing Actions would thus avoid significant environmental impacts associated with the issues of housing.

Mitigation Measures

The proposed Implementing Actions would not result in significant population impacts beyond those identified for specific environmental issues as described in Chapter 4. No further mitigation measures would be required beyond those identified in Chapter 4, which are hereby incorporated by reference. With no significant environmental impacts associated with bousing, no mitigation would be required.

7.2.3 Utilities

Significance Criteria

Utilities impacts would be considered significant if Implementing Actions would require or result in construction of new systems or facilities when the construction of such systems or facilities would cause adverse cbanges or alterations to the physical environment or exceed supplies or on-site and off-site capacity of service providers.

Impacts

As described in Section 4.3, reuse of MCAS Tustin would not result in utilities demands that exceed the capacity of providers. Utilities are a part of Alternative 1 reuse, and construction impacts affecting specific environmental issues are described in Chapters 4, 5, 6, and 7 along with mitigation measures for significant environmental impacts.

The discussion below focuses only on the potential effects of the Implementing Actions.

The Implementing Actions would regulate development within the Specific Plan area over 20+ years and would provide the City of Tustin with control over all aspects of project implementation, including construction of needed utilities. The Specific Plan includes phasing requirements for utilities and general triggering mechanisms to avoid exceeding the capacity of utility systems. Adoption of tbe Implementing Actions would formalize an overall plan (the Redevelopment Plan) for providing and financing utilities to support redevelopment of the site. The utilities would be provided according to a phasing plan to meet utility needs as development of the site proceeds. Proposed development not supported by existing utilities would only be approved when necessary utilities could be provided and financed as conditions of development approval. Redevelopment

Project formation would provide another means of financing utilities to support implementation of the Specific Plan through tax increment financing.

Long-term maintenance of utilities would create periodic short-term construction impacts. These impacts would be considered less than significant because they would be regulated through the cooperative efforts of the City of Tustin and service providers, and would be limited to specific areas where such maintenance work would not preclude continuance of public and private activities expected to occur in this urban setting.

These Implementing Actions would not create any significant utilities impact.

Mitigation Measures

The phased implementation of utility improvements, as described in the Specific Plan, would ensure the availability of utilities concurrent with need. Zoning ordinance amendments adapting the Specific Plan should be consistent with this phasing schedule. No mitigation measures would be required for the Implementing Actions beyond those related to utilities construction in Chapter 4 which are hereby incorporated by reference.

7.2.4 Public Services and Facilities

Significance Criteria

Public services and facilities impacts would be considered significant if the Implementing Actions would: (1) result in provision of new or physically altered governmental facilities and the construction of such facilities would cause adverse changes to the physical environment; or (2) when the demand for public services or facilities would exceed the available planned capacity of those services. For parks and recreation, the standard for determining capacity is three acres per 1,000 population (City of Tustin 1994a).

Impacts

As described in Section 4.4, reuse of MCAS Tustin would not result in public services and facilities that exceed the capacity of providers. Public facilities are a part of Alternative 1 reuse, and construction impacts affecting specific environmental issues are described in Chapters 4, 5, 6, and 7 along with mitigation measures for significant environmental impacts.

The discussion below focuses only on the potential effects of the Implementing Actions.

The Implementing Actions would regulate development of the Specific Plan over 20+ years. Adoption of the Specific Plan, general plan/zoning ordinance/zoning map amendments, and Orange County MPAH amendment would formalize an overall plan for providing and financing public services and facilities to support the Specific Plan. The public services and facilities would be provided according to a phasing plan to meet projected needs as development of the site proceeded.

Long-term maintenance of public facilities would create periodic short-term construction impacts. These impacts would be considered less than significant because they would be regulated through the cooperative efforts of local government and service providers, and would be limited to specific areas where such maintenance work would not preclude continuance of public and private activities expected to occur in this urban setting.

These Implementing Actions would not create any significant public services and facilities impact.

Mitigation Measures

The phased implementation of public services and facilities improvements is described in the Specific Plan. The Phasing Plan would ensure the availability of public services and facilities concurrent with need. Zoning ordinance amendment adopting the Specific Plan should be consistent with this phasing schedule. No mitigation measures would be required for the Implementing Actions beyond those related to public facilities construction in Chapter 4 which are hereby incorporated by reference.

7.2.5 Aesthetics

Significance Criteria

Aesthetic impacts would be considered significant if: (1) identified sensitive viewers (residents along Harvard Avenue and Edinger Avenue) would experience a strong contrast or there would be a strong contrast to areas/features of high scenic quality; or (2) if development would create a new source of light or glare which would degrade day or nighttime views, or interfere with operations of light-sensitive uses, such as an observatory.

Impacts

As described in Section 4.5, reuse of MCAS Tustin would result in a less than significant impact resulting from visual contrast associated with (possible) removal of one or both blimp hanger and development of commercial, golf course, hotel, and residential uses where agricultural operations or undeveloped land currently exist. Removal of one blimp hanger would not be significant because the remaining hanger would continue to serve as a prominent feature on the site. However, the loss of both hangers would result in a significant, unmitigable visual impact. A potentially significant impact would occur if landscaping and urban design did not fully address aesthetic considerations, and mitigation would include implementation of a Specific Plan and associated urban design plan.

The discussion below focuses only on the potential effects of the Implementing Actions.

Adoption of the Specific Plan, General Plan amendments, and zoning ordinance/zoning map amendments would provide the City of Tustin and Irvine, as applicable, with control over the urban design elements of the LRA Reuse Alternative. The visual quality of the project site would be improved through application of the Specific Plan urban design plan as development occurs, and this effect would be considered beneficial. Architectural guidelines within the urban design plan and the land use development/reuse regulations would avoid the creation of sources of light and glare that would degrade day or nighttime views or interfere with light-sensitive uses. The general plan and zoning ordinance/zoning map amendments by Tustin and Irvine, as well as the Orange County MPAH amendment, have been specifically designed to create consistent policy and regulations, including those for urban design that govern the Specific Plan. Under the Redevelopment Project, design review and approval by the Tustin Community Redevelopment Agency would be required.

The Specific Plan would reduce the aesthetic impact identified in Section 4.5 because it includes a comprehensive urban design plan, a community structure concept, and detailed development standards to create a well-defined and cohesive development while preserving a village character. The urban design plan is designed to achieve aesthetic integration of uses within the site and with surrounding land uses in the adjacent community, encouraging architectural, landscape, streetscape and site enhancements to improve the character of the project. The community structure concept would be defined by community boundaries for the perimeter of the site and an edge treatment. Major entry points would be emphasized by a massing of low plants and trees. Open views to the site would be encouraged, including view corridors to the northern blimp hanger, if the hanger is retained. Where screening would be required, a combination of landscaping and earthen berms would be used to provide privacy. The Specific Plan would provide for visually attractive features

including courtyards, common greens, and pedestrian paths, as well as trail linkages to adjacent neighborhoods.

The urban design plan would provide development standards and design review to ensure that aesthetic considerations would be fully addressed. As a result, implementation of the Specific Plan would improve the visual character of the site, and the overall effect on aesthetics would be beneficial. Impacts to future sensitive viewers would be reduced to below a level of significance with implementation of the Specific Plan.

Mitigation Measnres

The Implementing Actions are the mitigation measures specified in Section 4.5.2, and their adoption would mitigate any potential aesthetic impacts associated with the LRA Reuse Alternative. The Specific Plan, specifically the urban design plan, would implement distinctive and cohesive design features and would create strong community character and identity for the site, a beneficial effect. No further mitigation measures would be required.

7.2.6 Cultural and Paleontological Resources

Significance Criteria

Cultural Resources

An undertaking would be considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include physical destruction; isolation of the property from the property's setting; introduction of new elements that are out of character with the property; neglect of the property resulting in deterioration; and transfer, sale, or lease of the property.

Several factors are taken into consideration when determining the significance of an archaeological site. Integrity is one of those key factors; without integrity, a site would generally not be considered significant. Intensity of impact is also a consideration, as under NEPA the "degree to which the action may adversely affect districts" is a factor in determining significance.

Paleontological Resources

Any impacts to unique paleontological resources would be significant.

Impacts

As discussed in Section 4.6, the two blimp hangars and their associated buildings and structures have been found to be eligible for the NRHP. Disposal of MCAS Tustin would result in the transfer of the eligible properties from federal ownership. Such a transfer would be considered a significant effect under 36 C.F.R. § 800.9(b) because it would lessen the protection offered to the historic property under the NHPA. Furthermore, it is possible that it would not be financially feasible to retain either of the hangars, whicb would result in irreversible significant impacts to the hangars. As discussed in Section 4.6, mitigation for potential impacts to the historical blimp hangers is the subject of a draft MOA that would explicitly address mitigation measures for each blimp hanger, as well as the eligible historic districts. There may not be mitigation measures short of preservation, to reduce impacts below a level of significance. Thus, even with the MOA, impacts could still be considered significant.

As discussed in Section 4.6, the only arcbaeological site within the Specific Plan is not considered significant, and no mitigation would be necessary. However, prior to the issuance of grading permits, the four-acre parcel currently outside the boundaries of MCAS Tustin along Harvard Avenue will be surveyed to determine the presence/absence of archaeological resources and appropriate mitigation, such as testing or data recovery and Native American consultation, will be performed. Retaining of certified arcbaeologists by development applicants to conduct data recovery excavations in the event resources are encountered during grading will also be required, along with application of a paleontological resources management plan in the event fossils are discovered.

The discussion below focuses on the potential effects of the Implementing Actions.

Adoption of the Specific Plan and the general plan/zoning ordinance/zoning map amendments by Tustin and Irvine would provide for preservation of one or both of the historic hangars for adaptive reuse if financially feasible, and testing for any cultural resources prior to development. However, these actions wonld have a potentially significant impact on existing historic and archaeological resources like those described for the LRA Reuse Alternative in Chapter 4.6. The Orange County MPAH Amendment would provide flexibility in the alignments of Tustin Ranch Road and Warner Avenue to avoid the southerly hangar if adaptive re-use is found to be financially feasible. The

LAMBRA designation would be consistent with a plan for reuse that accommodates both the preservation of historic and archaeological resources and business and industrial growth in areas affected by military base closures.

The cultural and paleontological impacts of the Implementing Actions would create no significant physical changes beyond those identified in Section 4.6 for the LRA Reuse Alternative.

Mitigation Measures

No further mitigation measures would be required for the Implementing Actions beyond those in Section 4.6 which are hereby incorporated by reference.

7.2.7 Biological Resources

Significance Criteria

An impact would be significant if it involved (1) adverse affect to any plant or animal species that is state listed or identified as a candidate or special status species by the CDFG would fall below self-sustaining levels, (2) degradation of sensitive natural resource communities as identified by CDFG and other local plans, (3) the movement of any native resident or migratory species or impeding the use of native wildlife nursery site, or (4) a substantial adverse effect on wetlands habitat as defined under the Clean Water Act. Impacts to CDFG special status species are not significant under federal law.

Impacts

As discussed in Section 4.7, the improvements to Peters Canyon Channel facilitated by the LRA Reuse Alternative would result in the indirect loss of jurisdictional waters. Other jurisdictional waters containing vegetated and seasonal wetlands would be directly impacted by proposed development. Direct and indirect impacts would be considered significant if not mitigated. Foraging habitat for the southwestern pond turtle would also be directly impacted. Wetland impact mitigation is identified, along with off-site relocation of the southwestern pond turtles captured on site. The discussion below focuses only on the effects of the Implementing Actions.

Adoption of the Specific Plan and the general plan/zoning ordinance/zoning map amendments by the cities of Tustin and Irvine would establish a process for civilian development in the areas where sensitive animals and wetland habitat are known to occur. These actions would lead to disturbance of wetlands and pond turtle habitat as development is approved and undertaken. However, the Implementing Actions would not result in any significant impacts beyond those identified in Section 4.7 for the LRA Reuse Alternative.

Mitigation Measures

The proposed Implementing Actions would not result in a significant biological resources impact beyond that identified in Section 4.7. No further mitigation measures would be required beyond those identified in Section 4.7, which are hereby incorporated by reference.

7.2.8 Agricultural Resources

Significance Criteria

Agricultural resources impacts would be considered significant if the Implementing Actions would result in: (1) the conversion of any Prime Farmland, Farmland of Statewide Importance (Farmland), or Unique Farmland to non-agricultural use.

Impacts

As discussed in Section 4.8, development of the LRA Reuse Alternative would result in a significant impact by converting 682 acres of Prime Farmland and 20 acres of Farmland of Statewide Importance to urban uses. Several potential mitigation measures to protect or replace Farmland off site are discussed, such as purchase of off-site Farmland, purchase and improvement of non-agricultural Farmland, and protection of existing Farmland. All were found to be infeasible, resulting in a significant, unmitigable impact.

The discussion below focuses only on the effects of the Implementing Actions.

The Implementing Actions themselves would convert Farmland, but would not cause any changes in the environment beyond those described in Section 4.8. The Specific Plan adoption, general plan/zoning ordinance/zoning map amendments, and Orange County MPAH amendment would allow the cities of Tustin and Irvine to control development of the site, and would result in eventual

conversion of Farmland to urban use. The LAMBRA designation and Redevelopment Project formation would stimulate business and industrial growth in accordance with the Specific Plan and utilize property tax increment to finance redevelopment programs, respectively, rather than creating physical change. Therefore, agricultural resources would not be impacted by these Implementing Actions beyond those impacts identified in Section 4.8 for the LRA Reuse Alternative.

Mitigation Measures

As identified in Section 4.8, no mitigation measures were determined to be feasible.

7.2.9 Soils and Geology

Significance Criteria

Soils and geology impacts would be considered significant if the Implementing Actions would expose people or structures to potential risk of loss, injury, or death beyond that which is currently accepted in southern California involving: (1) seismic hazards, including: (a) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other scientific evidence of a known fault; (b) strong seismic ground shaking; (c) seismic-related ground failure, including liquefaction; or (2) non-seismic hazards including: (a) landslides or mudflows; (b) soil erosion; (c) unstable geologic units; or (d) expansive soils.

Impacts

Impacts to soils and geology resulting from implementation of the LRA Reuse Alternative are described in Section 4.9. These include non-seismic hazards (such as local settlement, regional subsidence, expansive soils, slope instability, erosion, and mudflows) and seismic hazards (such as surface fault displacement, high-intensity ground shaking, ground failure and lurching, seismically induce settlement, and flooding associated with dam failure. Compliance with state and local regulations and standards, and established engineering procedures and techniques, would avoid significant impacts.

The discussion below focuses only on the effects of the Implementing Actions.

The Implementing Actions would potentially expose people or structures to potential risk of loss, injury, or death. However, the Specific Plan adoption, general plan/zoning ordinance/zoning map amendments, Orange County MPAH amendment, and Redevelopment Project would allow the cities of Tustin and Irvine to control development of the site and ensure that any soils and geology impacts would be fully addressed before development proceeds and the risk would not exceed that currently accepted in southern California. Compliance with state and local regulations and standards, and established engineering procedures and techniques, would avoid significant impacts.

The soils and geology impacts of the Implementing Actions would be less than significant.

Mitigation Measures

With no significant soils and geology impact, no mitigation would be required.

7.2.10 Water Resources

Significance Criteria

Water resources impacts would be considered significant if the Implementing Actions would (1) continually violate any water quality standards or continually violate waste discharge requirements and cause significant impairment of water quality or (2) deplete groundwater supplies or interfere with groundwater recharge beyond what is allowed by the OCWD.

Impacts

Impacts to water resources resulting from implementation of the LRA Reuse Alternative are described in Section 4.10.2. These include groundwater impacts associated with withdrawal and water quality impacts associated with increased urban runoff. Impacts attributable to groundwater withdrawal were less than significant, and compliance with federal, state and local regulations and requirements (particularly NPDES and TMDL requirements) would avoid significant water quality impacts.

The discussion below focuses only on the effects of the Implementing Actions.

The Implementing Actions would potentially violate water quality standards, deplete groundwater supplies, or interfere with groundwater recharge. However, the Implementing Actions would not

result in any impacts beyond those identified in Section 4.10.2 for the LRA Reuse Alternative. The Specific Plan adoption, general plan/zoning ordinance/zoning map amendments, Orange County MPAH amendment, and Redevelopment Project would allow the cities of Tustin and Irvine to control development of the site and ensure that any impacts to water resources would be addressed before development proceeds. Impacts attributable to groundwater withdrawal would be less than significant since IRWD would have an incentive not to pump water over average historical production levels because the water would cost IRWD the same amount as imported water. Impacts to water quality would be less than significant because both Tustin and Irvine would require compliance with federal, state, and local regulations (particularly NPDES and TMDL requirements), thus avoiding significant water quality impacts.

Mitigation Measures

With no significant water resources impact, no mitigation would be required.

7.2.11 Hazardous Wastes, Substances, and Materials

Significance Criteria

Hazardous wastes, substances, and materials impacts would be considered significant if the Implementing Actions would result in environmental effects during construction and subsequent operation. Construction activities would have significant impacts if:

- construction activities would cause a release of hazardous wastes/substances/materials, posing a threat to human health or the environment;
- construction activities would be inconsistent with CERCLA and NCP; or
- workers and/or the general public would be exposed to hazardous materials at concentrations above OSHA levels.

Operations would have significant impacts if:

- workers and/or the general public would be exposed to hazardous materials at concentrations above OSHA levels;
- the operations would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- the operations would create a significant hazard through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment;
- the operations would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; or
- soil and/or groundwater would be exposed to hazardous materials at concentrations above hazardous levels.

Impacts

Impacts associated with hazardous wastes, substances, and materials resulting from implementation of the LRA Reuse Alternative are described in Section 4.11. These include construction activities that may encounter new or unknown locations of contaminated soil or groundwater beyond sites identified in the RI/FS performed at MCAS Tustin; operational impacts associated with use of fertilizers, pesticides and other hazardous snbstances; and transportation of wastes from on-going remediation activities for off-site disposal. These activities are controlled through federal and state regulations, and no significant impacts would result.

The discussion below focuses only on the effects of the Implementing Actions.

The Implementing Actions would pe tentially create the construction- and operations-related impacts described in the significance criteria above. However, the Specific Plan adoption, general plan/zoning ordinance/zoning map amendments, and Orange County MPAH amendment would allow the cities of Tustin and Irvine to control development of the site and ensure that any hazardous wastes, substances, and materials issues would be resolved before development proceeds. The LAMBRA designation and Redevelopment Project formation would stimulate business and industrial growth in accordance with the Specific Plan and would utilize property tax increment to finance redevelopment programs, respectively, rather than creating physical change. Hazardous wastes, substances, and materials impacts resulting from these Implementing Actions would be less than significant because federal and state regulations limit such impacts.

Mitigation Measures

With no significant hazardous waste and materials impact, no mitigation would be required.

7.2.12 Traffic/Circulation

Significance Criteria

As defined by CEQA, vehicle traffic impacts would be significant if the implementing actions would result in any of the following conditions:

- Cause an increase in traffic which is substantial in relation to the traffic load anticipated without the proposed reuse and capacity of the planned street system, i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or the intersection capacity utilization.

- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

The quantitative determination of significant impacts was made by the application of the performance standards of Table 4.12-1.

Impacts to public transportation systems and bikeways would be significant if disposal or reuse of MCAS Tustin would degrade the operations of a system or would prevent planned improvements to a system.

Impacts

Impacts associated with Traffic/Circulation resulting from implementation of the LRA Reuse Alternative are described in Section 4.12. Mitigation included in Section 4.12 would reduce traffic effects at local roadways and intersections to acceptable levels of service.

The discussion below focuses only on the potential effects of the Implementing Actions.

Adoption of the Specific Plan, general plan/zoning ordinance/zoning map amendments, Orange County MPAH amendment, LAMBRA designation and Redevelopment Project formation would formalize an overall plan for providing and financing roadway improvements to support the Specific Plan. The circulation improvements, such as roadways, intersections, signals, public transit stops, and pedestrian/bicycle system improvements, would be provided according to a Phasing Plan (included in the Traffic Technical Report, Appendix F) to meet circulation needs as development

of the site proceeds. The Specific Plan would also manage forecasted vehicular trips via a Trip Budget and ensure that development could be accommodated within the planned roadway capacity of the on-site and off-site roadway systems. The Implementing Actions would not result in any traffic impacts beyond those identified in Section 4.12.2 for the LRA Reuse Alternative. However, a speculative future situation could occur where proposed development would not be supported by necessary roadway improvements concurrent with need, resulting in potentially significant circulation impacts.

The Specific Plan includes regulations for off-street parking. Together with the Tustin City Code sections that address off-street parking, the Specific Plan would address the need for off-street parking created by public and private development projects. Each project would be required to provide the necessary off-street parking spaces to support its uses. For that portion of the project that lies within the City of Irvine, the Irvine Parking Ordinance would govern required off-street parking. By applying regulations provided in the Specific Plan, off-street parking impacts associated with Specific Plan implementation would be avoided.

Long-term maintenance of circulation improvements would create periodic short-term construction impacts. These impacts would be considered less than significant because they would be regulated through the cooperative efforts of local government and service providers, and would be limited to specific areas where such maintenance work would not preclude continuance of public and private activities expected to occur in this urban setting.

Mitigation Measures

By applying regulations provided in the Specific Plan and the Phasing Plan (Final Appendix F), any potential traffic/circulation impacts associated with Specific Plan implementation would be avoided except for unmitigable impacts at two intersections (Jamboree Road/Barranca Parkway, and Tustin Ranch Road/Walnut Avenue). Implementation of the following components of the Phasing Plan for both on-site and off-site transportation improvements would ensure the availability of circulation improvements concurrent with need. Many of the tables and description of off-site improvements in this section have been relocated and updated as necessary in Section 4.12 and are shown as strike-out in this section. However, the intent of the implementing action would continue to be satisfied.

~~Table 7-3~~
~~Phasing Plan – On-site ADT Development Thresholds~~

~~Phase~~	~~ADT (Cumulative)~~		~~Roads Added[2]~~
~~I~~	~~27,000~~	~~(27,000)~~	~~Edinger Avenue[2]~~ ~~Landsdowne Road~~ ~~North Loop Road – Red Hill Avenue to West Connector Road (Build 3 lanes only)[2]~~ ~~West Connector Road~~
~~II~~	~~81,450~~	~~(108,450)~~	~~East Connector Road~~ ~~Marble Mountain Road~~ ~~Moffett Drive~~ ~~North Loop Road – Red Hill Avenue to West Connector Road (Final Buildout)~~ ~~North Loop Road – East Connector Road to Moffett Drive (Build 3 lanes only)[2]~~ ~~Red Hill Avenue/Carnegie Avenue Intersection (East Leg)~~ ~~Red Hill Avenue/Warner Avenue Intersection (East Leg)~~ ~~Severyns Road~~
~~III~~	~~26,550~~	~~(135,000)~~	~~Armstrong Avenue – North Loop Road to Barranca Parkway~~ ~~North Loop Road – West Connector Road to East Connector Road~~ ~~North Loop Road – East Connector to Moffett Drive (Final Buildout)~~ ~~North Loop Road – Moffett Drive to Warner Avenue~~ ~~South Loop Road – Warner Avenue to Tustin Ranch Road~~ ~~Tustin Ranch Road – Edinger Avenue to North Loop Road (6 lanes)~~ ~~Tustin Ranch Road – Warner Avenue to Barranca Parkway (Build 4 lanes only)[2]~~ ~~Warner Avenue – Red Hill Avenue to Jamboree Road (Build 4 lanes only)[2]~~
~~IV~~	~~39,000~~	~~(174,000)~~	~~South Loop Road – Armstrong Avenue to Tustin Ranch Road~~ ~~Tustin Ranch Road – North Loop Road to South Loop Road (Build 4 lanes only)[2]~~
~~V~~	~~41,100~~	~~(215,100)~~	~~Widen Tustin Ranch Road to 6 lanes (Final Buildout)~~ ~~Widen Warner Avenue to 6 lanes (Final Buildout)~~

~~[1] Roadways shall be constructed prior to the issuance of building permits or certificates of occupancy~~
~~[2] Full right-of-way to be dedicated at this time~~
~~Note: A portion of the reuse plan area has been reserved for the construction of Tustin Ranch Road/Edinger Avenue interchange, which is assumed by the time Phase II of the Specific Plan is implemented.~~

On-site Improvements

IA-1 Table 4.12-10 ~~7-3~~ presents the Phasing Plan for the on-site circulation system. The Phasing Plan is based upon traffic circulation impact and mitigation analyses contained in the Traffic Report (Final Appendix F). Under this Phasing Plan, the City of Tustin shall monitor all new development within the Specific Plan, accounting for the cumulative ADT generated by development projects. As each ADT threshold is reached, the roadway improvements listed in Table 4.12-10 ~~7-3~~ shall be constructed before any additional projects within the Specific Plan would be approved.

IA-2 Table 7-~~3~~4 presents the Trip Budget which summarizes the square footage of non-residential uses allocated to each neighborbood by Planning Area and the associated ADT. (Residential uses are shown for information only, they are not part of the budget.) Pursuant to Section 3.2.4 of the Specific Plan, the City of Tustin shall implement the trip budget by neighborhood to control the amount and intensity of non-residential uses. Trip Budget transfers between neighborhoods sball also be implemented as directed in subsection 3.2.4 of the Specific Plan.

Table 7-34
Planning Area Trip Budget

Planning Area No.	Assumed Land Use	Residential/Parks		Non Residential	
		Amount	ADTs	Amount	ADTs[2]
Neighborhood A					
1	General Commercial			27,120 sf	~~8,479~~ 3,033
	Learning Village			1,385,531 sf	~~3,033~~ 8,479
	PA 1 Trip Budget Subtotal				11,512
2	Community Park	24.1 ac	121		
3	Transitional Housing	192 du	941		
Neighborhood A Square Footage Total				***1,412,651 sf***	
Neighborhood A Trip Budget Total					***11,512***
Neighborhood B					
4	LDR (1-7 du/ac)	304 du	2,909		
5	MDR (8-15 du/ac)	621 du	4,968		
7	General Commercial			315,592 sf	14,273
	PA 7 Trip Budget Subtotal				14,273
Neighborhood B Square Footage Total				***315,592 sf***	
Neighborhood B Trip Budget Total					***14,273***
Neighborhood C					
6	Regional Park	84.5 ac	423		
	Non-Residential General Commercial			57,500 sf	3,920
Neighborhood C Square Footage Total				***57,500 sf***	
Neighborhood C Trip Budget Total					***3,920***
Neighborhood D					
8	MHDR (16-25 du/ac)	891 du	5,907		
	Office Park			1,815,380 sf	14,872
	Industrial Park			1,633,830 sf	13,384
	Shopping Center			181,540 sf	12,376
	PA 8 Trip Budget Subtotal				40,632
Neighborhood D Square Footage Total				***3,630,730 sf***	
Neighborhood D Trip Budget Total					***40,632***

Table 7-34. Continued

Planning Area No.	Assumed Land Use	Residential/Parks		Non Residential	
		Amount	ADTs	Amount	ADTs[2]
Neighborhood E					
9	General Commercial			110,990 sf	7,566
	Light Industrial			47,570 sf	386
	PA 9 Trip Budget Subtotal				7,952
10	Office Park			174,570 sf	2,317
	Light Industrial			157,110 sf	1,274
	General Commercial			17,460 sf	1,952
	PA 10 Trip Budget Subtotal				5,543
11	General Commercial			68,390 sf	4,662
	Office Park			615,505 sf	5,042
	Industrial Park			683,890 sf	5,602
	PA 11 Trip Budget Subtotal				15,306
12	General Commercial			12,810 sf	1,432
	General Office			115,280 sf	1,530
	PA 12 Trip Budget Subtotal				2,962
13	General Commercial			34,240 sf	3,829
	General Office			136,950 sf	1,817
	Light Industrial			513,575 sf	4,663
	PA 13 Trip Budget Subtotal				10,309
14	General Commercial			42,340 sf	4,734
	General Office			338,720 sf	3,387
	Light Industrial			465,750 sf	4,326
	PA 14 Trip Budget Subtotal				12,447
	Neighborhood E Square Footage Total			***3,535,130 sf***	
	Neighborhood E Trip Budget Total				***54,519***
Neighborhood F					
16	General Commercial			72,930 sf	4,972
	General Office			97,250 sf	1,291
	Light Industrial			315,950 sf	3,211
	PA 16 Trip Budget Subtotal				9,474
17	Light Industrial			284,010 sf	2,959
	PA 17 Trip Budget Subtotal				2,959
18	Military			40,850 sf	542
	PA 18 Trip Budget Subtotal				542
19	Shopping Center			672,570 sf	23,217
	PA 19 Trip Budget Subtotal				23,217
	Neighborhood F Square Footage Total			***1,483,560 sf***	
	Neighborhood F Trip Budget Total				***36,192***

Table 7-~~3~~4. Continued

Planning Area No.	Assumed Land Use	Residential/Parks		Non Residential	
		Amount	ADTs	Amount	ADTs[a]
Neighborhood G					
15	LDR (1-7 du/ac)	272 du	2,603		
	MDR (8-15 du/ac)	~~5662~~ du	5,296		
	General Commercial			62,730 sf	4,276
	Hotel			500 rm	4,115
	Golf Course			159.3 ac	1,274
	PA 15 Trip Budget Subtotal				9,665
20	MHDR (16-25 du/ac)	588 du	3,898		
	General Commercial (by CUP)			23,000 sf	2,572
	PA 20 Trip Budget Subtotal				2,572
21	LDR (1-7 du/ac) - Tustin	711	~~5,688~~ 6,804		
	LDR (1-7 du/ac) - Irvine	150	~~1,200~~ 1,436		
	PA 21 Trip Budget Subtotal				
Neighborhood G Square Footage Total				***85,730 sf***	
Neighborhood G Trip Budget Total					***12,237***
Neighborhood H					
22	MDR (8-15 du/ac)	402	3,216		
Neighborhood H and PA 22 Trip Budget Total					***0***

rm - hotel rooms

Source: ADTs for land use types derived from *MCAS Tustin Specific Plan/Reuse Plan Traffic Study* (Austin-Foust Associates, Inc. 1999) in Appendix F, bound separately.

IA-3 Prior to the approval of (1) a Planning Area Concept Plan pursuant to Section 4.2 of the Specific Plan, (2) a site development permit, or (3) a vesting tentative map for new square footage (not for financing or conveyance purposes), a project developer shall provide traffic information consistent with the provisions of the Specific Plan, this EIS/EIR and the requirements of the City of Tustin Traffic Engineer. The traffic information shall (a) identify and assign traffic circulation mitigation measures required in the EIS/EIR pursuant to the Phasing Plan described in Table 4.12-10 ~~7-3~~; (b) evaluate the effects of either the delay of any previously committed circulation improvements or the construction of currently unanticipated circulation improvements; and (c) utilize the circulation system and capacity assumptions within the EIS/EIR and any additional circulation improvements completed by affected jurisdictions for the applicable timeframe of analysis.

IA-4 Prior to the issuance of building permits for new development within planning areas requiring a concept plan, a project developer shall enter into an agreement with the City of Tustin to (a) design and construct roadway improvements consistent with the ADT generation Phasing Plan

described in Table 4.12-10~~7-3~~ and (b) address the impact of and specify the responsibility for any previously committed circulation improvements assumed in the EIS/EIR which have not been constructed.

IA-5 If a subsequent traffic Phasing Plan demonstrates that certain circulation improvements should be included in a different phase of Specific Plan development (accelerated or delayed) or that a circulation improvement can be substituted, the mitigation Phasing Plan in Table 4.12-10~~7-3~~ may be amended, subject to approval of the City of Tustin and any other affected jurisdictions, provided that the same level of traffic mitigation and traffic capacity would be provided.

Off-site Improvements

The off-site mitigation measures in Section 4.12 have been supplemented with ADT thresholds and fair share allocations which supersede these implementing actions. Therefore they are shown as strike-out, but are replaced by the requirements of mitigation measures T/C-2 and T/C-3 and Tables 4.12-7, 4.12-8, and 4.12-9.

~~The following three off-site traffic mitigation measures shall be implemented for the short-range (2005) level of development (108,450 ADT) in the MCAS Tustin Specific Plan.~~

~~IA-6 Grand Avenue and Edinger Avenue - The City of Tustin shall contribute its fair share costs to the City of Santa Ana for construction of one northbound right-turn lane and an additional northbound left-turn lane on Grand Avenue. The threshold for implementing this improvement would be 32,000 ADT generated by internal Specific Plan development. The City of Tustin shall ensure that its fair share obligation to intersection improvements in the City of Santa Ana is satisfied by entering into an improvement program agreement described below.~~

~~IA-7 Jamboree Road and Barranca Parkway - The City of Tustin shall provide access from Warner Avenue near Jamboree Road to serve the proposed uses to be located at the northeast corner of Von Karman Avenue and Barranca Parkway. The threshold for implementing this improvement would be when 91,000 ADT are generated by internal Specific Plan development.~~

IA-8 Von Karman Avenue and Barranca Parkway - The City of Tustin shall construct an additional eastbound through lane on Barranca Parkway when 101,000 ADT have been generated by internal development.

These three off-site improvements shall be constructed when needed, depending upon the timing of proposed development within the Specific Plan area. As later phases of development occur within the Specific Plan area between 2006 and 2020, additional off-site improvements shall be required at 19 intersections, as shown in Table 7-5. The table indicates the fair-share contribution of the City of Tustin for these off-site improvements. The specific timing and phasing of these later improvements shall be determined by the City of Tustin, in cooperation with Caltrans and the cities of Santa Ana and Irvine, as appropriate, to ensure the continued availability of transportation improvements at the time of need.

Table 7-5
Specific Plan 2020 – Off-site Intersection Mitigation Summary

	Location	Share (%)
Tustin		
15.	Newport & Edinger[1]	100
30.	Red Hill & Edinger[1]	100
42.	Tustin Ranch & Walnut	100
Tustin/Santa Ana		
77.	Red Hill & Warner[1]	100
Tustin/Irvine		
103.	Jamboree & Barranca[1,2]	N/A
Santa Ana		
48.	Main & Dyer	29
53.	Hutton Centre & MacArthur	40
59.	Hotel Terrace/SR-55 & Dyer[1]	100
61.	Grand & Edinger[1]	77
63.	Grand & Warner[1]	100
66.	Grand & Dyer[1]	71
70.	Lyon & Edinger[1]	56
198.	Bristol & Warner	100
202.	Standard & Edinger	38
Irvine		
81.	Red Hill & Main[2]	100
89.	Von Karman & Michelson[2]	50
106.	Jamboree & Alton[2]	100
118.	Harvard & Alton	100
128.	Culver & Warner	100

[1] – TSIA intersection
[2] – IBC intersection
N/A – Not applicable, no identifiable mitigation measures

General Circulation Improvements

IA-69 The City of Tustin will enter into agreements with Caltrans and the cities of Santa Ana and Irvine to ensure that the off-site roadway improvements needed to mitigate the effects of the Specific Plan are constructed pursuant to improvement programs established by the respective jurisdiction.

In order to properly coordinate the timing and funding of fair share obligation of Specific Plan improvements in the adjacent jurisdictions, the City of Tustin shall hold a scoping-like meeting with the respective jurisdictions. The purpose of said scoping-like meeting shall be to identify the concerns of the respective jurisdictions prior to the initiation of the fair share study. The purpose of the study would be to fully identify, with each jurisdiction, the scope and costs of feasible improvements (as determined by the respective jurisdiction). The improvements would be acceptable to each jurisdiction toward fulfilling the timing and cost of the transportation improvement obligations of the Specific Plan as required to mitigate transportation impacts in each jurisdiction, as listed above. The funding for the improvements to be incorporated into the agreement would be utilized by the respective agency to improve the capacity of the impacted intersections/links or be used for substituted improvements, as determined by mutual agreement.

Prior to execution of the agreement, each jurisdiction would be allowed ten working days to review the technical report prior to being provided with a copy of the proposed agreement. Each jurisdiction would then have ten working days to review and comment as to its concurrence with the improvement programs contained in the agreement. The comments of each jurisdiction would be considered to ensure that the City of Tustin's responsibility for fair share funding of the improvements in each jurisdiction as stated above is fully addressed.

IA-710 Each Specific Plan project would contain, to the satisfaction of the City of Tustin and/or City of Irvine, as applicable, a pedestrian circulation component showing pedestrian access to regional hiking trails, parks, schools, shopping areas, bus stops, and/or other public facilities.

Summary of Traffic Mitigation

In order to fully mitigate potential traffic impacts, the Specific Plan will be amended to include the updated Phasing Plan for on-site and off-site circulation improvements, and the updated Phasing Plan will be made a condition of approval of the Specific Plan and other Implementing Actions. Additionally, the Trip Budget provided in this section shall be implemented pursuant to Section 3.2.4 of the Specific Plan. This would eliminate the potential future speculative situation where adequate roadway improvements would not be provided. No further measures would be required to avoid or mitigate potential circulation system impacts acknowledging there would be significant, unmitigable impacts at two intersections in 2020.

7.2.13 Air Quality

Significance Criteria

Air quality impacts would be considered significant if emission from air pollutants resulting from the Implementing Actions would violate any ambient air quality standard, contribute to an existing or projected air quality violation, or expose sensitive receptors to pollutant concentrations. Similar wording is found in the Clean Air Act definition of conformity.

Under CEQA, air quality impacts would be considered significant if the disposal or subsequent reuse of MCAS Tustin would be inconsistent with the assumptions or objectives of the 1997 AQMP, the most recently adopted AQMP by the State of California.

One method of quantitative determination for new projects is the comparison with emissions standards set by the local air quality management district. SCAQMD (1993) has established the thresholds as guidance when evaluating when a proposed action should be considered significant. A proposed action would not be considered significant if the forecast emissions from the proposed action have been anticipated in regional and state air quality planning and are included in the applicable AQMP and SIP.

Impacts

Impacts to air quality resulting from implementation of the LRA Reuse Alternative are described in Section 4.13. These include construction-related impacts associated with clearing and grading of the site and construction of buildings and infrastructure, and operational impacts attributable to air

emissions from vehicular travel and generation of air contaminants by specific business uses. Mitigation for construction and operational impacts have been identified, but an unmitigable air quality impact would remain.

The discussion below focuses on the effects of the Implementing Actions.

The Implementing Actions would result in emissions of air pollutants exceeding SCAQMD significance criteria. However, the Specific Plan adoption, general plan/zoning ordinance/zoning map amendments, and Orange County MPAH amendment would not create air quality impacts beyond those identified in Chapter 4.13.

Mitigation Measures

The proposed Implementing Actions would not result in a significant air quality impact beyond that identified in Section 4.13. No further mitigation measures would be required beyond those identified in Section 4.13, which are hereby incorporated by reference.

7.2.14 Noise

Significance Criteria

Noise impacts would be considered significant if noise levels experienced by sensitive receptors would exceed those considered "normally acceptable" for the applicable land use categories in the Noise Elements of the general plans for the cities of Tustin, Irvine, and Santa Ana. Residences, schools, libraries, hospitals, and recreational areas are generally considered sensitive noise receptors. Existing on-site residential developments are considered sensitive noise receptors. New development within the reuse area would include sensitive noise receptors, such as residences and schools. The area surrounding the site contains numerous sensitive receptors in the cities of Irvine, Tustin, Santa Ana, and the County of Orange. In the case where existing noise levels already exceed normally acceptable levels for any given land use category, then an increase of 3 dB CNEL or greater noise levels experienced by a sensitive receptor would be considered a significant impact (City of San Diego 1994).

Impacts

Section 4.14 concludes that civilian reuse under the LRA Reuse Alternative would have impacts to existing military family housing because future noise levels would exceed 65 dB CNEL. Existing noise levels would be increased by more than 3 dBA along four off-site roadway segments. Prior to reuse, appropriate noise attenuation measures would be implemented.

The discussion below focuses on the effects of the Implementing Actions.

The Implementing Actions would expose persons to noise levels in excess of local noise/land use compatibility standards and would increase baseline noise levels by more than 3 dBA CNEL at locations where baseline noise currently exceeds local standards. However, adoption of the Specific Plan, general plan/zoning ordinance/zoning map amendments, Orange County MPAH amendment, LAMBRA designation and Redevelopment Project formation would formalize an overall plan for providing and financing improvements, including noise mitigation for impacted areas, to support development of Specific Plan land uses. These Implementing Actions would not create any significant noise impact beyond that identified in Section 4.14.

Mitigation Measures

The proposed Implementing Actions would not result in a significant noise impact beyond that identified in Section 4.14. No further mitigation measures would be required beyond those identified in Section 4.14, which are hereby incorporated by reference.

7.3 CUMULATIVE IMPACTS

A complete analysis of cumulative impacts associated with implementing the LRA Reuse Alternative is provided in Chapter 5. This analysis identifies significant cumulative impacts for cultural resources (elimination of most of the two discontiguous historic districts and the possible elimination of both blimp hangars), agricultural resources, traffic/circulation, and air quality.

Adoption of the Specific Plan, amendments to Tustin and Irvine General Plans, zoning ordinances, and zoning maps, amendment of the Orange County MPAH, LAMBRA designation, and Redevelopment Project formation would provide the City of Tustin, Tustin Community Redevelopment Agency, and the City of Irvine, as applicable, with control over various characteristics of the LRA Alternative, such as land use designations, zoning categories, recreation

and open space areas, major arterial roadways, urban design, public facilities, and infrastructure systems. Of these Implementing Actions, only the adoption of the Specific Plan, amendments to the Tustin and Irvine general plans, zoning ordinances, and zoning maps, and Orange County MPAH amendment would create any pbysical changes. The LAMBRA designation and Redevelopment Project formation would stimulate business and industrial growth in accordance with the Specific Plan and utilize property tax increment to finance redevelopment programs, respectively. However, this growth would be no greater than the LRA Reuse Alternative evaluated in Chapter 5.

Although adoption of the Specific Plan, amendments to Tustin and Irvine general plans, zoning ordinances and zoning maps, and amendment of the Orange County MPAH would cause physical changes in combination with other future development projects in Orange County, these changes would be the same as, and would not increase those impacts already resulting from, the implementation of the LRA Reuse Alternative as described in Chapter 5, which is hereby incorporated by reference.

7.4 OTHER CEQA SECTIONS

A complete analysis of four other considerations required by CEQA and associated with implementing the LRA Reuse Alternative (Alternative 1) is provided in Chapter 6. This analysis discusses significant unavoidable adverse impacts, irreversible/irretrievable commitments of resources, growth-inducing impacts, and effects found not to be significant.

Although Implementing Actions of the LRA Reuse Alternative (Alternative 1), such as adoption of the Specific Plan, amendments to Tustin and Irvine general plans, zoning ordinances, and zoning maps, and amendment of the Orange County MPAH, would cause physical cbanges, these cbanges would be the same as, and would not increase those impacts resulting from, the implementation of the LRA Reuse Alternative already described under these four other considerations in Chapter 6, which are hereby incorporated by reference.

CHAPTER 8.0
CONSULTATION AND COORDINATION

8.1 Agency Coordination 8-1
8.2 Public Coordination 8-5

CHAPTER 8.0
CONSULTATION AND COORDINATION

8.1 AGENCY COORDINATION

Federal, state, and local agencies were consulted prior to and during the preparation of this revised EIS/EIR. Agencies were notified of plans for closure and disposal activities by mail; by scheduled public meetings associated with the reuse planning process; by publication of an NOI/NOP announcing preparation of a Draft EIS/EIR, as required by NEPA and CEQA; by publication of a second NOP related to the LAMBRA application; and by a public scoping meeting. The agencies' viewpoints were solicited with regard to activities and issues within their jurisdiction. The agencies contacted by mail are listed below.

8.1.1 Federal Agencies

Department of Defense
- Armed Forces Reserve Center
- Army Corps of Engineers, Los Angeles District Office
- Army Corps of Engineers, Office of the Chief of Engineers
- Department of the Air Force
- Eleventh Coast Guard District
- Office of Economic Adjustment

Department of Energy

Department of the Interior
- U.S. Fish and Wildlife Service

Department of Transportation
- Federal Aviation Administration, Airspace & Procedures Branch
- Federal Aviation Administration, Western Pacific Region
- Federal Highway Administration, California Division
- Federal Highway Administration, Region 9

U.S. Environmental Protection Agency

8.1.2 State Agencies

Air Resources Board
California Environmental Protection Agency
    Region 4
    Toxic Substance Control Division
California Highway Patrol
California Energy Commission
Native American Heritage Commission
Office of Local Assistance, Real Estate Division
Public Utilities Commission
Public Works Board
Reclamation Board
San Diego Regional Water Quality Control Board
Santa Ana Regional Water Quality Control Board
State Clearinghouse
State Department of Boating and Waterways
State Department of Conservation
State Department of Conservation, Division of Mines and Geology
State Department of Fish and Game
State Department of Forestry and Fire Protection
State Department of General Services
State Department of Health Services
State Department of Housing and Community Development
State Department of Parks and Recreation
State Department of Parks and Recreation, Orange County Area
State Department of Transportation
    Division of Aeronautics
    Caltrans - Planning
    Caltrans - District 7
    Caltrans - District 12
State Department of Water Resources
State Lands Commission
State Office of Emergency Services
State Office of Historic Preservation
State Office of Planning and Research

Solid Waste Management Board
Water Resources Control Board

8.1.3 Regional Agencies

Metropolitan Water District of Southern California
South Coast Air Quality Management District
Southern California Association of Governments

8.1.4 Orange County

Agricultural Commissioner
Airport Land Use Commission
Board of Education
Board of Supervisors
Clerk
Department of Education, Facilities and Planning
Emergency Management Agency
Fire Authority
Flood Control District
Hazardous Material Program
Health Care Agency, Hazardous Materials Section
Health Department
Homeless Issue Task Force
John Wayne Airport
Local Agency Formation Commission
Public Library Administration Office
Public Library, Tustin Branch
Sanitation District No. 7
Transportation Authority
Transportation Corridor Agency
Water District
Vector Control

8.1.5 Local Jurisdictions

City of Costa Mesa
City of Irvine
City of Orange
City of Santa Ana

8.1.6 Public Service Agencies

Irvine Ranch Water District
Irvine Unified School District
Irvine Valley College
Rancho Santiago College
South Orange County Community College
Santa Ana Unified School District
Tustin Unified School District
University of California, Irvine

8.1.7 Private Service Agencies

Cox Cable
Pacific Bell
Pacific Telephone Company
Southern California Edison Company
Southern California Gas Company

8.1.8 Other

Honorable Robert Dornan, U.S. Congressman
Honorable Christopher Cox, U.S. Congressman
North Irvine Village Association

8.2 PUBLIC COORDINATION

Extensive public coordination has occurred, and will continue to occur, as part of this proposed action. Public involvement opportunities to date include the reuse planning process; the EIS/EIR notification process, including the NOI, two NOPs, and one scoping meeting; a public hearing on the initial Draft EIS/EIR; and the opportunity (under NEPA) to comment on the Final EIS/EIR. Sections 8.2.1 through 8.2.4 provide more information on the outreach activities and responses associated with the reuse planning process, NOI/NOP process, public scoping meeting, and the public hearing on the initial Draft EIS/EIR, respectively. Additionally, ~~there will be~~ a ~~second~~ public hearing was held on the revised Draft EIS/EIR.

8.2.1 Reuse Planning Process

The process to convert MCAS Tustin to civilian use involved an extensive reuse planning and community outreach process. The City of Tustin, acting as the LRA, prepared the reuse plan for MCAS Tustin. During the reuse planning process, efforts were made to encourage and incorporate public participation and communication into the reuse planning process. Community outreach and involvement were critical components in the reuse plan development. This process provided several opportunities to inform agencies and the public of the availability of Air Station assets and to identify potential commercial interests in surplus military property.

A major portion of the outreach process involved conducting community worksbops to define issues and to discuss reuse opportunities. In addition to the community workshops, all meetings of the Base Closure Task Force were advertised in the local papers and were open to the public. A community survey of approximately 30,000 businesses and households was also conducted to solicit comments on key issues and land use preferences.

Based on the community outreacb program and public interest, the LRA Reuse Plan was prepared. The outreach program included a public review and comment period on the Reuse Plan. Section 2.2 of this EIS/EIR summarizes the alternatives development and screening process leading to the final selection of a reuse plan.

8.2.2 Notice of Intent/Notice of Preparation to Prepare the Draft EIS/EIR

In conformance with the requirements of NEPA, an NOI to prepare a Draft EIS/EIR for the Disposal and Reuse of MCAS Tustin was published by the DON in the *Federal Register* and distributed to

potentially interested parties, including regulatory agencies, local jurisdictions, service providers, and others. Likewise, in conformance with the requirements of CEQA, an NOP to prepare a Draft EIS/EIR for the Disposal and Reuse of MCAS Tustin was distributed by the City of Tustin to similar groups. The NOI and NOP mailing lists are included in Appendix C. A supplemental NOP was distributed on March 9, 1995 to all previously notified parties to inform them of the City of Tustin's intent to also utilize the joint EIS/EIR for its application to pursue a Local Agency Military Base Recovery Area (LAMBRA) with the California Trade and Commerce Agency. A copy of the supplemental NOP is also included in Appendix C.

8.2.3 Public Scoping Meeting

An additional effort to inform the public and solicit input on the scope of the EIS/EIR from affected jurisdictions, interested members of the public, and organized groups was afforded through a public scoping meeting. The MCAS Tustin public scoping meeting was held on July 20, 1994 at the Clifton Miller Community Center in the Tustin Civic Center. Presentations were given by representatives of the Marine Corps, the City of Tustin, and consultants. An opportunity for oral comments followed. Only two oral comments were received, both focusing on the homeless assistance provider interests. No written comments were received at the meeting. Twenty-six written comments on the NOI/NOP were received via mail.

A complete transcript of the public scoping meeting is available from:

Dana Ogdon, Senior Project Manager
City of Tustin
300 Centennial Way
Tustin, CA 92680
(714) 573-3113

The environmental issues raised in the 26 written comments were considered during the course of the impact assessment process, and are briefly summarized below. A more detailed table is provided in Appendix C summarizing each comment letter and identifying where the issue is addressed in the EIS/EIR.

Land Use

There were questions concerning the compatibility of the proposed land uses with existing land use plans, and also the scale of proposed residential development with existing neighboring residential areas. A commentor wanted to know what the land uses would be in the interim period. Also, there was a question as to the potential impacts to the Peters Canyon Regional Riding and Hiking Trail and possible integration into the proposed circulation plan.

Socioeconomics

Issues were raised on the potential impacts on affordable housing supply in Santa Ana, and the impacts on jobs and housing policies in the SCAG Regional Comprehensive Plan. There was also a question on what the role of transitional bousing would be before permanent residential areas are established.

Utilities

Comments were received concerning solid waste generation, sewage generation, the ability to provide gas and electric service, the ability to provide cable service, and the funding for new utility infrastructure.

Public Services and Facilities

There were comments on the funding for new schools and on potential impacts on school districts (Tustin Unified School District, Santa Ana Unified School District, and Irvine Unified School District). There was also a comment on impacts on the Orange County Public Library.

Historic and Archaeological Resources

A request was made that an effort be undertaken to retain the historic blimp hangars.

Soils and Geology

Concern was expressed for liquefaction potential.

Water Resources

There were several issues raised concerning water hazards and water quality including impacts to existing storm drain channels, the existing condition of receiving waters, potential short-term and long-term impacts to surface water quality, and drainage issues related to Peters Canyon Wasb and the proposed golf course.

Hazardous Wastes, Substances, and Materials

Concern was raised about hazardous waste cleanup, the transport of hazardous materials, and proposed land uses involving bazardous materials.

Traffic/Circulation

There were numerous concerns expressed in relation to transportation and circulation. Comments addressed potential impacts to local roadways, freeways, and interchanges and the ability to mitigate these impacts; "fair share" contributions to roadway improvements; TDM measures; and alternative forms of transportation (bicycle, pedestrian, and mass transit).

Air Quality

A commentor asked that the air quality analysis be done in accordance with California Air Resources Board and SCAQMD requirements.

Noise

There was concern about the potential for increased noise in Santa Ana due to increased traffic.

8.2.4 Public Meeting on the Initial Draft EIS/EIR

The initial Draft EIS/EIR was prepared with consideration of the scoping and NOI/NOP comments. When completed, the initial Draft EIS/EIR was made available for public review in January 1998. Affected agencies, organizations, and persons wbo may have had an interest in the disposal of MCAS Tustin and the Reuse Plan were provided with copies of the document for review and comment. The Notice of Availability for the initial Draft EIS/EIR was published in the *Federal Register* on January 16, 1998. A 45-day public review period was provided for review of the draft document.

A total of 33 written comments were received on the initial Draft EIS/EIR. The comments came from public agencies, private organizations, and interested individuals and covered a range of issues. The comments, which covered both the adequacy of the EIS/EIR and general development issues regarding the MCAS Tustin Reuse Plan/Specific Plan, are briefly summarized below. As discussed in the Preface of this EIS/EIR, CEQA states that when an entire EIR is re-circulated, the lead agency need not respond to those comments received during the earlier circulation period. Instead, a summary of the revisions made to the previously circulated Draft EIR must be attached to the revised EIR (Cal. Code Regs., Title. 14, § 15088.5 (2)(g)). This summary is included in Appendix D. However, the general types of comments received in the initial draft, by issue area, are listed below.

Land Use

- The description of adjacent land uses and land use designations is not accurate.
- There should be more discussion of the transitional/emergency housing facility.
- The blimp hangar is critical to the success of the regional park, and the hangar would influence the quality of development.
- The uncertainty of the community core development is a concern.
- There are inconsistencies between the text and the graphics.
- Specific land uses were suggested including hotel, theme park, and medium-density residential uses.
- Removal of the Browning Corridor easement should be discussed in the cumulative section.

Socioeconomics

- There would be school overcrowding in Santa Ana as a result of labor force relocation.
- The future of the on-site child care facility and church were questioned.
- Need to address impacts on property values.

Utilities

- "Standard" conservation measures should be incorporated.
- It should be assumed that all existing facilities would be replaced.
- Wastewater reclamation helps to maintain lower water and sewer rates.
- Upgrading the right-of-way drainage facilities should be the responsibility of the developer.
- Update information on solid waste collection and disposal.
- Peters Canyon Channel should be improved in conjunction with development.

- The existing capacity of the utilities should be provided.

Public Services aod Facilities

- There would be an increased need for fire protection.
- Additional sewage facilities would be needed.
- Correct information on bikeways and trails.
- The Santa Ana Unified School District would be impacted.

Aesthetics

- Appropriate landscaping should be planted next to the wall along the northeastern boundary.

Historic aod Archaeological Resources

- The executive summary should state that the historic property consists of two discontinuous historic districts eligible for inclusion in tbe National Register of Historic Places.
- It should be stated that the undertaking would irreversibly eliminate most of the two historic districts and the blimp hangars.
- The needs of the original people of the land should be considered.
- A Native American representative should monitor construction activities.

Biological Resources

- There is concern about jurisdictional wetlands.
- An update on the sensitive biological resource survey on turtles and burrowing owls was requested. The text should be revised to be less subjective.
- Documentation should be cited to support conclusions about pond turtles and falcons.

Agricultural Resources

- It was requested that a current agricultural lease be allowed to continue to be farmed and phased out as the land is developed.
- Additional information is necessary to describe the extent and significance of agricultural land.
- Location of on-site agricultural land should be detailed in the text and on the appropriate figures.
- The conversion of prime agricultural land should not be considered significant.

Soils and Geology

- Define technical terms and add more explanation about erosion and mineral resources.
- Expand the discussion of earthquake faults.

Water Resources

- Concern was expressed about the use of fertilizers and pesticides on the golf course.
- The runoff receiving waters are "impaired" and in need of improvements.
- A water quality impact mitigation program must meet Regional Water Quality Control Board standards.
- The 16 abandoned wells must be destroyed prior to development.
- Explain technical terms.
- Include a map showing the location of the VOC plume.
- Support conclusions about shallow water aquifer water quality.

Hazardous Wastes, Substances, and Materials

- A more complete discussion of the IRP is needed.

Traffic/Circulation

- Technical terms should be explained at the beginning of the section.
- There needs to be a thorough explanation of the baseline.
- TSM/TDM should be included, as should alternative modes of transportation.
- Sensitivity analyses are needed.
- Cumulative projects assumed for the traffic model should be indicated.
- The study area should be expanded and additional road segments and interchanges should be analyzed.
- It should not be assumed that proposed projects in the area would be built at their original proposed density, nor that non-funded roadway and intersection improvements would be built.
- The study is based on outdated information.
- Development should be tied to required circulation improvements.
- Fair-share funding for all assumed improvements that are not fully committed and funded.
- There should be more discussion of railway issues, including the future Tustin Commuter Rail Station.

Air Quality

- A more detailed evaluation of construction emissions is necessary.
- TDM techniques should be considered for mitigation.
- All toxic air contaminants associated with development should be identified and quantified.
- Eliminate mitigation measures that cannot be enforced or regulated.
- Include discussion of background NO_2 and SO_2 concentrations, the relationship to the regional HOV network, and the demolition of asbestos-containing buildings.
- The potential for new CO "hot spots," operations-related emissions, and the effects of existing toxic emissions upon sensitive receptors should be evaluated.

Noise

- City of Irvine and County of Orange truck mix and day, evening, and night split assumptions should be used.
- The noise study area should be expanded to include Warner Avenue east of Harvard Avenue.
- There was a question concerning bow noise "spill over" into existing surrounding areas would be mitigated.
- Concern was registered about additional noise from trucks entering the site from Tustin Ranch Road.

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CHAPTER 10.0
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10.1 References 10-1
10.2 Persons Contacted 10-14

CHAPTER 10.0
REFERENCES AND PERSONS CONTACTED

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CHAPTER 11.0
EIS/EIR DISTRIBUTION AND NOTIFICATION LIST

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EIS/EIR DISTRIBUTION AND NOTIFICATION LIST

A copy of the Draft EIS/EIR has been distributed to the following:

Federal Agencies

Advisory Council on Historic Preservation
U.S. Army Corps of Engineers, LA District, Environmental Resources Branch
U.S. Department of Education
U.S. Department of Justice, Office of Justice Programs
U.S. Department of Health and Human Services
U.S. Department of Housing and Urban Development
U.S. Environmental Protection Agency, Region 9

Department of Defense

Naval Facilities Engineering Command, Alexandria, VA.
Naval Facilities Engineering Command, SOUTHWESTDIV
Base Realignment and Closure Office, MCAS Tustin
Office of Economic Adjustment

Department of the Interior

Fish and Wildlife Service
National Park Service
Office of Environmental Affairs
Office of Environmental Policy and Compliance

Department of Transportation

Federal Highway Administration
Environmental Division

State Agencies

California Air Resources Board
California Department of Education
California Department of Fish and Game, Region 5
California Department of Health Services
California Department of Toxic Substance Control
California Department of Parks and Recreation
California Department of Transportation, District 12
California Department of Water Resources
California State Lands Commission
Governor's Office of Planning and Research
State of California, Clearinghouse
State Office of Historic Preservation

Politicians

Honorable Dianne Feinstein
Honorable Barbara Boxer
Honorable Lorretta Sanchez
Honorable Christopher Cox

Regional Agencies/Special Purpose Agencies

South Coast Air Quality Management District
Southern California Association of Governments
Transportation Corridor Agency
Regional Water Quality Control Board

County Agencies

Orange County Board of Supervisors
Orange County Flood Control District
Orange County Sanitation District
Orange County Transportation Authority

Orange County Environmental Management Agency
Orange County Chief Executive Officer of Strategic Affairs

Other Special Interest

California Preservation Foundation
Heritage Orange County, Inc.
Irvine Historical Society
National Trust for Historic Preservation
Orange County Historical Society

Libraries

Orange County Public Library, Administrative Office
Orange County Public Library, Irvine Heritage Park
Orange County Public Library, Tustin Branch
University of California, Irvine, Main Library

Local Jurisdictions

City of Tustin
City Departments
City Manager's Office
Planning Commission
Mayor and City Council

City of Irvine
City Manager's Office

City of Santa Ana
Community Development

Utilities/Public Services

Utilities
Irvine Ranch Water District
Southern California Edison Company
Southern California Gas Company

Public Services
Irvine Unified School District
Santa Ana Unified School District
South Orange County Community College District
Tustin Unified School District

A notification letter has been sent to numerous governmental agencies and individuals stating that the revised Draft EIS/EIR is available at public libraries in Tustin and Irvine.

APPENDICES

APPENDIX A
GLOSSARY/INDEX

GLOSSARY

GLOSSARY

A-weighted decibel (dB(A))	A number representing the sound level that is frequency-weighted according to a prescribed frequency response establisbed by the American National Standards Institute and that accounts for the response of the human ear.
agriculture	The science or practice of cultivating the soil and producing crops, and in varying degrees the preparation and marketing of the resulting products.
air pollutant emissions	The amount of one or more specific compound(s) introduced into the atmosphere hy a source or group of sources. In practice, most pollutant emission data are presented as emission rates, or the amount of pollutants emitted during a specified increment of time or during a specified increment of emission source activity.
alluvium	Clay, silt, sand, gravel, or similar material deposited by running water.
ambient air quality	The atmospberic concentration of a specific compound (amount of pollutants in a specified volume of air) at a particular location, determined by the way wind patterns, precipitation patterns, and cbemical reactions affect pollutants in the atmosphere.
ambient air quality standards	Standards establisbed on a state or federal level that define the limits for airborne concentrations of designated criteria pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, lead) to protect public health with an adequate margin of safety (primary standards) and public welfare, including plant and animal life, visibility, and materials (secondary standards).
asbestos	A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.

attainment area	An area that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act or that meets state air quality standards.
average daily traffic (ADT)	The number of one-way vehicle trips occurring at a specific roadway intersection or segment during a one-day period.
baseline	The physical and operational condition of MCAS Tustin upon which future conditions are compared. For NEPA purposes, the baseline year is 1993, the year the Air Station was designated for disposal. Under CEQA, the baseline year is 1994, the year the NOP was issued.
Best Management Practice (BMP)	Includes schedule of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
California Environmental Quality Act (CEQA)	The California equivalent of NEPA. It requires an environmental review of actions deemed to have significant environmental impacts and that require state or local government approval or that are publically funded projects.
capacity (transportation)	The maximum rate of flow at which vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified period under prevailing roadway, traffic, and control conditions.
caretaker	The DON process of maintaining a closed facility.
census tract	A specific geographical area which has a periodic governmental enumeration of the population.
Clean Air Act (CAA)	Legislates that air quality standards set by federal, state, and county regulatory agencies establish maximum allowable emission rates and pollutant concentrations for sources of air pollution on federal and private property. Also regulated under this law is proper removal and safe disposal of asbestos from buildings other than schools.

Community Noise Equivalent Level (CNEL)	Noise compatibility standard established by California Administrative Code, Title 21, Section 5000. The CNEL is the24-hour average, A-weighted sound level with a 5 dB penalty added to levels occurring between 10:00 pm and 7:00 am to account for increase annoyance due to noise during the night.
contamination	The degradation of naturally occurring water, air, or soil quality either directly or indirectly as a result of human activities.
Council on Environmental Quality (CEQ)	Establisbed by NEPA, consists of three members appointed by the president. CEQ regulations (40 C.F.R. §§ 1500-1508) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and timing and extent of public participation.
cultural	(1) The nonbiological and socially transmitted system of concepts, institutions, behavior, and materials by which a society adapts to its effective natural and human environment. (2) Similar or related assemblages of approximately the same age from a single locality or district, thought to represent the activities of one social group.
cultural resources	Includes any object, site, area, building, structure, or place that is archeologically or historically significant, or that exhibits traditional cultural value (e.g., properties sacred to Native Americans or other ethnic groups). The definition includes assets significant in the architectural, scientific, engineering, economic, agricultural, educational, social, political, military, or cultural annals of the area.
culvert	A conduit for a transverse drain.
cumulative impacts	The combined impacts resulting from all programs occurring concurrently at a given location.
day-night average sound level (L_{dn})	The 24-hour average-energy sound level expressed in decibels, with a 10 decibel penalty added to sound levels between 10:00 pm and 7:00 am to account for increased annoyance due to noise during the night.

decibel (dB)	A unit of measure on a logarithmic scale that describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.
developed	Land, lot, parcel, or area that has been built upon or where public services have been installed prior to residential, commercial, or industrial construction.
direct impact	Effects resulting solely from the proposed action.
disposal	Legal transfer of DON property to other ownership.
effluent	Waste material discharged into the environment.
emissions	Substances discharged into the air.
endangered species	A plant or animal class with potential for extinction throughout all or a significant portion of its range.
Endangered Species Act (ESA)	Requires federal agencies to determine the effects of their actions on endangered species and their critical habitats.
Environmental Baseline Study	A report prepared as part of the base closure process to document environmental conditions at a military base.
Environmental Impact Report (EIR)	A detailed informational document required by CEQA, prepared by a lead agency (e.g., city or county), that analyzes a project's potential significant effects and identifies mitigation measures and reasonable alternatives to avoid the significant effects.
Environmental Impact Statement (EIS)	A detailed informational document required of federal agencies by NEPA for major projects or legislative proposals significantly affecting the environment. A tool for decision-making, the EIS describes the positive and negative effects of the undertaking and lists alternative actions.

Environmental Justice	The examination of project-induced disproportionate human health or environmental adverse impacts upon minority and low-income populations. Federal agencies are required to examine environmental justice impacts pursuant to President Clinton's Executive Order 12898.
ethnohistory	A study of the development of cultures.
equivalent noise levels (L_{eq})	Used to develop single-value descriptions of average noise exposure over various periods.
fault	Fracture in the earth's crust accompanied by a displacement of one side of the fracture with respect to the other and in a direction parallel to the fracture.
feasibility study	Identifies and evaluates all applicable site cleanup alternatives. For most sites, a long list of alternative is possible. A risk assessment is performed as part of the study to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human bealth and the environment, ease of implementation, and overall cost. Typically, the remedial investigation and feasibility study are performed concurrently.
fiscal	Relating to financial matters.
flood plain	Level land that may be submerged by floodwaters.
ground water	Water in subsurface areas, collected due to porous and permeable geologic formations, that supplies wells and springs.
habitat	The place or environment where a plant or animal normally grows or lives.
hangar	A structure used for the storage and repair of aircraft.

hazardous material	A substance or mixture of substances that poses a substantial risk or potential risk to human health or the environment. Any substance designated by the USEPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if it is otherwise released into the environment.
hazardous waste	A waste or combination of wastes that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness; or may pose a substantial hazard or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
historic (cultural resources)	A period after the advent of written history dating to the time of the first Euro-American contact in an area. Also refers to items primarily of Euro-American manufacture.
hydrology	The properties, circulation, and distribution of water on or below the earth's surface.
impacts	An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique.
infrastructure	The basic installations and facilities on which the continuance and growth of a locale depend (roads, schools, power plants, utility lines, and communication systems).
Installation Restoration Program (IRP)	A program established by the Department of Defense to meet requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the Superfund Amendments and Reauthorization Act of 1986, that identifies, assesses, and cleans up or controls contamination from past hazardous waste disposal practices and hazardous material spills.
landfill	A site for the disposal of trash and garbage.

lead agency	The federal agency with primary responsibility for preparing an EIS. The local lead agency with the primary responsibility for preparing an EIR.
level of service (LOS)	In transportation analysis, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists or pedestrians.
liquefaction	The transformation during an earthquake of unconsolidated water-saturated sediment into a liquid form.
lithic	Of, relating to, or being a stone tool.
loam	A soil consisting of varying proportions of clay, silt, and sand.
Local Reuse Authority (LRA)	Local agency(ies) responsible for the preparation of a reuse plan containing a recommended use of federal property to be disposed of.
long-term impacts	Impacts that would occur over an extended period, whether they start during the construction or operations phase. Most impacts from the operations phase are expected to be long term since program operations essentially represent a steady-state condition (i.e., impacts resulting from actions that occur repeatedly over a long period). However, long-term impacts could also be cause by construction activities if a resource is destroyed or irreparably damaged or if the recovery rate of the resource is very slow.
mitigation	A method or action to reduce or eliminate program impacts.
National Environmental Policy Act (NEPA)	Passed by Congress in 1969, the Act established a national policy designed to encourage consideration of the influence of human activities on the natural environment. When referred to as NEPA in the report, NEPA includes the current law and implementing guidelines (40 C.F.R. §§ 1500-1508), CEQ regulations on implementing NEPA, Navy guideline (OPNAVINST 5090.1B), and BRAC 1990. NEPA procedures require that environmental information be made available to the public before decisions are made.

National Historic Preservation Act (NHPA)	Protects cultural resources. Section 106 of the Act requires a federal agency to take into account the potential effect of a proposed action on properties listed on or eligible for listing on the National Register of Historic Places.
National Pollution Discharge Elimination System (NPDES)	A provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the U.S. Environmental Protection Agency or by the state.
National Register of Historic Places (NRHP)	A federally-maintained register of districts, sites, building, structures, architecture, and culture.
Native Americans	Used in the collective sense to refer to individuals, bands, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contacts.
native vegetation	Plant life that occurs naturally in an area without agricultural or cultivational efforts. It does not include species that have been introduced from other geographical areas and have becomes naturalized.
natural gas	A natural fuel containing primarily methane and ethane that occurs in certain geologic formations.
noise	Any sound that is undesirable because it interferes with speech and hearing or is intense enough to damage hearing or is otherwise annoying.
Notice of Intent (NOI)	A notice, required under NEPA, that is prepared by the federal Lead Agency and published in the Federal Register, immediately after deciding that an EIS is necessary. The NOI briefly describes the proposed action and alternatives, explains the scoping process and the opportunity to participate in scoping meetings, and lists the contact person within the Lead Agency.

Notice of Preparation (NOP)	A notice, required under CEQA, that is prepared by the local Lead Agency, that announces the preparation of an EIR. The notice, which contains a description of the proposed project and potential environmental effects, is sent to every responsible federal and trustee agency.
paleontology	A science dealing with the life of past geological periods as known from fossil remains.
passenger aircraft	Generally large aircraft that carries passengers short to long distances on a regular schedule.
peak hour	The hour of highest traffic volume on a given section of roadway between 7:00 am and 9:00 am or between 4:00 pm and 6:00 pm.
permit	An authorization, license, or equivalent control document to implement the requirements on an environmental regulation.
polychlorinated biphenyls	Compounds produced by replacing hydrogen atoms in biphenyl with chlorine, that have various industrial applications and are poisonous environmental pollutants which tend to accumulate in animal tissues.
potable water	Water suitable for drinking.
public benefit transfer	The transfer of property or goods from a federal agency to a public agency.
Record of Decision (ROD)	A written public record, required by NEPA, prepared by the federal Lead Agency subsequent to the preparation of an EIS. A ROD includes an explanation of the decision, the alternatives, factors considered by the agency in making the decision, mitigation measures, and monitoring programs for any adopted mitigation measures.

remedial investigation	Performed to more fully define the nature and extent of the contamination at a site and to evaluate possible methods of cleaning up the site. During the investigation, groundwater, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of contamination.
runoff	The noninfiltrating water entering a stream or other conveyance channel shortly after a rainfall event.
runway	A paved strip of ground on a landing field for the landing and taking off of aircraft.
scoping	Process for determining the range of issues that should be addressed prior to implementation of a proposed action.
screening	The process of developing and identifying alternatives.
seismicity	Activity relating to, resembling, or caused by an earthquake. Earthquakes in the region may cause ground shaking imposing lateral loads to the proposed facilities and resulting in liquefaction of the loose- to medium-dense sand fill.
sensitive habitats	Vegetative communities that provide habitat for a diversity of species.
sensitive species	Plant and animal species that are rare, endangered, have unique habitat requirements, and/or have restricted distribution, as defined by the U.S. Fish and Wildlife Service.
short-term impacts	Transitory effects of the proposed program that are of limited duration and that are generally caused by construction activities or operations start-up.
significance	The importance of a given impact on a specific resource as defined under CEQ regulations.

site (archaeological resources)	The location of past cultural activity; a defined space with more or less continuous archeological evidence.
socioeconomics	Involving a combination of economic and social factors.
State Historic Preservation Officer (SHPO)	The official with each state, authorized by the state at the request of the Secretary of the Interior, to implement the National Historic Preservation Act.
surface water	All water naturally open to the atmosphere and all wells, springs, or other collectors that are directly influenced by surface water.
surplus federal property	Land that bas been determined to be in excess of the needs of the federal government.
threatened species	Plant and wildlife classifications likely to become endangered in the foreseeable future.
toxic	Harmful to living organisms.
U.S. Environmental Protection Agency (USEPA)	An independent federal agency established in 1970 to regulate federal environmental matters and to oversee the implementation of federal environmental laws.
watershed	An area bounded by a divide and draining ultimately to a particular watercourse or body of water.
waters of the United States	Waters that are subject to the Clean Water Act. These include both deep water aquatic habitats and special aquatic sites, including wetlands.

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APPENDIX B
OVERVIEW OF FEDERAL AND STATE DISPOSAL LAWS AND REGULATIONS

APPENDIX B
OVERVIEW OF FEDERAL AND STATE DISPOSAL LAWS AND REGULATIONS

Federal Reuse Planning Programs and Procedures

This section briefly highlights some of the key federal planning programs and procedures that guide the base closure process at MCAS Tustin.

Defense Base Closnre and Realignment Act of 1990 (10 U.S.C. § 2687)

This act established procedures to minimize the economic hardships on local communities adversely affected by base closures and to facilitate the economic recovery of such communities. In order to maximize the local benefit from the reutilization and redevelopment of the installation, the Secretary of the military department must consider local economic needs and priorities in the disposal process.

For MCAS Tustin, the City of Tustin is recognized as the local redevelopment authority (LRA). The LRA is the entity recognized by the DoD through its Office of Economic Adjustment to prepare and direct the implementation of the reuse plan. In determining economic needs and priorities, and in preparing the Record of Decision (ROD) for an EIS, the federal lead agency must take into account and give substantial deference to the reuse plan developed by the LRA for the installation. A reuse plan is provided for the reuse or redevelopment of the closed military installation.

President Clinton's Five Point Program

This program was announced by President Clinton in July 1993 in an effort to offset the negative effects of military base closures on local communities. The program emphasizes expeditious disposal of federal property for uses that will create new jobs for the local community. Job creation and economic development are given the highest priority in the reuse of closed military bases.

National Defense Authorization Act of 1994 (Pub. L. No. 103-160, 107 Stat. 1547)

This act is an amendment to the DBCRA of 1990. Under this act, the federal government should attempt to facilitate the economic recovery of communities that experience adverse economic

circumstances as a result of base closure or realignment. The federal government works with such communities to identify and implement means of redeveloping and revitalizing closed military installations in a beneficial manner and accelerate the environmental cleanup and restoration of closed military installations. The federal government may also make real property at closed military installations available to local communities at less than fair market value, or without consideration, if appropriate.

Stewart B. McKinney Homeless Assistance Act of 1987, as amended (Public Law No.100-77)

Under this act, a homeless services provider may prepare and submit an application to acquire surplus federal property for purposes of assisting the homeless. As authorized by the act, DON must report the potential availability of all underutilized, unutilized, excess and/or surplus buildings and land to HUD. The suitability of these properties for use by the homeless is then determined by HUD. Homeless assistance providers have 60 days after the notice of availability is published in the Federal Register to express interest in the property to HHS and 90 days to submit an application. HHS has 25 days from receipt of the application to review and approve/deny it. With extremely limited exceptions, once an application is submitted to and approved by HHS, the holding agency (in this case DON) must assign the property to HHS for conveyance to the approved applicant.

An assignment of real property to another federal agency is categorically excluded under NEPA. However, under the provisions of 45 C.F.R. § 12.10, the other federal agency would be required to complete an environmental evaluation and to otherwise comply with NEPA prior to making a final conveyance of the property.

Base Closure Community Redevelopment and Homeless Assistance Act (42 U.S.C. § 11411)

The provisions of the Base Closure Community Redevelopment and Homeless Assistance Act, passed as part of the National Defense Authorization Act of 1994, support and put into law the intent of the President's efforts to support local communities affected by closure. This Act, also referred to as the "Redevelopment Act", creates a locally controlled reuse process for redevelopment of a closing base. The Act requires that the DoD recognize a local redevelopment authority for each closing installation in order to develop a reuse plan for each installation. The LRA is responsible for completing the screening and use of the base for state, local government, and homeless uses. The Department of Housing and Urban Development (HUD) reviews the community redevelopment plan to ensure that homeless needs have been adequately considered.

Surplus Property Act of 1994 (50 U.S.C. app. § 1601) **and Federal Property and Administrative Services Act of 1949** (40 U.S.C. 471)

These Acts established the authority for the transfer of excess real property to other federal agencies and the disposal of surplus property. The Acts and implementing regulations provide for public benefit conveyances for health, education, and other purposes to tax exempt, nonprofit organizations, and public entities. The Acts and regulations establish the process for the disposal of property through negotiated sales to public entities and through advertised competitive bidding.

State and Local Planning Programs and Procedures

This section briefly highlights some of the key local planning programs and procedures that guide the reuse process of MCAS Tustin.

California Planning and Zoning Law (Government Code Title 7, Division 1, §§ 65000-66037)

This law established regulations for long-term policies for use of property and related improvements, as well as the framework for zoning and subdivision regulations to implement those policies by city, county, and other local government agencies. California State law requires each City to adopt a comprehensive, long-term general plan to

California Community Redevelopment Law (Health and Safety Code, § 33000 et. seq.)

This law establishes regulations for use by cities and counties to revitalize deteriorating and blighted urban areas. It authorizes a city or a county to establish a redevelopment agency and one or more redevelopment project areas. The law provides a redevelopment agency with powers that are typical for a local governmental agency and two unique powers: the ability to use the power of eminent domain (condemnation) to acquire property for resale to another private entity or organization; and the power to collect property tax increment in order to finance the redevelopment programs of the community, including the provision of public infrastructure and other improvements. Most of the MCAS Tustin reuse planning area is within the boundaries of a proposed redevelopment project area.

California Local Military Base Recovery Area Act (Government Code § 7105-7117)

In order to stimulate business and industrial growth in areas affected by military base closures, the State Legislature established the concept of local military base recovery areas (LAMBRAs) that

could provide relaxed regulatory controls, tax credits, and other economic incentives to private sector investors. Local jurisdictions can apply for LAMBRA status for a base, provided it is not already within a state-designated enterprise zone. The act authorizes the California Trade and Commerce Agency (CTCA) to designate no less than one LAMBRA in each of the state's five regions, and limits the Agency to designating no more than eight LAMBRAs.

MCAS Tustin is located in LAMBRA Region 5, which includes the counties of Los Angeles, Orange, Ventura, Santa Barbara, San Luis Obispo, and Kern. The City of Tustin's application for a LAMBRA has been conditionally approved.

Governor Wilson's Executive Order W-81-94

This Executive Order by Governor Pete Wilson directs State agencies to pursue successful economic conversion of military bases by implementing State programs, regulatory pursuits, and allocation of resources for State-funded capital outlay projects. It includes provisions to expedite economic assistance and regulatory and resource reviews. It also designates the Director of the Office of Planning and Research (OPR) as the State lead public contact for redevelopment of military bases, and directs OPR to coordinate a comprehensive program to implement recommendations provided by the Governor's Military Base Reuse Task Force through State and Federal legislation. All State departments and agencies are directed to cooperate in this effort.

APPENDIX C
NOTICE OF INTENT (NOI)
NOTICE OF PREPARATION (NOP)
NOI/NOP DISTRIBUTION LIST
SUPPLEMENTARY NOI
SUMMARY OF COMMENTS RECEIVED ON NOI/NOP

[Federal Register: July 5, 1994]

DEPARTMENT OF DEFENSE
Department of the Navy

Notice of Intent to Prepare an Environmental Impact Statement/ Environmental Impact Report For Disposal and Reuse of Marine Corps Air Station, Tustin, CA

Pursuant to the National Environmental Policy Act as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-08), and pursuant to the California Environmental Quality Act (CA Public Resources Code Sections 21000 et seq.), the U.S. Marine Corps and the City of Tustin intend to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental effects of the disposal and reuse of Marine Corps Air Station (MCAS) Tustin. This action is being conducted in accordance with the Defense Base Closure and Realignment Act of 1990, and the specific 1993 base closure and realignment decisions approved by the Congress in September 1993.

The proposed action to be evaluated in the EIS/EIR is the disposal of land, buildings, and infrastructure of MCAS Tustin for subsequent reuse. The Marine Corps and City of Tustin intend to analyze the environmental effects of the disposal of MCAS Tustin based on the reasonable foreseeable reuse of the property, taking into account uses to be identified by the City of Tustin Base Closure Task Force.

The Task Force has developed a Specific Plan/Reuse Plan to guide the reuse of MCAS Tustin in a variety of uses, including public and private housing, commercial, light industrial, and recreation uses. Some of the existing structures and facilities, including housing, are anticipated to be reused. A number of facilities, including the airfield operation facilities, are proposed for removal. Agricultural and vacant areas on MCAS Tustin are proposed to be developed with urban uses.

Full buildout of the proposed land uses will result in a maximum of 4,601 dwelling units and about 12.3 million square feet of non-residential uses such as commercial business, light industrial, and recreational uses (about 2.1 million square feet is existing floor area on the base, and 10.2 million square feet is potential new floor area). It is also currently estimated that about 25 percent of the site would be used for public uses.

The project also will include the extension of major arterials through the base including Tustin Ranch Road to Von Karman, Warner Avenue from Red Hill to west of Jamboree Road, and creation of a secondary interior loop roadway and local roadways to facilitate local circulation. The Specific/Reuse Plan will also address possible variations to the Tustin Ranch Road and Warner Avenue extensions in the event the southerly blimp hangar is removed.

Alternatives to be addressed in the EIS/EIR can be characterized as follows:

1. Arterial Grid Pattern/High Residential--land uses are driven by a grid pattern of major arterial extensions. This alternative has the greatest number of residential units. This alternative also has no community core land use flexibility. The alternative could pose limitations in responding to market absorption and soil clean-up phasing.

2. Ideal Interior Loop Pattern/Low Residential--the alignment of arterial highways and the proposed looped system would be modified to show its optimum alignment if the southeast blimp hangar could not be reused, and would include possible variations to the Tustin Ranch Road and Warner Avenue extensions. This alternative would have the fewest number of residential units and would result in the highest commercial retail and office square footage, particularly at the southerly portion of the site.

3. No action--retention of the property by the Marine Corps in a

caretaker status. However, because of the process mandated by the Base Closure and Realignment Act, selection of the no action alternative would be considered impracticable for the Marine Corps to implement.

Major environmental issues that will be addressed in the EIS/EIR include land use, housing, utilities, noise, transportation/ circulation, public services, airfield operations, hazardous materials, water resources, air quality, biological resources, and cultural resources.

The Marine Corps and City of Tustin will initiate a scoping process to determine the extent of issues to be addressed and identifying the significant issues related to this action. The Marine Corps and City of Tustin will hold a public scoping meeting on July 20, 1994, beginning at 7:00 p.m., at the City of Tustin Community Center located in the Tustin Civic Center, 300 Centennial Way. This meeting will be advertised in area newspapers.

A brief presentation will precede the request for public comment. Marine Corps and City of Tustin representatives will be available at this meeting to receive comments from the public regarding issues of concern to the public. It is important that federal, state, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during the preparation of the EIS/EIR. In the interest of available time, each speaker will be asked to limit oral comments to 5 minutes.

Agencies and the public are also invited and encouraged to provide written comment on scoping issues in addition to, or in lieu of, oral comments at the public meeting. To be most helpful, scoping comments should clearly describe specific issues or topics which the author/ speaker believes the EIS/EIR should address. Written statements and questions regarding the scoping process should be mailed to: Christine Shingleton, Assistant City Manager, City of Tustin, 300 Centennial Way, Tustin, CA 92680, telephone number (714) 573-3116. All comments must be received no later than August 5, 1994.

Dated: June 28, 1994.
Lewis T. Booker, Jr.,
LCDR, JAGC, USN,
Federal Register Liaison Officer.
[FR Doc. 94-16114 Filed 7-1-94; 8:45 am]
BILLING CODE 3810-AE-P

NOTICE OF PREPARATION

From:
Christine A. Shingleton
Assistant City Manager
City of Tustin
300 Centennial Way
Tustin, California 92680

Subject: Notice of Preparation of a Draft Environmental Impact Statement/Environmental Impact Report

Project Title: Specific Plan/Reuse Plan and Base Disposal for Marine Corps Air Station (MCAS) Tustin, California

Project Location: MCAS Tustin, located in City of Tustin and City of Irvine, Orange County

Lead Agency: (for NEPA/CEQA purposes)

Agency Name: City of Tustin (in conjunction with the U.S. Marine Corps)

Street Address: 300 Centennial Way

City/State/Zip: Tustin, CA 92660

Contact: Christine Shingleton

Consulting Firm

Firm Name: Cotton/Beland/Associates

Street Address: 6310 Greenwich Dr., #220

City/State/Zip: San Diego, CA 92122

Contact: John Bridges

The City of Tustin and the U.S. Marine Corps will be the joint Lead Agencies and will prepare a joint environmental impact statement/environmental impact report for the project identified above. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIS/EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (X is __ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but *not later than 30 days* after receipt of this notice.

Please send your response to Christine Shingleton at the address shown above, or contact her at (714) 573-3106. We will need the name for a contact person in your agency.

Project Description: The Specific Plan/Reuse Plan establishes future uses to be developed at MCAS Tustin. The Plan permits a variety of residential, public, light industrial, commercial and recreational uses. The environmental document will be a joint EIS/EIR.

Date 6-30-94

Signature Christine Shingleton

Telephone (714) 573-3100

Title Assistant City Manager

FILED
JUL 07 1994
GARY L. GRANVILLE, County Clerk
By _____ DEPUTY

ENVIRONMENTAL ASSESSMENT/

INITIAL STUDY

for the

Specific Plan/Reuse Plan and Base Disposal for the

Marine Corps Air Station (MCAS Tustin), California

June 1994

Prepared for:

City of Tustin
Community Development Department
300 Centennial Way
Tustin, California 92680
(714) 573-3107
Contact: Christine Shingleton

and

U.S. Marine Corps
AC/S Installation, Attn: 1JP
MCAS El Toro, P.O. B 94003
Santa Ana, California 92709-4003

Prepared by:

Cotton/Beland/Associates
The Planning Center
HNTB

COUNTY OF ORANGE

OFFICE OF THE COUNTY CLERK

GARY L. GRANVILLE
COUNTY CLERK

TELEPHONE: 714/834-2248

OLD COUNTY COURTHOUSE
211 W. SANTA ANA BLVD.
P.O. BOX 22013
SANTA ANA, CA 92702-2013

Memorandum

TO: City of Tustin. DATE: AUG 09 1994

SUBJECT: Environmental Impact Reports -
Amendment of "Public Resources Code, Section 21092.3".

The attached Notice received, filed, and a copy was posted on JUL 07 1994. It remained posted for 30 (thirty) calendar days.

Gary L. Granville
County Clerk of the State of
California in and for the County of Orange.

By: Norma Doeve, Deputy

NORMA DOEVE

Public Resource Code 21092.3

The notices required pursuant to Sections 21080.4 and 21092 for an evironmental impact report shall be posted in the office of the County Clerk of each county***in which the project will be located and shall remain posted for a period of 30 days. The notice required pursuant to Section 21092 for a negative declaration shall be so posted for a period of 20 days, unless otherwise required by law to be posted for 30 days. The County Clerk shall post notices within 24 hours of receipt.

Public Resourse Code 21152(c)

All notices filed pursuant to this section shall be available for public inspection, and shall be posted *** within 24 hours of receipt in the office of the County Clerk. Each notice shall remain posted for a period of 30 days ***. Thereafter, the clerk shall return the notice to the local lead agency *** with a notation of the period it was posted. The local lead agency shall retain the notice for not less than nine months.

Addition or changes by underline; deletions by ***.

NOI/NOP DISTRIBUTION LIST
MCAS TUSTIN EIS/EIR

Chief Franks
Police Department
City of Tustin
300 Centennial Way
Tustin, CA 92680

* FEDERAL AGENCIES

U.S. Department of Defense
Army Corps of Engineers
Office of the Chief of Enginee
20 Massachusetts Avenue NW
Washington, D.C. 20314-1000

U.S. Department of Defense
Army Corps of Engineers
Los Angeles District Office
Attn: Ms. Ruth Chase
P.O. Box 2711
Los Angeles, CA 90053-2325

U.S. Department of Defense
MCAS - El Toro
Community Plans and Liaison Office
Colonel D. Pender
Community Liaison Officer
Santa Ana, CA 92709-5000

U.S. Department of Defense
MCAS - El Toro
Attn: COMCABWEST
AC/S Environmental
P.O. Box 95001
Santa Ana, CA 92709-5001

U.S. Department of Defense
Naval Facilities Engineering Command
Southwest Division
Attn: Larry L. Muzum
1220 Pacific Highway
San Diego, CA 92132-5190

U.S. Department of Defense
Attn: Captain David Larson
Office of Economic Adjustment
400 Army Navy Drive, Suite 200
Arlington, Virginia 22202

U.S. Department of Defense
James Dwyer, CDR USCG
Planning Officer
Eleventh Coast Guard District (
501 W. Ocean Blvd., Suite 7270
Long Beach, CA 90822-5399

U.S. Department of Defense
Armed Forces Reserve Center
Commander Hq 63rd U.S Army Reserve
Command
Attn: AF/CC-ACA-FAC
Los Alamitos, CA 90720-5001

U.S. Department of Defense
Department of the Air Force
Attn: Major Goldbach
CCR - 222CBCS
2651 Newport Blvd.
Costa Mesa, CA 92627-4627

U.S. Department of Defense
NavFacEngCom - Southwest Divisi
Desire L. Chandler, Envir. Engi
Code 18
1220 Pacific Highway
San Diego, CA 92132-5190

U.S. Department of Energy
Environmental Impacts Division
12th & Pennsylvania Ave., N.W.
Washington, D.C. 20461

U.S. Department of Interior
1849 C Street, N.W., Room 2340
Washington, D.C. 20240

U.S. Department of Transportati
Federal Aviation Administration
Airspace & Procedures Branch AW
P.O. Box 92007
Worldway Postal Center
Los Angeles, CA 90009-2007

U.S. Department of Transportation
Federal Aviation Administration
Western Pacific Region
Attn: AWP-5
P.O. Box 92007, WPC
Los Angeles, CA 90009

U.S. Department of Transportation
California Division
Federal Highway Administration
P.O. Box 1915
Sacramento, CA 95812-1915

U.S. Department of Transportati
Federal Highway Administration
Region 9
Two Embarcadero Center, Room 53(
San Francisco, CA 94111

U.S. Department of Transportation
Federal Highway Administration
Region 9
211 Main Street, Room 1100
San Francisco, CA 94105

U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

U.S. Fish & Wildlife Service
Regional Office
911 NE 11th Avenue
Portland, OR 97232

Honorable Robert Dornan
U.S. Congressman
300 Plaza Alicante, #360
Garden Grove, CA 92640

Honorable Christopher Cox
U.S. Congressman
4000 MacArthur Blvd., East Tower #430
Newport Beach, CA 92660

* STATE AGENCIES

Calif. Environmental Protection Agency
555 Capitol Mall, Suite 235
Sacramento, CA 95814

Calif. Environmental Protection Agency
Region 4
245 W. Broadway
Long Beach, CA 90802

Calif. Environmental Protection
Toxic Substance Control Division
Attn: Nanny Alonzo
245 W. Broadway, 3rd floor
Long Beach, CA 90802

State of Calif/C.D.P.A.
Dept. of Toxic Substances
Attn: Francesca D'Onofrio
Office of Base Closure & Conversion
P.O. Box 806
Sacramento, CA 95812-0806

California Highway Patrol
Lt. Phillips
P.O. Box 898
Sacramento, CA 95804

California Regional Water Quality
Control Board
Santa Ana Region
Attn: Ken Williams
2010 Iowa Avenue, Suite 100
Riverside, CA 92507

State Department
of Boating & Waterways
1629 "S" Street
Sacramento, CA 95814

State Department of Conservation
1416 Ninth Street, Room 1326-2
Sacramento, CA 95814

State Department of Conservatic
Division of Mines & Geology
1416 Ninth Street, Room 1326-2
Sacramento, CA 95814

State Department of Fish and Game
Region 5
330 Golden Shore, Suite 50
Sacramento, CA 95814

State Department of Fish and Game
Attn: Richard Tharratt
1416 Ninth Street
Sacramento, CA 95814

State Department of Forestry
and Fire Protection
1416 Ninth Street, Room 1506-17
Sacramento, CA 95814

State Department of General Services
1015 "L" Street
Sacramento, CA 95814

State Department of Health Services
2151 Berkeley Way
Berkeley, CA 94804

State Department of Health Servic
28 Civic Center Plaza, Room 325
Santa Ana, CA 92701

State Department of Housing
and Community Development
P.O. Box 952053
Sacramento, CA 94252-2053

State Department of Parks
and Recreation
1220 "K" Street Mall, 3rd floor
Sacramento, CA 95814

State Department of Parks
and Recreation
Orange County Area
18331 Enterprise
Huntington Beach, CA 92648

State Department of Transportation
Division of Aeronautics
1130 "K" Street, 4th Floor
P.O. Box 942873
Sacramento, CA 94273-0001

State Department of Transportation
Caltrans - Planning
1120 "N" Street
Sacramento, CA 95815

State Department of Transporta
Caltrans - District #7
Attn: Ken Steele
120 Spring Street
Los Angeles, CA 90012

State Department of Transportation
Caltrans - District #12
2501 Pullman Street
Santa Ana, CA 92705

State Department of Water Resources
P.O. Box 6598
Los Angeles, CA 90055-1598

State of California
Air Resources Board
1102 "Q" Street
Sacramento, CA 95814

State of California
Clearinghouse
1400 Tenth Street, #121
Sacramento, CA 95814

State of California
Energy Commission
1416 Ninth Street, Room 200
Sacramento, CA 95814

State of California
Lands Commission
1807 13th Street
Sacramento, CA 95814

State of California
Native American Heritage Commission
1400 Tenth Street
Sacramento, CA 95814

State of California
Office of Local Assistance
Real Estate Division
Frank Harding, Jr.
501 J Street, Suite 350
Sacramento, CA 95814

State of California
Public Utilities Commission
California State Building
107 South Broadway
Los Angeles, CA 90012

State of California
Public Utilities Commission
Attn: George Hersch
350 McAllister Street
San Francisco, CA 94102

State of California
Public Works Board
650 Howe Avenue
Sacramento, CA 95825

State of California
Reclamation Board
1416 Ninth Street
Sacramento, CA 95814

State of California
Regional Water Quality Control Board,#9
6154 Mission Gorge Road, Suite 205
San Diego, CA 92120

State of California
Solid Waste Management Board
1020 Ninth Street, Room 300
Sacramento, CA 94814

State of California
Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

State Office of Emergency Services - Regional
AFRC, Bldg. 283
Los Alamitos, CA 90720-5001

State Office of Historic Preservation
Attn: Cherilyn Widell
P.O. Box 942896
1416 9th Street
Sacramento, CA 94296-0001

State Office of Planning & Re:
Attn: M. Getty
1400 Tenth Street, Room 121
Sacramento, CA 95814

* REGIONAL AGENCIES

Southern California Association of Governments
818 W. 7th St., 12th floor
Los Angeles, CA 90017

South Coast Air Quality District
Attn: Brian Farris
21865 E. Copley Drive
P.O. Box 4939
Diamond Bar, CA 91765-0939

* COUNTY AGENCIES

Orange County Agricultural Commissioner
1010 South Harbor Blvd.
Anaheim, CA 92805

Orange County Airport Land Use Commission
P.O. Box 4048
Santa Ana, CA 92702-4048

Orange County Board of Education
1300 S. Grand Avenue
Santa Ana, CA 92701

Orange County Board of Supervisors
Attn: Ernie Schneider
Chief Administrative Officer
10 Civic Center Plaza, 5th Floor
Santa Ana, CA 92701

Orange County Clerk
700 Civic Center Drive
Santa Ana, CA 92702

Orange County Depart. of Education
Attn: Robert D. Ours, Administrator
Facilities and Planning
200 Kalmus Drive
P.O. Box 9050
Costa Mesa, CA 92628-9050

Orange County EMA
Traffic Engineer
Attn: Max Anderson
400 Civic Center Drive West
Santa Ana, CA 92701

Orange County Fire Department
Attn: Fire Chief Holmes
180 S. Water Street
Orange, CA 92666

Orange County Flood Control District
400 Civic Center Drive, Room 314
Santa Ana, CA 92701

Orange County Hazardous Material Program
1725 W. 17th Street
Santa Ana, CA 92706

Orange County Health Care Agenc
Environmental Health
Hazardous Materials Section
Attn: Bri Dewey
2009 E. Edinger
Santa Ana, CA 92702

Orange County Health Department
1725 W. 17th Street
P.O. Box 355
Santa Ana, CA 92702

Orange County Homeless Issue Task Force
Attn: Mr. Tim Shaw
18012 Mitchell Ave
Irvine, CA 92714

Orange County John Wayne Airpor
3151 Airway Avenue
Building K101
Costa Mesa, CA 92626

Orange County Local Agency Formation Commission
Executive Director
P. O. Box 687
Santa Ana, CA 92701

Orange County Public Library
Administrative Office
1501 St. Andrew Place
Santa Ana, CA 92705

Orange County Public Library
Tustin Branch
345 East Main Street
Tustin, CA 92680

Orange County Sanitation District #7
Attn: Tom Dawe, Director of Engineering
10844 Ellis Avenue
P.O. Box 8127
Fountain Valley, CA 92728-8127

Orange County Transportation Authority
Attn: Director
1055 N. Main
Santa Ana, CA 92701

Orange County
Transportation Corridor Agency
Attn: William Woollett, Jr.
Chief Executive Officer
345 Clinton Street
Costa Mesa, CA 92626

Orange County
Transportation Corridor Agency
Attn: Steve Letterly
Director of Environmental Services
P.O. Box 28820
Santa Ana, CA 92799-8820

Orange County Vector Control
P.O. Box 87
Santa Ana, CA 92702

* UTILITIES

Continental Cablevision
644 "B" Street
Tustin, CA 92680

Dimension Cable
Attn: Kimberly Toonen
26181 Avenida Aeropuerto
San Juan Capistrano, CA 92675-4899

Irvine Ranch Water District
Attn: Janet Irie
18802 Bardeen Street
Irvine, CA 92715

Metropolitan Water District
Water Resources & Environment
1111 W. Sunset Blvd.
Los Angeles, CA 90054-0153

Orange County Water District
Attn: Sec. Mgr.
P.O. Box 20895
Fountain Valley, CA 92728

Pacific Bell
Attn: Jim Bass
1452 Edinger, Room 1331
Tustin, CA 92680

Pacific Telephone Company
Attn: L.C. Arthington
3939 E. Colorado, 1st floor
Anaheim, CA 92807

Southern California Edison Co.
Attn: C.V. Wright
1241 S. Grand Avenue
Santa Ana, CA 92705

Southern California Edison Co
Attn: Patricia Buttress
531 E. Chapman
Orange, CA 92666

Southern California Edison Co.
Attn: Steve Nelson
14155 Rake
Irvine, CA 92718

Southern California Gas Company
Attn: P.M. Glover
P.O. Box 3334
Anaheim, CA 92804-3334

* SCHOOLS

Irvine Unified School District
Attn: Paul Reed, Deputy Superintendent
5050 Barranca Parkway
Irvine, CA 92714

Irvine Unified School District
Attn: Corinne Loskot
Coordinator for Facilities Planning
5050 Barranca Parkway
Irvine, CA 92714

Irvine Valley College
Attn: Dr. Anna L. McFarlin
5500 Irvine Center Drive
Irvine, CA 92720

Rancho Santiago College
Attn: Dr. Vivian Blevins, Chancellor
1530 W. 17th
Santa Ana, CA 92706

Saddleback Community College
Attn: Chancellor
28000 Marguerita Parkway
Mission Viejo, CA 92691

Santa Ana Unified School Dist
Attn: Gaylen Freeman
Assistant Superintendent
1405 French Street
Santa Ana, CA 92701

Santa Ana Unified School District
Attn: Mike Vail, Senior Director
1405 French Street
Santa Ana, CA 92701

Tustin Unified School District
Attn: Dr. David Andrews
Superintendent
300 S. "C" Street
Tustin, CA 92680

Tustin Unified School District
Attn: Paul Fisher
Assistant Superintendent
300 S. "C" Street
Tustin, CA 92680

University of California, Irvine
Attn: Chancellor Laurel Wilkening
Administrative Building, Room 501
University of California, Irvine
Irvine, CA 92717

University of California, Irvine
Government Publications Dept.
P.O. Box 19557
Irvine, CA 92717

* OTHER CITIES

City of Costa Mesa
Planning Division
77 Fair Drive
P.O. Box 1200
Costa Mesa, CA 92626

City of Irvine
Community Development Dept.
Attn: Robert C. Johnson, Dir.
P.O. Box 19575
Irvine, CA 92713

City of Orange
Attn: Jack McGee
300 E. Chapman Avenue
Orange, CA 92666

City of Orange
Attn: Vernon Jones
Comm. Development Dept.
Manager of Comm. Planning
300 E. Chapman Ave.
Orange, CA 92666-1591

City of Santa Ana
Attn: Robyn Uptegraff
Community Development
206 W. 4th Street, 4th floor
Santa Ana, CA 92702

* HOMEOWNERS ASSOCIATIONS

COUNTY OF ORANGE

OFFICE OF THE COUNTY CLERK

GARY L. GRANVILLE
COUNTY CLERK

TELEPHONE: 714/834-2248

OLD COUNTY COURTHOUSE
211 W. SANTA ANA BLVD.
P.O. BOX 22013
SANTA ANA, CA 92702-2013

RECEIVED
APR 25 1995
COMMUNITY DEVELOPM

Memorandum

TO: City of Tustin DATE: 4-24-95

SUBJECT: Environmental Impact Reports -
Amendment of "Public Resources Code, Section 21092.3".

The attached Notice received, filed, and a copy was posted on 3-15-95. It remained posted for 30 (thirty) calendar days.

Gary L. Granville
County Clerk of the State of
California in and for the County of Orange.

By: Gary L. Granville, Deputy

Public Resource Code 21092.3

The notices required pursuant to Sections 21080.4 and 21092 for an evironmental impact report shall be posted in the office of the County Clerk of each county***in which the project will be located and shall remain posted for a period of 30 days. The notice required pursuant to Section 21092 for a negative declaration shall be so posted for a period of 20 days, unless otherwise required by law to be posted for 30 days. The County Clerk shall post notices within 24 hours of receipt.

Public Resourse Code 21152(c)

All notices filed pursuant to this section shall be available for public inspection, and shall be posted *** within 24 hours of receipt in the office of the County Clerk. Each notice shall remain posted for a period of 30 days ***. Thereafter, the clerk chall return the notice to the local lead agency *** with a notation of the period it was posted. The local lead agency shall retain the notice for not less than nine months.

Addition or changes by underline; deletions by ***.

Please provide your agency's comments on only the changes identified in this letter to me at the address noted above by no later than April 9, 1995. Questions should be directed to Mr. Dane Ogdon at (714) 573-3116. Thank you for your assistance in this matter.

Very truly yours,

Christine A. Shingleton
Assistant City Manager

CAS:DO:do:kd\mcas\nop3-95.ltr

Attachment

Community Development Department

City of Tustin
300 Centennial Way
Tustin, CA 92680

FILE COPY

March 9, 1995

RE: Specific/Reuse Plan and Base Disposal for Marine Corps Air Station (MCAS) Tustin, California

Dear Responsible Agency/and Interested Agencies and Parties:

On June 30, 1994, the City of Tustin issued a Notice of Preparation of a joint environmental impact statement/environmental impact report for the project identified above to affected entities.

Just recently, minor modifications to Table 2-1, found on page 2.0-13 (labeled Buildout Potential of Proposed Land Use Plan), were found to be necessary which do not effect the total square footages or maximum number of dwelling units that would be permitted by the proposed project. Tbese amendments are attached as Exhibit A for your information.

In addition to modifications attached as Exhibit A, Section 2.2 (pages 2.6-5) of the original notice identified all of the proposed discretionary items that will be described and evaluated in the EIS/EIR. An additional discretionary action that the EIS/EIR will be utilized for is a request to the State of California Trade and Commerce Agency to have MCAS Tustin designated a Local Agency Military Base Recovery Area (LAMBRA). The LAMBRA designation provides a framework to attract new businesses, increase private investment, and stimulate job creation to compensate for the loss of revenue that occurs when a military base closes. This will be accomplished thorough the offering of state and local incentives to businesses that locate in a LAMBRA program area.

While we believe that the above minor modifications do not necessarily require additional noticing, the City of Tustin is interested in knowing any views of your agency only as to the proposed modifications to the project identified in this letter. These comments should also be germane to your agency's statutory responsibilities in connection with the proposed project.

Director
(714) 573-3106

Planning & Zoning Info.
(714) 573-3140

Building
(714) 573-3151
(714) 573-3132

Housing
(714) 573-3117

Code Enforcement
(714) 573-3134

Business License
(714) 573-3144

Inspection Requests
(714) 573-3141

Graffiti Hot Line
(714) 573-3111

FAX Machine
(714) 573-3113

TABLE 2-1
BUILDOUT POTENTIAL OF PROPOSED LAND USE PLAN

LAND USE DESIGNATIONS	ACREAGE		NON-RESIDENTIAL USES				RESIDENTIAL USES			
	Gross Acreage	Net Acreage	F.A.R. per Acre	Existing Floor Area (Sq. Ft.)	Potential Floor Area (Sq. Ft.)	Total Floor Area (Sq. Ft.)	DU's per Acre	Existing DU's	Potential New DU's	Total DU's
RESIDENTIAL										
Low Density (1-7 d.u./acre)	202.2	161.8					7	274	30	304
Medium Density (8-15 d.u./acre)	109.7	87.7					15	402	401	803
Very High Density (25-45 d.u./acre)	28.6	22.9					45	861	1,030	1,891
Transition/Emergency Housing	6.1	6.1		85,215	0	85,215				
Golf Village	103.7	83.0				0	7-15	0	934	934
Subtotal	450.3	361.5		85,215	0	85,215		1,537	2,395	3,932
COMMERCIAL/BUSINESS										
Commercial/Business	247.0	216.3	0.35-0.54	300,077	4,061,809	4,361,886				
Commercial	68.8	64.0	0.41	16,996	900,465	917,461				
Commercial/Golf Village	188.5	188.5	0.5-0.6	8,106	272,420	280,526				
Commercial/Recreation	28.7	28.7	0.35	45,890	391,670	437,560				
Village Services	28.4	25.6	0.35		389,688	389,688				
Community Core	236.9	189.5	0.50	329,032	3,468,494	3,797,526	25	0	669	669
Subtotal	798.3	712.6		700,101	9,484,546	10,184,647		0	669	669
INSTITUTIONAL/RECREATIONAL										
Learning Village	130.6	104.7	0.30	822,556	533,380	1,355,936				
Community Park	25.0	25.0	0.10	14,100	0	14,100				
Urban Regional Park	88.0	88.0	0.15	496,068	78,924	574,992				
Right-of-Way	107.9	107.9								
Subtotal	351.5	325.6		1,332,724	612,304	1,945,028				
TOTAL	1,600.1	1,399.7		2,118,040	10,096,850	12,214,890		1,537	3,064	4,601
PUBLIC USE TOTAL	406.1	377.3								
PRIVATE USE TOTAL	1,194.0	1,022.3								

Source: The Planning Center

Note: Sq. Ft. refers to square feet, d.u. refers to dwelling units, and F.A.R. refers to floor area ratio.

APPENDIX C
RESPONSES RECEIVED DURING THE NOI/NOP COMMENT PERIOD

Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1	U.S. Department of Transportation Federal Aviation Administration	A. Provide a contact name representing the Marine Corps.	Chapter 9.0 contains name and address of Navy contact persons (BRAC).
2	State of California Department of Transportation	A. Using the Highway Capacity Manual, conduct traffic analysis to determine impact upon local arterials and State Transportation Facilities, including freeways and ramps (particularly at Newport Blvd., Red Hill, Edinger and Dyer), planned transit facilities, SR-133, Eastern Transportation Corridor, improved El Toro "Y", I-5, I-405 and SR-55. Require appropriate mitigation measures.	Section 4.12, Traffic/Circulation - The expanded study area encompasses most of these intersection locations.
		B. Prepare a traffic management plan at least six months before construction begins.	Section 4.12, Traffic/Circulation
		C. The Specific Plan/Reuse Plan should consider multi-modal systems including bicycle use, and pedestrian linkage between planned land uses and transit.	Sections 4.12 and 7.2.11, Traffic/Circulation for the Implementing Specific Plan.
		D. The bike plan should be consistent with the Countywide Master Plan of Bikeways and OCTA Master Plan of Commuting Bikeways.	Section 4.12, Traffic/Circulation and Section 4.4, Public Services and Facilities.
		E. Examine transport of hazardous materials.	Section 4.11, Hazardous Wastes, Substances and Materials
3	County of Orange Environmental Management Agency	A. Perform traffic analysis consistent with Measure M, including extension of Warner Ave between Jamboree and Red Hill, Tustin Ranch Rd/Von Karman Ave between Barranca Pkwy, and Edinger Ave as major arterial highways.	Section 4.12, Traffic/Circulation
		B. Address the on-site circulation	Section 4.12, Traffic/Circulation
		C. Address consistency between Master Plan of Countywide Bikeways and local bikeway network.	Section 4.12, Traffic/Circulation and Section 4.4, Public Services and Facilities
		D. Provide air quality analysis according to California Air Resources Board and South Coast Air Quality Management District requirements.	Section 4.13, Air Quality
		E. The 100-year floodplain needs to be defined by FEMA.	Section 4.10, Water Resources

	Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1	3	*County of Orange Environmental Management Agency (Continued)*	F. Assess impacts to county storm drain channels, which may be inadequate to convey 100-year runoff.	Section 4.10, Water Resources and Section 4.3, Utilities
			G. Describe existing conditions of receiving waters (including impaired waters status), and goals and objectives for water quality. Use Watershed Basin Plan goals and Specific Plan development objectives for mitigation.	Section 4.10, Water Resources
			H. Address potential construction-related and long-term impacts to surface water quality. Use NPDES plans/requirements for mitigation, including application of Best Management Practices and preparation of Water Quality Management Plans.	Section 4.10, Water Resources
			I. The EIR should correctly refer to the Marine Corps Lighter Than Air Regional Park, consistent with the County Recreation Element.	Section 2.4, Detailed Description of Reuse Alternatives
			J. Address potential impacts to the Peters Canyon Regional Riding and Hiking Trail.	Section 4.4, Public Services and Facilities
			K. Provide solid waste projections.	Section 4.3, Utilities
			L. Address consistency with the Integrated Waste Management Act and proximity to the Frank R. Bowerman Landfill.	Section 4.3, Utilities
2	4	County of Orange Health Care Agency	A. Some of the proposed land uses related to hazardous materials will require approval of the Health Care Agency.	Section 4.11, Hazardous Wastes, Substances, and Materials
3	5	Orange County Public Library	A. The project will impact the Orange County Public Library.	Section 4.4, Public Services and Facilities
4	6	County Sanitation Districts	A. The project site is located within County Sanitation Districts Nos. 7 and 14.	Sections 3.3 and 4.3, Utilities
			B. Calculate the expected sewage flow with the provided coefficients.	Section 4.3, Utilities
			C. To reduce the impact to the treatment plants, industrial uses should incorporate on-site measures to reduce the load strength of the sewage, and all users should incorporate all practical and mandated water conservation measures.	Section 4.3, Utilities
5	7	Southern California Association of Governments	A. The City is located in a job-rich subregion. Determine the impact of the project on jobs/housing policies in the SCAG Growth Management Chapter of the Regional Comprehensive Plan.	Section 4.2, Socioeconomics

	Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1	7	*Southern California Association of Governments (Continued)*	B. Describe how Transportation Demand Management measures will be incorporated into the project and how they will be implemented, administered and funded.	Section 4.12, Traffic/Circulation
			C. Provide the expected impact and description of vehicle miles traveled and vehicle trips reduction targets for each of the TDM measures.	The EIS/EIR assesses the effects of a conceptual plan rather than a specific development project. TDM measures and reduction targets will be employed on a project-by-project basis.
2	8	City of Irvine	A. Request for extension of NOI/NOP period to August 10, 1994.	The City of Irvine was given the requested extension.
3	9	City of Santa Ana	A. Describe the types of planned facilities for alternative transportation modes and the relationship of the facilities to those in Santa Ana.	Section 4.12, Traffic/Circulation
			B. The City of Santa Ana anticipates no significant impact to the existing uses along Redhill Ave.	Section 4.12, Traffic/Circulation
			C. The City of Santa Ana supports the open space provided in Specific Plan/Reuse Plan.	Comment noted.
			D. Indicate if adjacent cities are anticipated to participate in the funding of new infrastructure, and if so, by what methodology will cost shares be allocated.	Section 4.3, Utilities; 4.4, Public Services and Facilities, 4.12, Traffic/Circulation
			E. The increased vehicular trips caused by the project may increase noise levels in some parts of Santa Ana. Please indicate what locations in Santa Ana will be included in the noise analysis.	Section 4.14, Noise
4	10	City of Costa Mesa Development Services Department	A. The City has no specific comments at this time.	Comment noted.
5	11	North Irvine Villages Association	A. From a land use perspective, address the suitability of determining the uses of the Core Area in the future.	Section 4.7, Land Use, and Section 4.5 Aesthetics
			B. Planning Area 20 has no existing structures - correct the land use table. The planned development density conflicts with previous plans and discussions.	The table is not provided in this EIS/EIR.
			C. Address impacts to the regional circulation system. To reduce the impact, utilize a wide variety of mass transit options including commuter rail service.	Section 4.12, Traffic/Circulation

	Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1	*11*	*North Irvine Villages Association (Continued)*	D. "Yes" should be checked in the following areas on the Initial Study checklist, indicating that a significant impact will occur: Earth, Water, Noise, Transportation, Public Services, Utilities and Cultural Resources.	Section 4.9, Soils and Geology; Section 4.14, Noise; Section 4.12, Traffic/Circulation; Section 4.4, Public Services; Section 4.3, Utilities; and Section 4.6, Cultural Resources
2	12	Southern California Edison Company	A. Southern California Edison Company can serve the proposed development.	Section 4.3, Utilities
			B. Development activities may require the relocation, reconstruction or extension of Edison's existing distribution system. The improvements will be performed by Edison in accordance to the current Tariff Schedules.	Section 4.3, Utilities
3	13	Southern California Edison Company	A. The electric loads of the project are within the parameters of Edison's projected level of service.	Section 4.3, Utilities
			B. The extent of impact, need for additional facilities, relocation of facilities and mitigation cannot be fully determined until final engineering plans are available.	Section 4.3, Utilities
			C. Coordination with Edison will ensure that the existing utility system is protected and expanded without significant service disruptions.	Section 4.3, Utilities
4	14	Dimension Cable Services	A. Depending on the redevelopment of the base, recently-installed cable service, including fiber, may have to be removed.	Section 4.3, Utilities
5	15	The Irvine Company	A. Address short- and long-term needs for utilities and public services, including funding requirements and responsibilities.	Section 4.4, Public Services and Facilities; Section 4.3, Utilities
			B. Examine the compatibility of the project with existing long-range plans (including physical, aesthetic, financial, land use and market factors).	Section 4.1, Land Use and Section 4.5, Aesthetics
			C. Discuss hazardous waste clean-up, including off-site impacts of the wastes and/or clean-up efforts.	Section 4.11, Hazardous Wastes, Substances and Materials
			D. Address drainage issues related to Peters Canyon Wash. Determine whether planned improvements can accommodate the planned reuse development and who is financially responsible for constructing the improvement between Irvine Center Dr and Barranca Pkwy.	Section 4.10, Water Resources

	Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1	*15*	*The Irvine Company (Continued)*	E. Assess 2010 and 2000 traffic impacts, and required improvements (including feasibility and funding responsibility). To what extent will previously planned improvements mitigate the traffic impacts?	Section 4.12, Traffic/Circulation
			F. Assess a broad range of traffic mitigation measures, including transportation demand management, phasing limitations, transit options, etc.	Section 4.12, Traffic/Circulation
			G. Consider the proposed Jamboree/ Edinger grade separations in all land use proposals and alternatives.	Section 4.12, Traffic/Circulation; Section 4.14, Noise
			H. Assess the potential for aligning regional trails along Peters Canyon Wash through the base.	Section 4.4, Public Services and Facilities
			I. Provide a fiscal impact analysis, (as part of, or in conjunction with, the environmental analysis).	A fiscal impact analysis has been prepared as part of the reuse planning process and is available for review at the City of Tustin offices.
2	16	Tustin Unified School District	A. Case law requires that impacts to schools be assessed through the CEQA process.	Section 4.4, Public Services and Facilities
			B. The Draft EIS/EIR need to address the methods and means to finance the construction of required schools.	Section 4.4, Public Services and Facilities
			C. The district does not have facilities to serve students generated by the project, or to administer the required schools.	Section 4.4, Public Services and Facilities
			D. The district provides generation factors to project the number of anticipated students.	Section 4.4, Public Services and Facilities
			E. The present statutory school fee will not provide sufficient funds to construct the required school facilities.	Section 4.4, Public Services and Facilities
3	17	Santa Ana Unified School District	A. A portion of the project site is located within the SAUSD. In the EIS/EIR, assess the potential for impacts to SAUSD from the planned commercial and industrial uses.	Section 4.4, Public Services and Facilities
			B. Assess the potential impact on the supply of affordable housing in Santa Ana.	Section 4.2, Socioeconomics
			C. Correctly represent SAUSD's request for 75 acres, not 100 acres and revise the way the information about SAUSD in the Environmental Setting Report is referenced.	Section 2.2.2, Reuse Alternatives, and Section 4.4, Public Services and Facilities

	Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1	18	Irvine Unified School District	A. A portion of the project site is located within the IUSD.	Section 4.4, Public Services and Facilities
			B. Assess potential impacts to IUSD, without the conveyance of a site for a new school on the project site, and identify appropriate mitigation measures.	Section 4.4, Public Services and Facilities
			C. The EIS/EIR needs to address the methods and means to finance the construction of necessary school facilities and site acquisition costs. The estimated cost of the necessary facilities will exceed the statutory school fee.	Section 4.4, Public Services and Facilities
2	19	Transportation Corridor Agencies	A. Consider the potential impacts to the proposed uses from the West Leg of the Eastern Transportation Corridor (ETC) as it transitions to Jamboree Road in the vicinity of the base, including air quality, noise and aesthetic impacts.	Section 4.12, Traffic/Circulation; Section 4.5, Aesthetics
			B. The traffic analysis should be consistent with the traffic modeling efforts conducted for the ETC environmental documentation.	Section 4.12, Traffic/Circulation
			C. Project-generated traffic has not been incorporated into any of the regional or subregional traffic models used to determine the demand along the ETC West Leg.	Section 4.12, Traffic/Circulation
			D. Consider the potential right-of-way requirements for implementation of future interchange improvements at Jamboree/ Edinger and Jamboree/Barranca Pkwy.	Section 2.4, Detailed Description of Reuse Alternatives
3	20	University of California, Irvine	A. No comment at this time.	Comment noted.
4	21	City of Tustin Engineering Division	A. A new on-site roadway system with connections to the existing arterial system must be developed.	Section 4.12, Traffic/Circulation
			B. The EIS/EIR traffic analysis needs to thoroughly analyze impacts to the city's and adjacent jurisdictional circulation systems, and to identify appropriate mitigation measures.	Section 4.12, Traffic/Circulation
			C. The proposed project circulation system appears to accommodate the most efficient land use plan and buildout scenario. Accordingly, the traffic study should address the ability of the on-site circulation system to adequately facilitate traffic demands and movements in the study area.	Section 4.12, Traffic/Circulation

	Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1	*21*	*City of Tustin Engineering Division (Continued)*	D. The traffic analysis must be completed according to Measure M requirements, and consider the development of facilities for alternative transportation modes.	Section 4.12, Traffic/Circulation
2	22	City of Tustin Finance Department	A. No comment at this time.	Comment noted.
3	23	City of Tustin Community Services Department	A. The Specific Plan/Reuse Plan adequately addresses the recreational needs of the area through a combination of proposed public and commercial recreational facilities. It appears that no adverse impacts will occur to the Department's area of concern.	Section 4.4, Public Services and Facilities
4	24	Orange County Local Agency Formation Commission	A. LAFCO is not a Responsible Agency for the project.	Comment noted.
5	25	City of Irvine Community Development Department	A. The City of Irvine is a Responsible Agency.	Comment noted.
			B. The EIS/EIR should include a figure showing the 30-acre "out-parcel" and adjacent land uses.	Section 4.1, Land Use, and Figure 1.4, Existing Facilities
			C. The EIS/EIR should include an exhibit identifying the jurisdictional boundaries and land uses (including the approved single room occupancy hotel) in and around the base.	Figure 1.3, Reuse Plan Area; and Figure 3.1-1, Existing Surrounding Land Uses
			D. Provide a matrix identifying the existing General Plan and proposed land uses.	Section 4.1, Land Use
			E. The study area for cumulative impacts should include all of the City of Irvine west of Culver Drive, as well the Irvine Business Complex.	Section 5.1, Cumulative Impact Study Area
			F. Define "sustainable environment" and implementation of the concept.	This term is not utilized in this EIS/EIR.
			G. Village Housing (Neighborhood B) description - include that a limited number of McKinney units will be accommodated.	This topic is not addressed in this EIS/EIR.
			H. Residential Core (Neighborhood G) description - indicate that the proposed development will be compatible with the density, type and scale of established residential neighborhoods in Tustin and Irvine. Define "visitor-serving uses".	Section 4.1, Land Use/Aesthetics

Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
25	*City of Irvine Community Development Department (Continued)*	I. Planning Area 20 description - the range of densities (16-45 units/acre) is too broad. The higher end densities will be incompatible with the adjacent medium density Irvine neighborhoods. A maximum of 25 units/acre is recommended.	Section 2.4, Detailed Description of Reuse Alternatives.
		J. Community Core (Neighborhood D) description - additional detail must be provided to conduct environmental analysis, particularly air quality and traffic. Market absorption and cleanup should not be used to justify deferring land use planning for the area.	Section 4.13, Air Quality and Section 4.12, Traffic/Circulation have been completed based on assumptions discussed in the text.
		K. Wholesale Commercial District (Neighborhood F) description - refer to the Tustin Ranch Rd/Barranca Pkwy intersection as the Von Karman Ave/Barranca Pkwy intersection.	Section 7.1, Description of Implementing Actions
		L. Why are more residential uses a consequence of the Arterial Grid Pattern/High Residential/No Core Area alternative.	The increased residential uses are independent of the circulation system. The increased residential uses (and corresponding decreased non-residential uses) are purposely varied as part of the definition of the alternative.
		M. Why is the Ideal Arterial Loop Pattern alternative land use pattern less efficient and why are more non-residential uses a consequence?	Section 4.12, Traffic/Circulation. The increased non-residential uses are independent of the circulation system. The increased non-residential use (and corresponding decreased residential uses) are purposely varied as part of the definition of the alternative.
		O. Sidewalks, trails and landscaping along Harvard Ave and Barranca Pkwy should be provided to be consistent with the Westpark and Westpark II master plans. Edge treatment should be coordinated with the Irvine Company's standing offer to provide walls.	Section 7.2.4, Aesthetics
		P. Address the phasing of proposed and interim land uses.	Section 2.4, Detailed Description of Reuse Alternatives
		Q. Specify the types of uses permitted or conditionally permitted in the "Commercial" and "Mixed Use" categories.	Section 2.4, Detailed Description of Reuse Alternatives
		R. Discuss the transitional housing for individuals in the barracks in addition to the family transitional housing.	Section 2.4, Detailed Description of Reuse Alternatives

Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
25	*City of Irvine Community Development Department (Continued)*	S. The EIS/EIR should require traffic mitigation measures to be coordinated with affected jurisdictions and improvements to be provided and implemented in adjacent jurisdictions as necessary to offset impacts.	Section 4.12, Traffic/Circulation
		T. Include a summary of the traffic study methodology in the EIS/EIR including trip rates, transportation model and performance criteria.	Section 4.12, Traffic/Circulation
		U. The cumulative traffic impact analysis should include the Lower Peters Canyon Specific Plan, presently being processed by the County.	Section 4.12, Traffic/Circulation
		V. A substantial portion of the project trips will utilize Irvine's road network. The EIS/EIR should address the project's "fair share" contribution to the construction of the Irvine IBC roadway network, as well as financial participation in roadway maintenance and rehabilitation costs. The project will likely require reconsideration of the MOU between Tustin and Irvine.	Mitigation for traffic impacts is addressed in Section 4.12, Traffic/Circulation.
		W. Address the phasing and funding of the Peters Canyon riding and hiking trails, and the Class I trail along Peters Canyon and Barranca Pkwy, and how trails will be integrated into the on-site circulation plan. Consider outside funding of the regional trails.	Section 4.4, Public Services and Facilities; Section 4.12, Traffic/Circulation
		X. Design Tustin Ranch Rd to maximum capacity. Include full interchanges at Tustin Ranch Rd, Redhill Ave, and Jamboree Rd at Irvine Center Dr.	Section 4.12, Traffic/Circulation
		Y. Ensure that the traffic model accurately reflects the travel speeds and distances resulting from the proposed Warner Ave and Tustin Ranch Rd alignments.	Section 4.12, Traffic/Circulation
		Z. Assess access impacts upon the existing and planned roadway network.	Section 4.12, Traffic/Circulation
		AA. Identify the project contribution towards the grade-separated interchanges at Edinger Ave and Barranca Pkwy. Address revisions to the General Plan designation for Jamboree Road from Expressway to Major Arterial Highway.	Section 4.12, Traffic/Circulation
		BB. Evaluate an appropriate transition from a Smart Street to a major roadway designation along major links between freeways.	Section 4.12, Traffic/Circulation

Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
25	*City of Irvine Community Development Department (Continued)*	CC. Wherever a modified right-of-way is proposed, identify the assumptions for determining roadway capacity, precisely define "modified" or "augmented" if used, and identify the percent of improvement or reduction in capacity due to the modifications.	Section 4.12, Traffic/Circulation
		DD. Assume continuation of Harvard Avenue as a 4-lane Secondary Arterial for interim and buildout conditions.	Section 4.12, Traffic/Circulation
		EE. Please note that the Inter-City Public Transit Corridor extends along Edinger Ave and Intra-City Public Transit Corridors extend along Jamboree Road and Harvard Ave.	Section 4.12, Traffic/Circulation
		FF. Immediately identify the location of the commuter rail station before any further land use commitments can be made.	Section 4.12, Traffic/Circulation
		GG. Accommodations should be made for commuter shuttles to accommodate rail station passengers.	Section 4.12, Traffic/Circulation
		HH. Sufficient right-of-way must be provided along Edinger Ave to provide for both a full Major Arterial Highway and a second mainline track adjacent to the roadway.	Section 4.12, Traffic/Circulation
		II. The environmental and financial analyses for public services should address the residential units in Irvine separately. The analyses should identify which roadways, utility extensions and recreation facilities will be publicly maintained, and the cost of roadway improvements, utility extension and park improvements to service the Irvine portion of the base.	The financial analysis is not included in the EIS/EIR and is not required in CEQA.
		JJ. Address the landscaping, irrigation, sustainability and runoff related to the proposed golf course and identify whether the course will be privately or publicly operated.	Section 4.10, Water Resources; Section 2.4, Detailed Description of Reuse Alternatives
		KK. Address the liquefaction potential.	Section 4.9, Soils and Geology
		LL. Perform the air quality analysis according to the SCAQMD CEQA Air Quality Handbook, the 1994 Draft AQMP and Federal Implementation Plan.	Section 4.13, Air Quality
		MM. Every effort should be made to maintain the LTA hangars, including consideration of minor modifications to the proposed project and alternatives.	Section 4.6, Paleontology and Cultural Resources

Letter No.	Agency/Organization	Comment	Where Addressed in the EIS/EIR
1 26	South Coast Air Quality Management District	Address short-term, long-term, and SCAQMD-related permits of the MCAS Tustin reuse plan.	Section 4.13, Air Quality

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APPENDIX D
SUMMARY OF REVISIONS MADE TO THE PREVIOUSLY CIRCULATED DRAFT EIS/EIR IN RESPONSE TO PUBLIC COMMENTS

APPENDIX D
SUMMARY OF REVISIONS TO THE PREVIOUSLY CIRCULATED DRAFT EIS/EIR IN RESPONSE TO PUBLIC COMMENTS

Per the implementing guidelines of the California Environmental Quality Act (CEQA), when an entire EIR is re-circulated, the lead agency "need not respond to those comments received during the earlier circulation period" (Cal. Code Regs., Title 14, §§ 15088.5 (f)(1)), but the lead agency shall "in the revised EIR, or by an attachment to the revised EIR, summarize the revisions made to the previously circulated draft EIR" (Cal. Code Regs., Title. 14, §§ 15088.5 (2)(g)). The federal National Environmental Policy Act (NEPA) has no similar guidance regarding re-circulation. Consistent with state law and implementing regulations, a summary of revisions to the initial Draft EIS/EIR is provided in this appendix. Those revisions were made in response to public comments on the initial draft EIS/EIR. Interested parties are requested to submit new comments on this document.

In general, comments on the initial Draft EIS/EIR (circulated in March 1998) indicated the need to expand the traffic circulation study area and to provide analyses for the issues of regional growth, schools, noise, biology, water quality and quantity, utilities, public services, and hazardous materials. Below is a breakdown, by chapter and by each of the 14 issue areas, identifying the revisions made in the re-circulated EIS/EIR.

CHAPTER 1 – PURPOSE AND NEED

The structure of Chapter 1 differs from that contained in the initial EIS/EIR. For example, in the initial EIS/EIR, the project's purpose and need was stated for both disposal and reuse actions, whereas in re-circulated EIS/EIR, the purpose and need is listed separately under federal and local headings. Also, terms used in the document and acronyms no longer appear in Section 1, but in an appendix (Appendix A - Glossary/Index) and a separate section (List of Acronyms). Predisposal and disposal process requirements are discussed in more detail in the re-circulated EIS/EIR, and more background information on the local jurisdictions involved in the project has been provided. Finally, there is an expanded discussion of the purpose of the document for federal decision-makers (NEPA) and state and local decision-makers (CEQA).

CHAPTER 2 – ALTERNATIVES CONSIDERED

In the re-circulated document, Section 2 includes a revised numbering system for the alternatives. In the initial document, the Proposed Action was defined as implementation of the LRA's Reuse Plan; Alternative 1 was the Arterial Grid Pattern/No Core/High Residential Alternative; Alternative 2 was the Arterial Loop Pattern/Low Residential Alternative; and Alternative 3 was the No Action Alternative. In this Draft EIS/EIR, implementation of the LRA Reuse Alternative is identified as Alternative 1. Alternative 2 is the Arterial Grid Pattern/No Core/High Residential, and Alternative 3 is Arterial Loop Pattern/Low Residential. While the numbering system has been revised, the alternatives have remained identical to those described in the initial Draft EIS/EIR. A key difference between the two documents in Chapter 2 is the description of the LRA Reuse Plan and Specific Plan. Detailed description of the Specific Plan has been removed from Chapter 2 into Chapter 7. Chapter 7 is a new chapter which provides CEQA-only analysis of the Implementing Actions associated with the LRA Reuse Alternative.

CHAPTER 3 – AFFECTED ENVIRONMENT AND CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

For each of the 14 issue areas discussed below, the analysis was reconsidered in light of the identified "baseline." Baseline conditions are those existing conditions occurring on the military base about the time of closure and reflect full operation of the facility. Impacts, then, are derived by an analysis of the change to the environment between the baseline condition and future under each alternative. The change between reuse development and No Action is addressed as appropriate.

Land Use

The land use section incorporates changes requested from comments on the initial Draft EIS/EIR as well as updates the description of existing land use, general plan designations, and zoning categories. Information concerning Browning/GCA corridors and land use restrictions due to John Wayne International Airport has been moved to this chapter from the Aircraft Operations section of the initial Draft EIS/EIR. That section has been deleted in this document. Discussions of specific on-base land uses and the community setting has been moved to Chapter 1. The analysis of aesthetics/visual quality has been expanded into a separate section. The graphics have been modified and updated to more clearly present the information.

Socioeconomics

The socioeconomics section has been updated and expanded. The analogous section of the initial Draft EIS/EIR focused on population and housing indicators, and utilized a five-city "market area" as the study area. The new section on socioeconomics provides data for three geographic areas, corresponding to where different types of socioeconomic impacts may be anticipated: the census tracts contiguous with the reuse plan area; the cities contiguous with and surrounding the reuse plan area (Tustin, Irvine, and Santa Ana); and, Orange County. Graphics were added to show the location of contiguous census tracts and the local jurisdictions. Additional data beyond those contained in the initial Draft EIS/EIR is provided on demographic characteristics, housing units and vacancy rates, total employment and unemployment rates, jobs to housing ratio, and general income indicators for each of the geographic areas considered. Projections for all variables for each geographic area are provided for the years 2000, 2005, 2010, and 2020.

Utilities

The section on utilities in the revised Draft EIS/EIR is updated to include most recent information for infrastructure planning. The prior utility section did not quantify the amount of utilities used for all the topics addressed, while the new one does. The subsection on potable water features corrected specifications regarding the size and location of water lines in and around the base station. The revised draft EIS/EIR also utilizes potable and non-potable water generation rates from IRWD's 90 Percent *Draft Subarea Management Plan* (SAMP). Standard conservation measures are provided in the text, references to IRWD ownership of the reclaimed water line have been deleted, and OCSD and IRWD responsibilities for sanitary sewers are clarified. The drainage subsection provides updated information concerning how changes in the conveyance runoff from certain parcels would impact the drainage system. The subsection on solid waste has been corrected with regard to landfill disposal sites, siting information and the issue of constraints, and Source Reduction and Recycling Elements information.

Public Services and Facilities

The public services and facilities section incorporates new and corrected information provided from comments on the initial Draft EIS/EIR. Specific changes to the language regarding fire services requested from the Orange County Fire Authority is provided. Data regarding existing conditions for police services was updated and specific demand generation for the three reuse alternatives was estimated. The schools subsection has been updated to reflect current enrollment and student

generation and to address comments from the Santa Ana Unified School District on the earlier circulated Draft EIS/EIR. The net difference between each Alternative and the baseline under military control is identified for each school district. A graphic was added to show existing parks in the vicinity of the reuse plan area and more current information regarding parkland in Tustin was incorporated. The library subsection has been updated to include more information regarding libraries and to include information requested from comments. Information regarding the County of Orange's Bikeway Plan, Commuter Bikeway Strategic Plan, and Riding and Hiking Trails and Off-Road Bikeways was added as well.

Aesthetics

Aesthetics bas been moved from the Land Use section to its own separate section. The discussion has been expanded to include a more detailed analysis of the on-site and surrounding viewshed for both baseline conditions and for the alternative scenarios. Potential sensitive viewers have been identified and key views from varying distances have been described. Photographs of existing representative buildings (in addition to the blimp hangars) have been included. The conclusion in the initial Draft EIS/EIR that on-site development in general, and the demolition of the hangars specifically, would have a beneficial visual effect has been revised. The analysis now concludes that destruction of one blimp hangar would be noticeable because the hangars are an important local landmark, but not significant. The loss of two hangars, bowever, would be significant because all traces of the landmark would be destroyed.

Historic and Archaeological Resources

This section has been updated with more clear descriptions of the resources and more emphasis on the historic districts as a whole rather than just the blimp hangars. In this revised EIS/EIR, the section makes clear that the undertaking would eliminate most of the historic districts, causing a significant impact. Some of the unsubstantiated information (such as the board-feet used to construct the bangars) has been removed from this section. This section also addresses the need for Native American involvement should any prehistoric sites be discovered in the future. Finally, the four-acre privately owned parcel is explicitly addressed.

Biological Resources

Information about biological resources within the reuse plan area has been updated based on additional focused surveys conducted in 1999. The DON surveyed for the burrowing owl and a

focused survey was conducted for the southwestern pond turtle by Tierra Madre Consultants. Information about wetlands within the reuse planning area bas been updated based on a wetlands delineation study conducted by DON in 1999 to determine extent and quality of wetlands habitat and exact size of jurisdictional wetlands. Current status of federal permits for development affecting jurisdictional wetlands has been described. Mitigation measures for biological resources have becn updated to reflect current information for relocating the pond turtle.

Agricultural Resources

Information about the types and amount of Farmland within the reuse plan area has been updated based on consultations with the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) and the California Department of Conservation, Division of Land Resource Protection. A farmland conversion impact rating form has been filed with the NRCS and a copy included in the appendices of this EIS/EIR. A map illustrating the location, extent, and types of Farmland has been included. Additional mitigation measures and their feasibility have been evaluated including those to replace Farmland off site and/or to protect existing Farmland within the county area.

Soils and Geology

The soils and geology section has been considerably updated with a new table, citations for the material, and clearer descriptions of some of the geologic features and phenomena. Tbe discussion of the number of earthquake faults has been narrowed from 5 to 2 in order to focus only on the faults capable of affecting the base. A newly improved Regional Seismicity Map has been added, which is mucb easier to understand than its predecessor. In order to make the Richter Scale clearer to the reader, a Modified Mercalli Seismic Intensity Scale Table was added which defines Richter Scale readings in terms of the Mercalli Scale and then gives a realistic description of the intensity felt during a quake of a specified magnitude. The new table also helps to clarify Table 3.9-1 on the Summary Design of Seismic Parameters. Parts of the section were also reorganized so that the discussion more clearly reflects the timing of events in an actual seismic or geologic event. Additional language has been added to the use of the State Uniform Building Code.

Water Resources

This section has been expanded to include a discussion of the impacts of the alternatives within the context of the Water Quality Control Plan for the Santa An River Basin and the Total Maximum Daily

Load (TMDL) permitted in Lower San Diego Creek and Newport Bay. New information and a graphic concerning the Orange County Groundwater Basin has also been included. Clarification of specific information and updated groundwater pumping data was provided. New mitigation measures to reduce the impacts of reuse on surface and groundwater to less-than-significant levels has also been added.

Hazardous Wastes, Snbstances, and Materials

This section has been updated by information presented in the most current hazardous materials and remediation documents for MCAS Tustin, including the *Base Realignment and Closure Business Plan for Marine Corps Air Facility, Tustin, California* (DON 1998) and the *Draft Basewide Environmental Baseline Survey, Marine Corps Air Facility, Tustin, California* (DON 1999). Information presented in these documents was verified or updated as necessary by the BRAC Cleanup Team (BCT) members for MCAS Tustin.

Traffic/Circulation

This section is completely revised from the initial Draft EIS/EIR. A new traffic study was completed in response to comments received. The study area was enlarged substantially. Traffic modeling was revised to utilize OCTAM 2.8 instead of OCTAM 2.0. This updated version of OCTAM uses demographic data from OCP-96 Modified instead of OCP-88. Furthermore, the Central County Traffic Model (CCTM) in OCTAM 2.8 incorporates an allowance for home-based work trips which may not respond to transportation demand management (TDM) requirements of local and regional plans. No additional trip reduction as been assumed in the revised traffic analysis. The "baseline" concept was applied to all future conditions (all three reuse alternatives as well as No Action). This is typical of all base closure analyses where the impacts associated with full operation of the base, in this case traffic volumes in 1993, are deducted from traffic associated with future reuse and No Action alternatives. Thus, the impact analysis focuses on the net change between future conditions and baseline. In conformance with the County of Orange Congestion Management Plan, an interim year analysis was completed assuming ~~phased~~ partial build-out of each reuse alternative at 2005, in conjunction with all committed roadway improvements. A year 2020 analysis was provided as well, under ~~both~~ the no-toll~~/toll~~ condition. Finally, a qualitative post-2020 analysis is provided assuming the no-toll condition. Given the substantial changes in the demographic data and the more recent computer model, results at specific locations may be different between the two traffic reports. The differences result, in part, because the interaction between reuse traffic and surrounding land uses would result in a "redistribution" effect per the newer model. Traffic volumes may increase or decrease at locations throughout the study area.

Air Quality

Major changes were made in this section when compared to the initial Draft EIS/EIR. The following information was added:

- new ambient data from SCAQMD
- discussion on general conformity
- discussion on air toxics
- discussion on Irvine and Tustin TDM
- attainment status discussion
- calculation of baseline emissions
- requirements for school siting
- a climate and meteorology section

Also, new traffic and phasing data was analyzed, and the threshold of significance was changed. Operational emissions were calculated based on new phasing and traffic, and the air toxics analysis was expanded.

Construction emissions were calculated based on new phasing and traffic assumptions, and the construction section was revised. A "simultaneous construction activity" scenario was developed to account for potential overlap between discrete construction activities (e.g., grading, site preparation).

For the mitigation measures section, SCAQMD Rule 1403 mitigation measure was added. A new mitigation measure concerning the use of low-VOC content architectural coatings was also added.

Noise

This section has been revised on several fronts. All on- and off-site roadways discussed in the traffic section were also analyzed in the noise section, and the noise analysis was updated to reflect current traffic data. Also, the fleet vehicle mix and day/night assumptions used by Orange County were incorporated into noise modeling. The revised text clarifies that development adjacent to Barranca Parkway and Irvine Center Drive east of Jamboree Road is already exposed to noise levels in excess of 65 dB CNEL.

The discussion regarding discrepancies between the Tustin General Plan Nosie Element Technical Memorandum and John Wayne Airport Environs Land Use Plan was removed. Confirmation was received that the Tustin General Plan Noise Element Technical Memorandum erroneously showed a 65 dB CNEL noise contour over the southeastern corner of the site.

CHAPTER 5 – CUMULATIVE PROJECTS AND IMPACTS

Chapter 5 in this revised EIS/EIR is a discussion of cumulative impacts by issue area. Previously, all cumulative impacts were addressed within the subsection of each issue area.

CHAPTER 6 – OTHER CONSIDERATIONS REQUIRED BY NEPA/CEQA

The primary change to the section is in the topic of growth-inducement. The previous analysis focused on population, housing, and employment changes associated with civilian reuse. In this revised Draft EIS/EIR this evaluation is provided in socioeconomics. Growth-inducement is focused on the potential for growth associated with the removal of all operation easements that would allow residential development where previously it could not occur.

CHAPTER 7 – LRA REUSE ALTERNATIVE IMPLEMENTATION ACTION

This is a new chapter focusing on the CEQA only analysis of the various procedural actions that would implement the LRA Reuse Alternative. These include General Plan amendments and amendments to the zoning ordinances of the cities of Tustin and Irvine, adoption of a Specific Plan, amendment to the Orange County Master Plan of Arterial Highways, final designation of the site as a LAMBRA, and as a Redevelopment Area for purposes of tax-increment financing.

CHAPTER 8 – CONSULTATION AND COORDINATION

This chapter is revised to reflect the general categories of comments received on the initial Draft EIS/EIR.

CHAPTER 9 – LIST OF PREPARERS AND CONTRIBUTORS

All consultants and primary staff of the team that prepared the revised EIS/EIR are listed.

CHAPTER 10 – REFERENCES AND PERSONS CONTACTED

The references format is changed completely. Instead of a numbering system, references are listed alphabetically by author, agency that paid for the report, or agency that employed staff who provided information.

APPENDIX E
SUPPORTING CORRESPONDENCE/INFORMATION

Confirmation of Lead Agency,
letter from City of Irvine to City of Tustin

Assumptions Utilized for
Employment Generation Calculations

Generation Calculation Tables for Potable Water,
Non-Potable Water, Sewage, Natural Gas, and Solid Waste

Agreements Between City of Tustin and
Tustin Unified School District and Irvine Unified School District

Air Quality Calculation Assumptions

Confirmation of Lead Agency, letter from City of Irvine to City of Tustin

CITY OF IRVINE

Community Development Department

City of Irvine, One Civic Center Plaza, P.O. Box 19575, Irvine, California 92713 (714) 724-6000

RECEIVED
JUN 7 1994
ADMINISTRATION

May 27, 1994

Mr. William A. Huston, City Manager
City of Tustin
300 Centennial Way
Tustin, CA 92680

SUBJECT: MCAS, TUSTIN REUSE PLAN EIR/EIS

Dear Mr. ~~Huston~~ Bill:

This is to confirm that the City of Irvine supports the City of Tustin acting as lead agency for preparation of the reuse plan and environmental documentation for MCAS, Tustin, including that portion within the City of Irvine. We have been successful with our existing cooperative arrangement for this reuse planning effort. Therefore, I anticipate that our successful cooperation will continue if the City of Tustin and the Base Closure Task Force remain supportive of the City of Irvine's proposed land uses for the Irvine portion of the base.

Thank you for your assistance throughout this complex planning process. I am hopeful that we can conclude with an economically viable plan which will benefit both communities.

Sincerely,

PAUL BRADY, JR.
City Manager

cc: Christine Shingleton, Assistant City Manager, City of Tustin
Robert C. Johnson, Director of Community Development
Peter Hersh, Manager of Land Use Policy Programs
Mark Tomich, Principal Planner

Assumptions Utilized for Employment Generation Calculations

ASSUMPTIONS UTILIZED FOR EMPLOYMENT GENERATION CALCULATIONS

The following is the derivation of the employment generation calculations for the three MCAS Tustin disposition alternatives:

Direct Employment Calculations:

Source: Southern California Association of Governments (SCAG), Forecasting Division, primary research prepared by Cordova Associates. Direct employment is calculated based on jobs per square feet of building improvement.

Indirect and Induced Employment Calculations:

Source: Orange County Job Multiplies, California Trade & Commerce Agency using IMPLAN System/U.S. Department of Commerce (RIMS II 1992). Indirect and induced employment is calculated on the number of direct employment jobs generated with the indirect employment reflecting support jobs, vendors, material men, etc. and the induced employment reflecting jobs generated from the additional spending in the economy.

Construction Employment Calculations:

Source: Construction Industry Research Board (CIRB), 1996 using U.S. Department of Commerce (RIMS II 1992). Construction employment includes all temporary direct, indirect and induced employment calculated as person years of employment per $1 million of the estimated cost of the building improvements.

Misc. Public/Institutional Direct Employment:

Direct employment at public/institutional uses including schools, community college, etc. is based one estimates provides by the individual users.

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Generation Calculation Tables for Potable Water, Non-Potable Water, Sewage, Natural Gas, and Solid Waste

Table 1
Total Potable Water Demand - Alternative 1

Land Use Type	Units (DU or Acres)	Demand Factor (GPD/Unit)	Demand (GPD)
Low Density (1-7 DU/Ac.)	1,165 DU	455	530,075
Medium Density Residential (8-15 DU/Ac.)	1,023 DU	300	306,900
Medium High Density Residential (16-25 DU/Ac.)	588 DU	220	129,360
Golf Village Low Density Residential (1-7 DU/Ac.)	256 DU	455	116,480
Golf Village Medium Density Residential (8-15 DU/Ac.)	678 DU	300	203,400
Community Core (16-25 DU/Ac.)	891 DU	220	196,020
Transitional/Emergency Housing	5.1 Ac.	2,000	10,200
Commercial/Business	265.2 Ac.	2,000	530,400
Commercial	55.3 Ac.	2,000	110,600
Village Services	20.7 Ac.	2,000	41,400
Commercial/Golf Village (Hotel)	12.4 Ac.	3,500	43,400
Golf Course	159.3 Ac.	0	0
Community Core*	189.6 Ac.	2,000	379,200
Learning Village	128.0 Ac.	2,000	256,000
Community Park	24.1 Ac.	0	0
Urban Regional Park	84.5 Ac.	0	0
Arterial Roadways	158.4 Ac.	0	0
Drainage Facilities	28.5	0	0
Total Gallons Per Day			2,853,435
Total Cubic Feet per Second			4.41
Total Peak Hour Factor			2.35
Total Peak Hour Cubic Feet per Second			10.36

* Community Core does not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.
DU = dwelling units; Ac. = acres; GPD = gallons per day

Source: *Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan* (City of Tustin 1999).

Table 2
Total Non-Potable Water Demand - Alternative 1

Land Use Type	Units (Acres)	Demand Factor (GPD/Unit)	Demand (GPD)
Low Density (1-7 DU/Ac.)	181.3	535.60	97,104.28
Medium Density Residential (8-15 DU/Ac.)	125.1	892.74	111,681.77
Medium-High Density Residential (16-25 DU/Ac.)	29.4	892.74	26,246.56
Golf Village Low Density Residential (1-7 DU/Ac.)	48.5	535.60	25,976.60
Golf Village Medium Residential (8-15 DU/Ac.)	55.2	892.74	49,279.25
Community Core (16-25 DU/Ac.)	35.6	892.74	31,781.54
Transitional/Emergency Housing	5.1	892.74	4,552.97
Commercial/Business	265.2	714.19	189,403.19
Commercial	55.3	714.19	39,494.71
Village Services	20.7	714.19	14,783.73
Commercial/Golf Village (Hotel)	12.4	714.19	8,855.96
Golf Course	159.3	3,124.60	497,748.78
Community Core*	189.6	714.19	135,410.42
Learning Village	128.0	714.19	91,416.32
Community Park	24.1	3,570.97	86,060.38
Urban Regional Park	84.5	3,124.60	264,028.70
Arterial Roadways	158.4	714.19	113,127.70
Drainage Facilities	28.5	0.00	0.00
Total Gallons Per Day			1,786,952.86
Total Cubic Feet per Second			2.77
Total Peak Hour Factor			8.80
Total Peak Hour Cubic Feet per Second			24.38

* Community Core does not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.
GPD = gallons per day; DU = dwelling units

Source: *Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan* (City of Tustin 1999).

Table 3
Total Sewage Flows - Alternative 1

Land Use Type	Unit (Acres or DU or Bldg. Sq. Ft.)	Flow Coefficient (GPUPD)	Demand (GPD)
Low Density (1-7 DU/Acre)	1,165 DU	298	347,170
Medium Density Residential (1-7 DU/Acre)	1,023 DU	199	203,577
Medium-High Density Residential (8-15 DU/Acre)	588 DU	164	96,432
Golf Village Low Density Residential (1-7 DU/Acre)	256 DU	298	76,288
Golf Village Medium Residential (8-15 DU/Acre)	678 DU	199	134,922
Community Core Residential (16-25 DU/Acre)	891 DU	164	146,124
Transitional/Emergency Housing	133,294 Sq. Ft.	0.2	26,659
Commercial/Business	4,305,251 Sq. Ft.	0.2	861,050
Commercial	713,412 Sq. Ft.	0.2	142,682
Village Services	315,592 Sq. Ft.	0.01	3,156
Commercial/Golf Village (Hotel)	280,526 Sq. Ft.	0.2	56,105
Golf Course	159.3 Ac.	100	15,930
Community Core*	3,630,726 Sq. Ft	0.01	36,307
Learning Village	1,412,651 Sq. Ft.	0.2	282,530
Community Park	40,531 Sq. Ft.	0.2	8,106
Urban Regional Park	574,992 Sq. Ft.	0.2	114,998
Arterial Roadways	N/A	N/A	0
Drainage Facilities	N/A	N/A	0
Total Average Daily Flow			2,552,038
Peak Flow (three times the total average daily flow)			7,656,113

* Community Core does not include acreage that could be developed to residential use because this demand has already been accounted for in the Community Core Residential category.

Notes: All figures are approximations only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

DU = dwelling units; Sq. Ft. = square feet; GPD = gallons per day, Ac. = acres; GPUPD = gallons per unit per day; N/A = not applicable; Bldg. = building

Source: *Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan*, City of Tustin 1999.

Table 4
Total Solid Waste Generation - Alternative 1

Land Use Type	Units (1,000 Bldg. Sq. Ft.)	Demand Factor (Tons/Year/Unit)	Demand (Tons/Year)
Low Density Residential (includes Low Density Residential in Golf Village)	1,421	2.01	2,856
Medium Density Residential (includes Medium Density Residential in Golf Village)	1,701	1.17	1,990
Medium-High Density Residential (includes Residential in Community Core)	1,479	1.17	1,730
Transitional/Emergency Housing	133	1.30	173
Commercial Business	4,305	1.66	7,146
Commercial	713	4.15	2,961
Village Services	316	4.15	1,310
Golf Commercial/Golf Village Hotel	500 rooms	0.33	165
Golf Course	**159 acres**	**8.00**	**1,272**
Community Core*	3,631	4.15	15,068
Learning Village	1,413	1.30	1,836
Community Park	**24 acres**	**8.00**	**192**
Urban Regional Park	**85 acres**	8.00	680
Total			37,379

* Community Core does not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

Sq. Ft. = square feet; DU = dwelling units

Source: Generation factors from *Technical Bulleting 85-6* (National Solid Waste Management Association 1985)

Table 5
Total Potable Water Demand - Alternative 2

Land Use Type	Units (DU or Acres)	Demand Factor (GPD/Unit)	Demand (GPD)
Low Density (1-7 DU/Acre)	1,729	455	786,695
Medium Density(8-15 DU/Acre)	2,132	300	639,600
High Density (16-25 DU/Acre)	1,309	220	287,980
Village Mixed Use - High Density (16-25 DU/Acre)	1,035	220	227,700
Commercial/Business	309.80	2,000	619,600
Commercial	78.40	2,000	156,800
Commercial/Recreation	22.90	270	6,183
Village Mixed Use*	82.80	2,000	165,600
Hotel	12.10	3,500	42,350
Golf Course	177.00	0	0
Institutional/Commercial	28.00	2,000	56,000
Cultural Center	55.80	100	5,580
Community Park	46.70	0	0
Arterial Roadways	149.50	0	0
Drainage Facilities	28.50	0	0
Total Gallons Per Day			2,994,088
Total Cubic Feet per Second			4.63
Total Peak Hour Factor			2.35
Total Peak Hour Cubic Feet per Second			10.88

* Village Mixed Use does not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

DU = dwelling units; GPD = gallons per day

Source: Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan, City of Tustin 1999.

Table 6
Total Non-Potable Water Demand - Alternative 2

Land Use Type	Units (Acres)	Demand Factor (GPD/Unit)	Demand (GPD)
Low Density (1-7 DU/Acre)	279.8	535.60	149,860.88
Medium Density(8-15 DU/Acre)	191.5	892.74	170,959.71
High Density (16-25 DU/Acre)	87.0	892.74	77,668.38
Village Mixed Use - High Density (16-25 DU/Acre)	56.4	892.74	50,350.54
Commercial/Business	309.8	714.19	221,256.06
Commercial	78.4	714.19	55,992.50
Commercial/Recreation	22.9	3,213.87	73,597.62
Village Mixed Use*	82.8	714.19	59,134.93
Hotel	12.1	714.19	8,641.70
Golf Course	177.0	3,124.60	553,054.20
Institutional/Commercial	28.0	803.47	22,497.16
Cultural Center	55.8	714.19	39,851.80
Community Park	46.7	3,570.97	166,764.30
Arterial Roadways	149.5	714.19	106,771.41
Drainage Facilities	28.5	0.00	0.00
Total Gallons Per Day			1,756,401
Total Cubic Feet per Second			2.72
Total Peak Hour Factor			8.80
Total Peak Hour Cubic Feet per Second			23.94

* Village Mixed Use does not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

GPD = gallons per day; DU = dwelling units

Source: Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan, City of Tustin 1999.

Table 7
Total Sewer Flows - Alternative 2

Land Use Type	Unit (Acres or Rooms or DU or Bldg. Sq. Ft.)	Flow Coefficient (GPUPD)	Demand (GPD)
Low Density Residential (1-7 DU/Acre)	1,729 DU	298	515,242
Medium Density Residential (8-15 DU/Acre)	2,132 DU	199	424,268
High Density Residential (16-25 DU/Acre)	1,309 DU	164	214,676
Village Mixed Use Residential (16-25 DU/Acre)	1,035 DU	164	169,740
Commercial/Business	5,272,599 Sq. Ft.	0.2	1,054,520
Commercial	1,610,152 Sq. Ft.	0.01	16,102
Commercial/Recreation	437,560 Sq. Ft.	0.01	4,376
Village Mixed Use*	929,421 Sq. Ft.	0.01	9,294
Hotel	500 rooms	52.84	26,420
Golf Course	177 Ac.	100	17,700
Institutional/Commercial	351,268 Sq. Ft.	0.2	70,254
Cultural Center	570,636 Sq. Ft.	0.2	114,127
Community Park	312,543 Sq. Ft.	0.2	62,509
Arterial Roadways	N/A	N/A	0
Drainage Facilities	N/A	N/A	0
Total Average Daily Flow			2,699,227
Peak Flow (three times the total average daily flow)			8,097,680

* Village Mixed Use does not include acreage that could be developed to residential use because this demand has already been accounted for in the Village Mixed Use Residential category.

Notes: All figures are approximations only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

GPD = gallons per day; Sq. Ft. = square feet, Ac. = acres; GPUPD = gallons per unit per day; DU = dwelling units; N/A = not applicable; Bldg. = building

Source: *Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan* (City of Tustin 1999).

Table 8
Total Solid Waste Generation - Alternative 2

Land Use Type	Units	Demand Factor (Tons/Year/Unit)	Demand (Tons/Year)
Low Density Residential	1,729 DU	2.01	3,475
Medium Density Residential	2,132 DU	1.17	2,494
High Density Residential (includes Village Mixed Use Residential)	2,344 DU	1.17	2,742
Commercial Business	5,273 Sq. Ft.	1.66	8,753
Commercial	1,610 Sq. Ft.	4.15	6,682
Commercial Recreation	438 Sq. Ft.	1.30	569
Village Mixed Use*	929 Sq. Ft.	4.15	3,855
Hotel	500 rooms	0.33	165
Golf Course	177 acres	8.00	1,416
Institutional/Commercial	351 Sq. Ft.	1.30	456
Cultural Center	571 Sq. Ft.	1.30	742
Community Park	47 acres	8.00	376
Total			31,727

* Village Mixed Use does not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

Sq. Ft. = square feet; DU = dwelling units

Source: Generation factors from *Technical Bulleting 85-6* (National Solid Waste Management Association 1985)

Table 9
Total Potable Water Demand - Alternative 3

Land Use Type	Units (DU or Acres)	Demand Factor (GPD/Unit)	Demand (GPD)
Low Density (1-7 DU/Acre)	1,460	455	664,300
Medium Density (8-15 DU/Acre)	1,235	300	370,500
Community Core (8-15 DU/Acre)	630	300	189,000
Village Mixed Use - High Density (16-25 DU/Acre)	1,015	220	223,300
Commercial/Business	309.60	2,000	619,200
Commercial	68.30	2,000	136,600
Commercial/Recreation	22.90	270	6,183
Village Mixed Use*	80.20	2,000	160,400
Hotel	12.50	3,500	43,750
Community Core*	126.20	2,000	252,400
Golf Course	186.90	0	0
Institutional/Commercial	36.10	2,000	72,200
Cultural Center	51.20	270	13,824
Community Park	51.30	0	0
Arterial Roadways	149.50	0	0
Drainage Facilities	28.50	0	0
Total Gallons Per Day			2,751,657
Total Cubic Feet per Second			4.26
Total Peak Hour Factor			2.35
Total Peak Hour Cubic Feet per Second			10.01

* Community Core and Village Mixed Use do not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

DU = dwelling units; GPD = gallons per day

Source: *Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan*, City of Tustin 1999.

Table 10
Total Non-Potable Water Demand - Alternative 3

Land Use Type	Units (Acres)	Demand Factor (GPD/Unit)	Demand (GPD)
Low Density (1-7 DU/Acre)	231.8	535.60	124,152.08
Medium Density (8-15 DU/Acre)	136.7	892.74	122,037.56
Community Core (8-15 DU/Acre)	52.5	892.74	46,868.85
Village Mixed Use - High Density (16-25 DU/Acre)	56.4	892.74	50,350.54
Commercial/Business	309.6	714.19	221,113.22
Commercial	68.3	714.19	48,779.18
Commercial/Recreation	22.9	3,213.87	73,597.62
Village Mixed Use*	80.2	714.19	57,278.04
Hotel	12.5	714.19	8,927.38
Community Core*	126.2	714.19	90,130.78
Golf Course	186.9	3,124.60	583,987.74
Institutional/Commercial	36.1	714.19	25,782.26
Cultural Center	51.2	714.19	36,566.53
Community Park	51.3	3,570.96	183,190.25
Arterial Roadways	155.1	714.19	110,770.87
Drainage Facilities	28.5	0.00	0.00
Total Gallons Per Day			1,783,533
Total Cubic Feet per Second			2.76
Total Peak hour factor			8.80
Total Peak Hour Cubic Feet per Second			24.29

* Community Core and Village Mixed Use do not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

GPD = gallons per day; DU = dwelling units

Source: *Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan* (City of Tustin 1999).

Table 11
Total Sewer Flows - Alternative 3

Land Use Type	Unit (Acres or Rooms or DU or Bldg. Sq. Ft.)	Flow Coefficient (GPUPD)	Demand (GPD)
Low Density Residential (1-7 DU/Acre)	1,460 DU	298	435,080
Medium Density Residential (8-15 DU/Acre)	1,235 DU	199	245,765
Community Core Residential (8-15 DU/Acre)	630 DU	199	125,370
Village Mixed Use Residential (16-25 DU/Acre)	1,015 DU	164	166,460
Commercial/Business	5,142,528 Sq. Ft.	0.2	1,028,506
Commercial	1,219,593 Sq. Ft.	0.01	12,196
Commercial/Recreation	437,560 Sq. Ft.	0.20	87,512
Village Mixed Use*	712,467 Sq. Ft.	0.01	7,125
Hotel	500 rooms	52.84	26,420
Community Core*	1,702,464 Sq. Ft.	0.01	17,025
Golf Course	186.9 Ac.	100	18,690
Institutional/Commercial	467,037 Sq. Ft.	0.2	93,407
Cultural Center	557,568 Sq. Ft.	0.2	111,514
Community Park	394,218	0.20	78,844
Arterial Roadways	N/A	N/A	0
Drainage Facilities	N/A	N/A	0
Total Average Daily Flow			2,453,912
Peak Flow (three times the total average daily flow)			7,361,737

* Community Core and Village Mixed Use do not include acreage that could be developed to residential use because this demand has already been accounted for in the appropriate residential category.

Notes: All figures are approximations only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

DU = dwelling units; GPD = gallons per day; GPUPD = gallons per unit per day; Ac. = acres; Bldg. = building; Sq. Ft. = square feet; N/A = not applicable

Source: *Errata to the Community Facilities and Infrastructure Specific Plan/Reuse Plan* (City of Tustin 1999).

Table 12
Total Solid Waste Generation - Alternative 3

Land Use Type	Units (DU or 1000 Sq. Ft.)	Demand Factor (Tons/Year/Unit)	Demand (Tons/Year)
Low Density Residential	1,460 DU	2.010	2,935
Medium Density Residential (includes Community Core Residential)	1,865 DU	1.170	2,182
Village Mixed Use Residential	1,015 DU	1.170	1,188
Commercial Business	5,143	1.660	8,537
Commercial	1,220	4.150	5,061
Commercial Recreation	438	4.150	1,816
Village Mixed Use*	712	4.150	2,957
Hotel	500 rooms	0.330	165
Golf Course	187 acres	8.000	1,496
Community Core*	1,702	4.150	7,065
Institutional/Commercial	467	1.300	607
Cultural Center	558	1.300	725
Community Park	51 acres	8.000	408
Total			35,142

* Community Core and Village Mixed Use do not include acreage that could be developed in residential use.

Notes: All figures are estimates only. Totals may not add due to rounding. Figures in text are rounded for discussion purposes.

Sq. Ft. = square feet; DU = dwelling units

Source: Generation factors from *Technical Bulleting 85-6* (National Solid Waste Management Association 1985)

Agreements Between City of Tustin and Tustin Unified School District and Irvine Unified School District

FILE COPY

AUG 5

AGREEMENT BETWEEN CITY OF TUSTIN AND IRVINE UNIFIED SCHOOL DISTRICT REGARDING TRANSFER OF SCHOOL SITE AND OTHER MITIGATION MEASURES

This Agreement is made and entered into by and between the City of Tustin, a municipal corporation (hereinafter "City"), the Local Redevelopment Authority ("hereinafter "LRA"), and the Irvine Unified School District (hereinafter "District").

RECITALS

1. The United States Department of Defense ("DOD") has determined to close Marine Corps Air Station-Tustin ("MCAS-Tustin").

2. MCAS-Tustin is mainly located within the City of Tustin, with the exception of approximately 80 acres which are located in the City of Irvine. See Exhibit "A" site map of attached hereto.

3. The City of Tustin, which is the federally approved Local Redevelopment Authority (LRA), chairs the MCAS-Tustin Reuse Task Force ("Task Force") and is responsible for preparation of a reuse plan, and joint environmental impact statement/environmental impact report (EIR/EIS) for consideration by the DOD, the LRA and the cities of Tustin and Irvine in ultimately determining the appropriate disposition of real property at MCAS-Tustin.

4. A goal of the Task Force and the City is to have a balanced land use plan that is economically viable and does not impose such financial burdens on private development that the desired land uses are never, or only partially developed. In addition, because of the need to rebuild much of the infrastructure at MCAS-Tustin, and the resultant need for new revenues

to finance such construction, it is desirable to have as much of the real property at MCAS-Tustin as possible, remain on the tax rolls and not be given over to public, tax-exempt uses.

5. As part of the federal base closure and reuse process, local agencies, such as the District have the opportunity to request from the LRA a public benefit conveyance of property which would require final approval by DOD and the federal agency sponsoring the public conveyance request. In such process, great weight is given to the LRA's views on such transfers.

6. The District wishes to acquire twenty (20) acres of MCAS-Tustin at the northwest corner of Barranca and Harvard within the City of Irvine for a K-8 elementary school, and desires the support of the LRA for such transfer. District and City agree the Land Use Plan under consideration will generate enough new students to warrant and justify the need for an additional K-8 elementary school for the District.

7. The City and LRA are agreeable to supporting such transfer and implementing other actions, as described herein, as part of a package of measures to mitigate the impacts of the base reuse on the District, providing District agrees that such measures satisfy the District's claims from the City of Tustin, LRA or City of Irvine for environmental mitigation.

8. District acknowledges that the State Legislature has determined that: "the subject of the financing of school facilities with development fees is a matter of statewide concern," and "For this reason the Legislature hereby occupies the subject matter of mandatory development fees and other development requirements for school facilities finance to the exclusion of all local measures on the subject."

9. The District acknowledges that in agreeing to the transfer and other mitigation measures, the City and LRA is providing consideration that it is not otherwise required or obligated to provide, and that in exchange for such consideration, the District understands that

it will curtail its rights to challenge the City of Tustin's, LRA's or City of Irvine's land use approvals as provided herein.

NOW, THEREFORE, in consideration of the Recitals stated above, and the promises and mutual covenants herein, the parties agree as follows:

AGREEMENT

1. LRA's Obligations

LRA shall:

A. Support the transfer of approximately twenty (20) acres at no cost to the District for purposes of a K-8 elementary school site;

B. Include a mitigation measure in the EIS/EIR requiring the payment of school fees on development projects in MCAS-Tustin in the amounts allowed by state law;

C. Support the receipt by the IUSD of their share of tax increment pursuant to Section 33607.5 of California Community Redevelopment Law, in the event a Redevelopment Project Area is created for MCAS, Tustin.

D. Support the District's use of other alternative financing techniques (other than the use of assessment districts which establish a Community Facilities District (CFD) under the Mello-Roos Act within the MCAS-Tustin project boundaries and which is based on a request from two members of the legislative body or which utilizes a land owner petition within the proposed CFD boundary). Other reasonable methods of accommodating new school students generated from development within the MCAS,

Tustin project including the use of temporary classrooms, certificates of participation, general obligation bonds, or state funding of school facilities shall also be supported.

E. Cooperate and encourage the City of Irvine to support Items A, B, C, and D above.

2. District's Obligations

A. District shall not challenge, comment on, or oppose, nor shall it fund or in any way assist any other person or entity to challenge, comment on, or oppose, to or before any local, state, or federal agency, or file or maintain any actions or proceedings to set aside, enjoin, challenge, appeal, or otherwise pursue any legal, equitable, or administrative remedies regarding the approval or implementation of any proposals, applications, approvals or permits (including any related environmental documentation or creation of Redevelopment Project Areas) relating to MCAS-Tustin, or regarding any proposed, approved, or existing uses in MCAS-Tustin which projects or uses are consistent with the land use plan approved by the LRA or cities of Tustin or Irvine.

B. In the event that District makes any written comments, or engages in any written communications, with any local, state, or federal agency (including the City of Irvine) regarding the approval or implementation of any future development proposals, applications, approvals or permits (including any related environmental documentation) relating to MCAS-Tustin, or any proposed, approved, or existing uses in MCAS-Tustin, regardless of whether any such projects or uses are consistent or inconsistent with the land use plan approved by the LRA or cities of Tustin or Irvine, District shall immediately provide complete copies of such written comments or communications to the City and LRA.

C. The District agrees that the site location and configuration of the 20-acre school site shall be consistent with the LRA's identified concept approval but the size of the transfer is approximated only and actual metes and bounds shall be determined by the Department of Defense or other Federal agency prior to transfer in consultation with the LRA.

D. Prior to transfer of the property by the Federal government and prior to any interim or permanent reuse of requested facilities or sites, the District agrees to enter into an agreement with and acceptable to the LRA and the Cities of Tustin or Irvine, as appropriate. The purpose of the agreement is to: 1) identify the planning goals of the agency receiving property and the City or LRA for the site; 2) identify the scope and schedule for short range improvements and long range development plans for the property; 3) establish a process for meaningful consultation on development and operational issues of mutual concern; 4) identify capital infrastructure improvements, roadway and existing utility and new utility right of way and easement dedications (as needed) and environmental impact report mitigation that will be required of the Agency receiving property, 5) identify necessary procedures to implement the agreement, and 6) the District shall also affirm its commitment to return any property not used for the slated purpose directly to the LRA, in the case of property transferred as an Economic Development Conveyance (EDC).

E. The District agrees that no direct vehicular access to the school site along Barranca Parkway will be authorized.

F. The proposed school shall be fully implemented by IUSD by the later of either 5 years from transfer of the property or when building permits are issued for 80% of the new units being proposed in the Reuse Plan within District boundaries, unless a shorter period is mandated by the federal sponsoring agency. The District understands that the underlying land use designation of the Reuse Plan would allow an alternative land use to occur

without an amendment to the Reuse/Specific Plan should the District not move forward with their plans to utilize the property within an agreed upon time frame.

G. The District agrees not to establish a Mello-Roos CFD on properties within the School District boundaries located within the MCAS-Tustin project which utilizes a written request from two members of the legislative body or a land owner petition process except that the City of Irvine may agree to authorize such formation only within the approximate 80 acres at MCAS-Tustin within their boundaries. The District also agrees that the only petition process they would utilize in establishment of a CFD would be a petition of 10% of the registered voters residing within the proposed CFD District, provided that the School District also agrees that any registered voter petition for establishment of a CFD that would affect the MCAS-Tustin Project would not be acted on unless there was a minimum of 100 registered voters within the boundaries of the base to be included within the proposed CFD for each of the 90 days preceding the close of any protest hearing, and until entitlements are approved for 50% of the units being proposed in the MCAS-Tustin Reuse Plan within Irvine Unified School District boundaries. The District also agrees that for any established CFD, they will not impose a levy, impact fee, exaction, assessment or special tax which will result in the total special tax on individual properties exceeding one half of one percent (.5%) of assessed valuation.

3. <u>Governing Law: Construction of Agreement</u>

This Agreement and the rights and obligations of the parties, shall be governed by and interpreted in accordance with the laws of the State of California and its Constitution. The provisions of this Agreement and the exhibit hereto shall be construed as a whole according to their common meaning and not strictly for or against any party and consistent with the provisions hereof, in order to achieve the objectives and purposes of the parties hereunder. The

captions preceding the text of each section, and the table of contents, are included only for convenience of reference and shall be disregarded in the construction and interpretation of this Agreement.

4. Actions Challenging Agreement

The parties hereto shall use their best efforts to defend themselves in any action brought by any other person or entity seeking to attack, annul, set aside, rescind, or otherwise invalidate this Agreement, or any term, provisions, covenant or condition hereof.

5. Severability

If any term, provision, covenant or condition of this Agreement shall be determined invalid, void or unenforceable by judgment or court order, the remainder of this Agreement shall remain in full force and effect, unless enforcement of this Agreement as so invalidated would be unreasonable or grossly inequitable under the circumstances or would frustrate the purposes of this Agreement.

6. Entire Agreement

This Agreement and the exhibit attached hereto contains all the representations and the entire agreement between the parties with respect to the subject matter hereof. Except as otherwise specified in this Agreement, and the exhibit hereto, any prior correspondence, memoranda, agreements, warranties, or representations are superseded in total by this Agreement and exhibits hereto.

7. Attorney's Fees

In the event of any dispute, claim, or litigation based upon, arising out of, or relating to, the breach, enforcement or interpretation of any of the provisions of this Agreement, the prevailing party in such dispute, claim, or litigation shall be entitled to recover its attorneys' fees, costs and expenses, which are reasonably incurred, from the nonprevailing party.

8. **Counterparts**

This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF the parties have executed this Agreement as of the date and year first above written.

CITY OF TUSTIN, LOCAL REUSE AUTHORITY FOR MCAS, TUSTIN

By: Tracy Wills Worley
Mayor

ATTEST:

Pamela Stoker
City Clerk

APPROVED AS TO FORM:

Lois E. Jeffrey
Lois E. Jeffrey
City Attorney

IRVINE UNIFIED SCHOOL DISTRICT

By:
Deputy Superintendent, Business Services

CAS:DO:kd\mcas\irvine.agm

Signed
FILE COPY

AGREEMENT BETWEEN CITY OF TUSTIN AND TUSTIN UNIFIED SCHOOL DISTRICT REGARDING TRANSFER OF SCHOOL SITES AND OTHER MITIGATION MEASURES

This Agreement is made and entered into by and between the City of Tustin, a municipal corporation (hereinafter "City"), the Local Redevelopment Authority ("hereinafter "LRA"), and the Tustin Unified School District (hereinafter "District").

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2. MCAS-Tustin is mainly located within the City of Tustin, with the exception of approximately 80 acres which are located in the City of Irvine. See Exhibit "A" site map of attached hereto.

3. The City of Tustin, which is the federally approved Local Redevelopment Authority (LRA), chairs the MCAS-Tustin Reuse Task Force ("Task Force") and is responsible for preparation of a reuse plan, and joint environmental impact statement/environmental impact report (EIR/EIS) for consideration by the DOD, the LRA and the cities of Tustin and Irvine in ultimately determining the appropriate disposition of real property at MCAS-Tustin.

4. A goal of the Task Force and the City is to have a balanced land use plan that is economically viable and does not impose such financial burdens on private development that the desired land uses are never, or only partially developed. In addition, because of the need to rebuild much of the infrastructure at MCAS-Tustin, and the resultant need for new revenues

to finance such construction, it is desirable to have as much of the real property at MCAS-Tustin as possible, remain on the tax rolls and not be given over to public, tax-exempt uses.

5. As part of the federal base closure and reuse process, local agencies, such as the District have the opportunity to request from the LRA a public benefit conveyance of property whicb would require final approval by DOD and the federal agency sponsoring the public conveyance request. In sucb process, great weight is given to the LRA's views on sucb transfers.

6. The District wishes to acquire two, ten (10) acre sites at MCAS-Tustin for elementary schools and one forty (40) acre site for a high school, and desires the support of the LRA for such transfer.

7. The City and LRA are agreeable to supporting such transfer and implementing other actions, as described herein, as part of a package of measures to mitigate the impacts of the base reuse on the District, providing District agrees that such measures satisfy the District's claims from the City of Tustin or LRA for environmental mitigation.

8. District acknowledges that the State Legislature has determined that: "the subject of the financing of school facilities with development fees is a matter of statewide concern," and "For this reason the Legislature hereby occupies the subject matter of mandatory development fees and other development requirements for school facilities finance to the exclusion of all local measures on the subject."

9. The District acknowledges that in agreeing to the transfer and other mitigation measures, the City and LRA is providing consideration that it is not otherwise required or obligated to provide, and that in exchange for such consideration, the District understands that it will curtail its rights to challenge the City of Tustin's or LRA's land use approvals as provided herein.

NOW, THEREFORE, in consideration of the Recitals stated above, and the promises and mutual covenants herein, the parties agree as follows:

AGREEMENT

I. LRA's Obligations

LRA shall:

A. Support the transfer of approximately sixty (60) acres at no cost to the District for purposes of two (2), ten (10) acre elementary school sites and one forty (40) acre high school site. The LRA does not believe that the District will be able to comply with current terms and conditions normally required for an educational public benefit conveyance by the U.S. Department of Education. The LRA will, therefore, recommend to the Department of Defense transfer of the school sites to the LRA as an Economic Development Conveyance (EDC) and then the LRA will agree to subsequently transfer the sites to the District subject to all other terms of this Agreement. As an alternative, in the event an EDC application is not possible or approved as determined by the Department of Defense, the LRA will support and assist the District in any efforts to ensure that any transfer to the District under an educational public benefit conveyance is under favorable terms and conditions to the District.

B. Include a mitigation measure in the EIS/EIR requiring the payment of school fees on development projects in MCAS-Tustin in the amounts allowed by state law;

C. Support the receipt by the District of their share of tax increment pursuant to Section 33607.5 of California Community Redevelopment Law, in the event a Redevelopment Project Area is created for MCAS, Tustin.

D. Support the District's use of other alternative financing techniques (other than the use of assessment districts which establish a Community Facilities District (CFD) under the Mello-Roos Act within the MCAS-Tustin project boundaries and which is based on a request from two members of the legislative body or which utilizes a land owner petition within the proposed CFD boundary). Other reasonable methods of accommodating new school students generated from development within the MCAS, Tustin project including the use of temporary classrooms, certificates of participation, general obligation bonds, or state funding of school facilities shall also be supported.

2. District's Obligations

A. District shall not challenge, comment on, or oppose, nor shall it fund or in any way assist any other person or entity to challenge, comment on, or oppose, to or before any local, state, or federal agency, or file or maintain any actions or proceedings to set aside, enjoin, challenge, appeal, or otherwise pursue any legal, equitable, or administrative remedies regarding the approval or implementation of any proposals, applications, approvals or permits (including any related environmental documentation or creation of Redevelopment Project Areas) relating to MCAS-Tustin, or regarding any proposed, approved, or existing uses

in MCAS-Tustin which projects or uses are consistent with the land use plan approved by the LRA or City of Tustin.

B. In the event that District makes any written comments, or engages in any written communications, with any local, state, or federal agency (including the City of Irvine) regarding the approval or implementation of any future development proposals, applications, approvals or permits (including any related environmental documentation) relating to MCAS-Tustin, or any proposed, approved, or existing uses in MCAS-Tustin, regardless of whether any such projects or uses are consistent or inconsistent with the land use plan approved by the LRA or City of Tustin, District shall immediately provide complete copies of such written comments or communications to the City and LRA.

C. The District agrees that the site location and configuration of the two, ten (10) acre elementary school sites and one, forty (40) acre high school site shall be consistent with the LRA's identified concept approval but the size of the transfer is approximated only and actual metes and bounds shall be determined by the Department of Defense or other Federal agency prior to transfer in consultation with the LRA.

D. Prior to transfer of the property by the Federal government and prior to any interim or permanent reuse of requested facilities or sites, the District agrees to enter into an agreement with and acceptable to the LRA and the City of Tustin. The purpose of the agreement is to: 1) identify the planning goals of the agency receiving property and the City or LRA for the site; 2) identify the scope and schedule for short range improvements and long range development plans for the property; 3) establish a process for meaningful consultation on development and operational issues of mutual concern; 4) identify capital infrastructure improvements, roadway and existing utility and new utility right of way and easement dedications (as needed) and environmental impact report mitigation that will be required of the

Agency receiving property, 5) identify necessary procedures to implement the agreement, and 6) the District shall also affirm its commitment to return any property not used for the slated purpose directly to the LRA, in the case of property transferred as an Economic Development Conveyance (EDC).

E. The District agrees that no direct vehicular access to the proposed elementary school site at the northwest portion of the MCAS, Tustin site along Redhill Avenue will be authorized.

F. The proposed schools shall be fully implemented by the District by the later of either: 1) 8 years from transfer of the property to the LRA, if an EDC is approved, or to the District if conveyed to them directly by the U.S. Department of Education or other federal agency; or 2) when building permits are issued for 80% of the new units being proposed in the Reuse Plan within District boundaries, unless a shorter period is mandated by the federal sponsoring agency. If within 12 months of any transfer of property, actual development of a school is not proceeding, the District shall agree to enter into an agreement with the LRA, if requested, to permit the accommodation of interim public uses on the site prior to school development. The District understands that the underlying land use designation of the Reuse Plan would allow an alternative land use to occur without an amendment to the Reuse/Specific Plan should the District not move forward with their plans to utilize the property within an agreed upon time frame.

G. The District agrees not to establish a Mello-Roos CFD on properties within the School District boundaries located within the MCAS-Tustin project which utilizes a written request from two members of the legislative body or a land owner petition process. The District also agrees the only petition process they would utilize in establishment of a CFD would be a petition of 10% of the registered voters residing within the proposed CFD District,

provided that the School District also agrees that any registered voter petition for establishment of a CFD that would affect the MCAS-Tustin Project would not be acted on unless there was a minimum of 100 registered voters within the boundaries of the Base to be included within the proposed CFD for each of the 90 days preceding the close of any protest hearing, and until entitlements are approved for 50% of the units being proposed in the MCAS-Tustin Reuse Plan within School District boundaries. The District also agrees that for any established CFD, they will not impose a levy, impact fee, exaction, assessment or special tax which will result in the total special tax on individual properties exceeding one half of one percent (.5%) of assessed valuation.

3. Governing Law: Construction of Agreement

This Agreement and the rights and obligations of the parties, shall be governed by and interpreted in accordance with the laws of the State of California and its Constitution. The provisions of this Agreement and the exhibit hereto shall be construed as a whole according to their common meaning and not strictly for or against any party and consistent with the provisions hereof, in order to achieve the objectives and purposes of the parties hereunder. The captions preceding the text of each section, and the table of contents, are included only for convenience of reference and shall be disregarded in the construction and interpretation of this Agreement.

4. Actions Challenging Agreement

The parties hereto shall use their best efforts to defend themselves in any action brought by any other person or entity seeking to attack, annul, set aside, rescind, or otherwise invalidate this Agreement, or any term, provisions, covenant or condition hereof.

5. **Severability**

If any term, provision, covenant or condition of this Agreement shall be determined invalid, void or unenforceable by judgment or court order, the remainder of this Agreement shall remain in full force and effect, unless enforcement of this Agreement as so invalidated would be unreasonable or grossly inequitable under the circumstances or would frustrate the purposes of this Agreement.

6. **Entire Agreement**

This Agreement and the exhibit attached hereto contains all the representations and the entire agreement between the parties with respect to the subject matter hereof. Except as otherwise specified in this Agreement, and the exhibit hereto, any prior correspondence, memoranda, agreements, warranties, or representations are superseded in total by this Agreement and exhibits hereto.

7. **Attorney's Fees**

In the event of any dispute, claim, or litigation based upon, arising out of, or relating to, the breach, enforcement or interpretation of any of the provisions of this Agreement, the prevailing party in such dispute, claim, or litigation shall be entitled to recover its attorneys' fees, costs and expenses, which are reasonably incurred, from the nonprevailing party.

8. **Counterparts**

This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF the parties have executed this Agreement as of the date and year first above written.

CITY OF TUSTIN, LOCAL REUSE AUTHORITY FOR MCAS, TUSTIN

By: Tracy Wills Worley
Mayor 10-21-96

ATTEST:

City Clerk

APPROVED AS TO FORM:

Lois E. Jeffrey
City Attorney

TUSTIN UNIFIED SCHOOL DISTRICT

By:
President, Board of Education

CAS:DO:kd\MCAS\tusd.agm

Air Quality Calculation Assumptions

AIR QUALITY CALCULATION ASSUMPTIONS

INTRODUCTION

This appendix describes the assumptions and sources of data used to determine air quality emissions. Additional assumptions, sources, and calculations are on file at the City of Tustin.

GENERAL METHODOLOGY

Estimated emission rates and total emissions from many construction and operations activities were calculated using emission factors and methods published by the USEPA in the Compilation of Air Pollution Emission Factors, AP-42; the SCAQMD in the CEQA Air Quality Handbook; and the ARB in the vehicle emission factors models EMFAC7F and EMFAC7G. Data from emissions reports and permit applications relative to historical, current, and proposed emissions was also used. For baseline (1991) mobile source emissions, the applicable mobile source emission factors, EMFAC7E, was used.

CONSTRUCTION

In order to determine peak construction emissions, peak year construction activity was estimated by assuming that 60 percent of the five-year phasing development occurs in one year. Peak quarterly construction activity was estimated by assuming that 50 percent of the peak year development occurs in one quarter. Peak daily construction mass grading activity was estimated by assuming that 1/5 of the peak quarter acres graded are graded every day that quarter, with a minimum of 15 acres graded each peak day unless the peak quarterly acres graded is less than 15. In this case, the peak quarterly acres graded was assumed to occur on the peak day. Peak daily demolition, asbestos removal, site preparation and utility installation, and building construction activities was estimated by assuming that peak quarterly construction activity occurs over 60 days per quarter.

Construction air emissions would result from the following four discrete construction activities: 1) demolition (which may include asbestos removal); 2) mass grading; 3) site preparation and utility installation; and 4) building construction.

While these discrete activities may not occur simultaneously on any particular development project site in the reuse plan area, several different development projects may occur simultaneously.

Therefore, a "Simultaneous Construction Activity" scenario was developed by adding 50 percent of each discrete activity emissions to the highest discrete activity emissions for each pollutant. Eacb group of calculations shows both gross emissions and reduced emissions. The latter category assumes emission reductions for implementation of required and recommended SCAQMD Rules, control measures, and mitigation measures. Both calculations are included in accordance with the guidance of the SCAQMD CEQA Air Quality Handbook (1993). Net peak construction emissions were calculated by subtracting the baseline emissions from estimated gross emissions.

OPERATION

Operational vehicular source air pollutant emissions were calculated for each of the development phases by estimating the number of trips associated with each particular land use described in Section 2.4. The ARB's EMFAC7G emission factors were used for vehicular emissions estimates. Operational stationary source air pollutant emissious were estimated by using SCAQMD CEQA Handbook emission factors for eacb particular land use (SCAQMD 1993).

SIMULTANEOUS CONSTRUCTION AND OPERATION

In order to account for the possibility that operational emissions may overlap construction emissions, "Simultaneous Construction and Operation" emissious were estimated based on a scenario wbere construction and operations occur simultaneously. Peak daily construction emissions were assumed to occur simultaneously with full development operational emissions of each phase as described previously.

CO "HOT SPOT"

In order to determine if a CO "Hot Spot" would be created, the three intersections with the worst level of service (LOS) and highest A.M. peak bour traffic volumes were chosen for analysis, as suggested by applicable EPA guidance (Environmental Protection Agency. *Guidelines for Modeling Carbon Monoxide Emissions from Roadway Intersections.* EPA-454-R-92-005. November 1992). The guidance indicates that these intersections would have the greatest potential for CO hot spots. Both years 2005 and 2020 were analyzed; years in which traffic data is available (Section 4.12, and Appendix F of this EIS/EIR). EMFAC7F was used to estimate mobile emission factors for these two analysis years.

APPENDIX G
SUPPLEMENTARY BIOLOGICAL INFORMATION

MCAS Tustin Biological Impacts and Mitigation
Tierra Madre Consultants, March 1995

MCAS Tustin Report for a Biological Assessment
Tierra Madre Consultants, March 1993

Letter Amendment to MCAS Wetland Delineation
Tierra Data Systems, Octoher 1999

Wetlands Delineation MCAS Tustin
Tierra Data Systems, August 1999

MCAS Tustin Southwestern Pond Turtle Survey
Tierra Madre Consultants, Jnne 1999

MARINE CORPS AIR STATION TUSTIN
BIOLOGICAL IMPACTS AND MITIGATION

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CERTIFICATION: We certify that the statements furnished in this report and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and complete to the best of our knowledge.

TIERRA MADRE CONSULTANTS, INC.

9 March 1995

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Project Summary

Marine Corps Air Station, Tustin (MCAS Tustin) is located within Township 5 south, Range 9 west, "sections" 9, 10, 46, 47, and 62, of the Tustin U.S.G.S. 7.5' Quadrangle. MCAS Tustin is scheduled to close in July 1997. The Marine Corps and the City of Tustin are developing plans for the re-use of the Station. As part of this opportunities and constraints assessment, Tierra Madre Consultants was contracted by Cotton/Beland/Associates (C/B/A) to prepare a biological assessment of the Station for inclusion in an combined Environmental Impact Report/Study following the guidelines of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Tierra Madre Consultants (1993a) reported on the findings of a literature review and five field visits as part of this general biological assessment. Focused surveys for sensitive elements identified as potentially occurring on the Station were part of a follow-up report (Tierra Madre Consultants 1993b). Focused surveys were conducted for three sensitive elements: (1) the Southwestern Pond Turtle, (2) nesting Peregrine Falcon, and (3) a potential vernal pool. These three sensitive elements were the only ones, aside from wetlands, streambeds, and jurisdictional waters of the United States, that Tierra Madre Consultants (1993a, 1993b, 1994) concluded would require addressing under CEQA and NEPA guidelines.

MCAS Tustin has been developed extensively as housing and for Marine Corps activities (e.g., flight lines, bunkers, hangars, etc.). Acreage not impacted by development is currently outleased for agriculture use. No "native" habitat remains on the Station. Instead, MCAS Tustin supports agricultural fields, grass/weed fields, and ornamental trees, shrubs, and lawns. Plant and animal diversity and abundance is low, and the species that do occur are typical of disturbed/ruderal situations. The channel system flowing along or near the northern and eastern boundaries of the Station (called the Santa Ana/Santa Fe and Peters Canyon channels) has been identified as a wetland by the Soil Conservation Service (1992). A delineation of wetlands, streambeds, and jurisdictional waters of the United States was conducted in this area of the Station, as well as in other drainage courses and channels (Tierra Madre Consultants 1994). Impacts to wetlands, streambeds, and jurisdictional waters of the United States need to be mitigated per the federal "no net loss" wetlands policy.

Tierra Madre located few sensitive species on the Station. A review of literature for the site indicated that the Southwestern Pond Turtle (*Clemmys marmorata pallida*), a species recently denied listing as federally Endangered (U. S. Fish and Wildlife Service 1993), occurs in the fresh-water channels on-site (Soil Conservation Service 1992, M. Drilling pers. comm., Tierra Madre Consultants 1993b). Focused surveys were conducted to determine the presence/absence and population of this species (Tierra Madre Consultants 1993b). A complete discussion of potential impacts to this turtle follows.

Several sensitive raptor species have been observed on the site, including White-tailed Kite (*Elanus leucurus*; Ledendecker *et al.* 1987) and the Burrowing Owl (*Speotyto cunicularia*; Brown and Caldwell 1985, M. Purdue pers. comm.). The agricultural and weedy areas on-site provide suitable foraging habitat for Northern Harriers (*Circus cyaneus*) and Ferruginous Hawks (*Buteo regalis*), although the latter species is quite rare in Orange County. Trees around the housing tract in the northwestern corner likely provide roosting and foraging sites for Sharp-shinned (*Accipiter striatus*) and

Cooper's (*A. cooperi*) hawks. None of these species are listed as Threatened or Endangered by state or federal agencies. Aside from the kite, all of these raptor species are designated California "Species of Special Concern," at least as breeding species; the kite is considered a "Special Animal" by the California Department of Fish and Game. Tierra Madre Consultants recorded an American Peregrine Falcon (*Falco peregrinus anatum*) flying around the northern hangar on 9 March 1993. Focused surveys were conducted to determine the nesting status of this species on the Station (Tierra Madre Consultants 1993b). No additional Peregrine Falcons were reported on-site.

A potential vernal pool was identified near the southeastern corner of the Station. Focused surveys were conducted to determine if this pool is a vernal pool or simply a "rain puddle." Further studies (Tierra Madre Consultants 1993b) showed that this depression was not a vernal pool.

Project Description

Marine Corps Air Station, Tustin (hereinafter "MCAS Tustin" or "the Station") is located in Orange County, California, approximately forty miles south of Los Angeles in the City of Tustin, Township 5 south, Range 9 west, "sections" 9, 10, 46, 47, and 62 of the U. S. Geological Survey 7.5' Tustin quadrangle. The Station provides services and material to support operations of the 3rd Marine Aircraft Wing and its units. Helicopters comprise the primary air traffic on the Station. MCAS Tustin was commissioned in 1942 as a U. S. Naval Lighter than Air Base called Naval Air Station, Santa Ana, with massive blimp hangars constructed in 1943. The total acreage is 1594 acres, 530 acres of which is leased out for agricultural purposes and 175 acres of which are leased for a maintenance area. About 1200 acres of the site are slated for re-use (M. Drilling pers. comm.).

The entire Tustin Marine Corps Air Station has been impacted by human uses, and no undisturbed plant communities remain. A few sites (drainage channels and impermeable soils where water stands in seasonal pools) continue to provide habitat for native riparian plants, but even these areas are better characterized as "disturbed" than as "native plant communities." Most of the Station is in use for military operations, residential housing, or agriculture. Dominant plants throughout these areas are either cultivated crops and ornamentals (cauliflower and lettuce in the fields; landscaping plants around offices and residences) or "weedy" species (i.e., plants typically occurring abundantly in disturbed habitats but less common in stable natural communities). Examples of weedy species growing among row crops and on disturbed vacant land include Crystalline Iceplant (*Mesembryanthemum crystallinum*), Tarragon (*Artemisia dracunculus*), Annual Sunflower (*Helianthus annuus*), Bristly Ox-tongue (*Picris echiodes*), sow-thistle (*Sonchus* spp.), mustard (*Brassica* spp.), London Rocket (*Sisymbrium irio*), Australian Saltbush (*Atriplex semibaccata*), Common Knotweed (*Polygonum arenastrum*), Slender Wild Oat (*Avena barbata*), brome (*Bromus* spp.), and Foxtail Fescue (*Vulpia myuros*). Most of these plants are not non-native in California, though a few (e.g., Tarragon) are natives. The cultivated fields and landscaped areas on-site do not provide suitable habitat for rare or sensitive plant species known from the region, due to regular soil disturbance and herbicide treatments. Drainage channels support native riparian vegetation characterized by Goodding's Black Willow (*Salix gooddingii*), Mulefat (*Baccharis salicifolia*), cattail (*Typha* spp.), and bulrush (*Scirpus* spp.). These species are often dominant in southern California wetlands and riparian habitats, but the narrow linear channels seem to experience regular disturbance by scouring during storms, and are unlikely to support the diverse array of species

occurring in natural marshes and riparian forests.

Most habitat on MCAS Tustin is agricultural fields or grass/weedy fields. Brown and Caldwell (1985) indicated that eighty-five percent of the native vegetation has been cleared for agricultural purposes, construction, and paving. They also indicated that, historically, seventy percent of the site supported grassland, whereas the remaining thirty percent supported coastal sage scrub. There is no evidence, however, that this site ever supported coastal sage scrub and, indeed, it would appear that the entire site supported a marsh (Roesling Nakamura Architects 1989). The plant list provided by Tierra Madre Consultants (1993a) is based on our own field work, although some plants are taken from the lists provided by Brown and Caldwell (1985) and Ledendecker *et al.* (1987). We have used the plant list from the Brown and Caldwell report with caution, since it contains a number of species that likely never occurred on the site even historically. As with the plants, the Brown and Caldwell (1985) report is seriously flawed with regard to animals, and included a number of species which have never occurred in this portion of Orange County (e.g., Common Nighthawk). Tierra Madre Consultants (1993a) specifically addressed the Brown and Caldwell report and indicated which species listed by them do and do not occur at MCAS Tustin.

Agricultural, residential, and industrial land uses typically limit a site's value as wildlife habitat. Such areas are low in both species diversity and abundance. The low availability (or absence) of essential habitat elements such as food and cover substantially limits habitat value on the site. As a result, the only wildlife using the site are species tolerant of disturbed conditions. Even species adapted to human-dominated habitat occur only in low numbers on the Station, indicating minimal habitat value. Birds and mammals noted on the site are typical of disturbed grassland communities and suburban neighborhoods in coastal southern California. Faunal lists (Tierra Madre Consultants 1993a) are taken from our field visits. Forty-eight species of birds (generally the most conspicuous vertebrates) were noted during the five field visits. Most birds were congregated toward the housing area in the northwestern corner and were in the weedy margins to agricultural fields, particularly those adjacent to the channels. A flooded area in the southern part of the Station supported various water bird species, such as ducks, shorebirds, and gulls. Mammal species richness and abundance is also considered low, as only 25 small mammals (3 species) were trapped in 349 trap-nights (Tierra Madre Consultants 1993a). On 10 March, only one in 174 traps had a animal. Several Western Fence Lizards, the most ubiquitous reptile in coastal southern California, and a single Southwestern Pond Turtle were the only reptiles seen.

Much of the area surrounding MCAS Tustin has been developed, mainly as industrial complexes and business parks. We did not record native habitat on-site. Compared with natural land, the Station provides minimal habitat value and supports a low diversity and abundance of wildlife. Nevertheless, given the homogeneity and low habitat value in surrounding urban areas, agricultural fields on MCAS Tustin provides the most valuable habitat in the local area (J. D. Opdyke, U. S. Fish and Wildlife Service, *in litt.*).

According to the June, 1989 Masterplan prepared for MCAS Tustin, no rare or endangered "species have been identified to exist on or utilize Station property" (Roesling Nakamura Architects 1989). Since then the Southwestern Pond Turtle (*Clemmys marmorata pallida*) has been identified on MCAS Tustin (Soil Conservation Service 1992, Tierra Madre Consultants 1993b). A number of other sensitive species were said to occur on-site by Brown and Caldwell (1985) (but see Tierra Madre Consultants 1993a) and

Ledendecker *et al.* (1987). Our literature review indicates a few other sensitive species which potentially occur on-site. These species are presented by Tierra Madre Consultants (1993a). Although the majority of the species considered are not listed as threatened or endangered, they are nonetheless considered sensitive. Should they occur on the Station, potential impacts to them *may* be considered significant under CEQA section 15380 and NEPA 40 CFR 1500-1508.

Potential Impacts

Vernal Pools

A few sites on the Station are not under agricultural production, and their undisturbed impermeable soils cause runoff water to pool on their surfaces. This seasonal pooling is characteristic of a rare habitat type in southern California called "vernal pool" (Zedler 1987). Vernal pools are seasonal wetlands; they hold water for several weeks or months during the wet season, then dry completely during summer. Certain rare plants and animals occur only in vernal pools, and conservation of vernal pool habitat is becoming increasingly important. Topography and soil characteristics on the Station seem to provide suitable conditions for vernal pools, and at least one site supporting a potential remnant vernal pool. The site was inundated by standing runoff water in March, indicating suitable soils and topography. The bottom of the pool was not covered by plant remains from the previous growing season, suggesting that few plants occurred. As this feature is consistent with vernal pools, Tierra Madre Consultants (1993a) concluded that this "site *may* be a vernal pool," but further surveys during the spring showed that many of these impressions were not supported, and the site proved not be a vernal pool (Tierra Madre Consultants 1993b). Thus, there will be no impacts to vernal pools, regardless of the re-use alternative chosen; as such, no mitigation is required.

Southwestern Pond Turtle

The Southwestern Pond Turtle (*Clemmys marmorata pallida*) inhabits slowing-moving rivers and streams, usually with permanent pools. This species was found on-site during focused surveys conducted by Tierra Madre Consultants (1993b). Furthermore, Southwestern Pond Turtle has been recorded historically along Peters Canyon Channel bordering the Station (Soil Conservation Service 1992, M. Drilling pers. comm.).

Southwestern Pond Turtle is currently designated as a Category 2 candidate for federal listing as Threatened or Endangered. Category 2 candidates are those taxa for which information in the possession of the U. S. Fish and Wildlife Service indicates that proposing to list as Endangered or Threatened is possibly appropriate, but for which conclusive data on the biological vulnerability and threat are not currently available to support proposed rules. If information becomes available indicating the listing as Endangered or Threatened is appropriate, the Service would propose to list the Southwestern Pond Turtle. The Service announced its findings on a petition to list the Western Pond Turtle (the entire species, not just subspecies *pallida*) under the Endangered Species Act on 4 August 1993 (U. S. Fish and Wildlife Service 1993). The announcement stated, on the basis of "the best available scientific and commercial information," the Service found that listing Western Pond Turtle as Endangered or Threatened was not warranted at present because the species was not in danger of extinction or likely to become so in the foreseeable future.

Southwestern Pond Turtle, if considered by itself, however, may warrant a listing of Endangered or threatened. Brattstrom and Messer (1988) surveyed directly, or by consulting informed sources, 255 sites in Ventura, Orange, Los Angeles,

Riverside, San Bernardino, and San Diego Counties. Turtles were noted in 53 (20.8%) of these sites. Of 218 sites south of Ventura County only 28 (12.8%) held turtles. Of all 218 sites, only five (2.2%) held viable populations. The greatest contributor to the decline in pond turtle habitat, especially in southern California, has been habitat destruction for dams, channelization, sand and gravel operations, and diversion of water for agriculture and urban use (Brattstrom 1988).

As part of the 404 permitting process, the Service advises the Corps of Engineers on mitigation measures to protect fish and wildlife resources. Such recommendations could include measures to protect the Southwestern Pond Turtle. Other mitigation measures, expected to be required pursuant to State and federal regulations, will help to minimize the impacts to the Southwestern Pond Turtle (e.g., in-kind replacement of habitat, erosion/sediment control).

Pursuant to the California Environmental Quality Act (Section 15380, subsection d), Tierra Madre Consultants concludes that impacts to the Southwestern Pond Turtle could be considered significant if the project disturbs areas of occupied habitat. Potential occupied habitat occurs in the area encompassed by all proposed re-use alternatives (except, of course, for the "no project" alternative), although it is not clear from Cotton/Beland/Associates et al. (1994) whether or not the currently occupied channels would be impacted. All three re-use plans presented by Cotton/Beland/ Associates et al. (1994) show commercial development bordering the channel where Tierra Madre Consultants located Southwestern Pond Turtle. If these alternatives will not impact the channel in any way, Tierra Madre Consultants concludes that the project would not significantly impact this species and that mitigation would not be necessary. If, however, this channel will be impacted by proposed development to commercial business, project impacts to Southwestern Pond Turtle would be considered significant pursuant to CEQA 15380(d). This judgement is based upon the lack of suitable pond turtle habitat elsewhere on-site, and their general scarcity in southern California. Potential temporary impacts could also be to downstream movement and nesting sites.

American Peregrine Falcon

On 9 March 1993, Tierra Madre biologists observed an adult American Peregrine Falcon (*Falco peregrinus anatum*) "flying around one of the large hangars" (the northern one) at MCAS Tustin (Tierra Madre Consultants 1993a). This species is listed as Endangered by both the U. S. Fish and Wildlife Service and the California Fish and Game Commission; impacts to this species would be significant pursuant to NEPA and CEQA guidelines. Peregrine Falcons have adapted well to nesting on man-made structures (Calif. Dept. Fish and Game 1991, Ehrlich et al. 1992), so these hangars offer suitable nesting habitat. Furthermore, as Peregrine Falcons feed largely on Feral Pigeons or "Rock Doves" (*Columba livia*) in urban areas, a species that is common on-site, the potential for nesting falcons seemed reasonable. Focused surveys were conducted in April and May 1993 at MCAS Tustin to determine whether or not the species nested on-site. There were no subsequent observations of Peregrine Falcon at MCAS Tustin. Tierra Madre Consultants (1993b) therefore concluded that this species did not nest on-site; thus, the species would not be impacted and mitigation is not required. Nevertheless, the potential for future nesting on-site exists, and preservation of the blimp hangars could facilitate that nesting.

Wetlands, Streambeds, and Jurisdictional Waters of the United States

A wetlands delineation was conducted by Tierra Madre Consultants (1994) pursuant to

the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987). Vegetation was characterized according to the routine determination method described in that manual. Twelve sampling points were selected throughout the site. At each point, the dominant vegetation at each stratum (trees, shrubs, and herbs), the soil type, and hydrology were recorded in field notes for an area of about 100 square feet. At least five plant species were recorded for at least one of the strata present. Results of this sampling effort were provided by Tierra Madre Consultants (1994), including maps of MCAS Tustin showing sampling points and the extent of wetlands, streambeds, and jurisdictional waters of the United States.

Many of the channels in the southeastern portion of MCAS Tustin are jurisdictional wetlands, for a total of about 4.8 acres of wetlands, streambeds, and jurisdictional waters. The project requires consultation with regulatory agencies, as it falls under the jurisdiction of California Fish and Game Code and the Army Corps of Engineers (Corps). Current State and federal policies direct "no net loss" of wetlands. The Corps administers Section 404 of the Federal Clean Water Act, which requires permitting for discharge of dredged or fill material into "waters of the United States," including most wetlands. The project *may* be permitted under a Nationwide Permit 26 (headwaters and isolated waters discharge), instead of an individual permit (see U. S. Army Corps of Engineers 1991). Several conditions apply under the Nationwide Permit, including notification to the Corps if the project could affect Endangered species. The California Department of Fish and Game administers Section 1601 of the California Fish and Game code, which requires notification to Fish and Game for projects that would alter a streambed or lakebed. Impacts to wetlands along various on-site channels is unclear, but impacts to at least some probably cannot be avoided; thus, these permits will need to be obtained.

Recommended Mitigation Measures

As noted above, mitigation is not necessary for vernal pools or for American Peregrine Falcon, as vernal pools are lacking from the site and American Peregrine Falcon was not found to breed on-site. Potential impacts to Southwestern Pond Turtle and to wetlands, streambeds, and jurisdictional waters of the United States, however, do require mitigation. If the "avoid" option is chosen, mitigation for impacts to the turtle and to wetlands may be combined. The mitigation measures recommended below, if implemented, would reduce, to a level less than significant potential effects of the proposed project on species or habitats.

Southwestern Pond Turtle

Impacts to the occupied channel, the southeasternmost one (bordering Jamboree Road) on MCAS Tustin, should be avoided. This would include maintenance of an existing fence or construction of a new fence to limit human intrusion. If impacts cannot be avoided, Tierra Madre Consultants recommends compensating impacts by capturing and moving the entire population of Southwestern Pond Turtles on-site to a suitable off-site area that is protected or dedicated as open space. Impacts to this species may be minimized by widening the channel in the southeastern corner of the base and restoring habitat there. Rectifying impacts or reducing impacts over time are not feasible within given proposed re-use.

Wetlands

Tierra Madre Consultants (1994) provided a jurisdictional determination along the channels on site (see that document for maps of the on-site locations of wetlands, streambeds, and jurisdictional waters of the United States). The proposed project falls under the jurisdiction of California Fish and Game Code and the Army Corps of Engineers (Corps). The Corps administers

Section 404 of the Federal Clean Water Act, which requires permitting for discharge of dredged or fill material into "waters of the United States," including most wetlands. The project may be permitted under a Nationwide Permit, instead of an individual permit, if the wetlands delineation determines the stream on-site to be above the "headwaters." Several conditions apply under the Nationwide Permit, including notification to the Corps if the project could affect endangered species. The California Department of Fish and Game administers Section 1601 of the California Fish and Game code, which requires notification to Fish and Game for projects that would alter a streambed or lakebed.

Current state and federal policies direct "no net loss" of wetlands; thus, impacts to the wetlands, streambeds, and jurisdictional waters could be significant, although the extent to which these areas will be directly impacted is unclear. In any case, as the proposed development would likely act as a vector for human intrusion to these channels, impacts to wetlands are likely to take place. The level of significance of these impacts would depend on the level of use of the channels and of the extent to which fences or walls are constructed and maintained to limit human activities. To reduce the likelihood of human intrusion, and thus keep impacts to a level less than significant, Tierra Madre recommends that the project proponent either avoids the impacts by not impacting (e.g., filling) existing channels on-site and constructing walls or sturdy fences to deter human intrusion into these areas.

If avoidance is infeasible, mitigation would be necessary to compensate for impacts to wetlands, streambeds, and jurisdictional waters. Currently, agencies generally require 2:1 mitigation (two acres restored for every acre impacted) for restoration or revegetation efforts. For this project, if all on-site wetlands were impacted, a 9.6-acre mitigation area would be needed. Consultation with regulatory agencies would be necessary to determine the exact ratio of restoration or revegetation, as well selection of a suitable mitigation area. This mitigation area can be off-site or on-site, but agencies prefer the latter if feasible. The proposed 176-acre golf course could provide a suitable mitigation site, provided that additional steps were taken to ensure that the revegetated area received a constant, clean water supply (i.e., not tainted by fertilizer and herbicide run-off from the golf course) and that human disturbance was minimized. If pools were also created in this mitigation area, it could provide a location for transplanted Southwestern Pond Turtles.

The goals of mitigation should be (1) to preserve as much wetlands on-site as possible and (2) to provide compensatory mitigation for unavoidable impacts resulting from the proposed project. This goal would be achieved through establishment of cattail/willow scrub at a suitable off-site mitigation area. Mitigation goals for allowing establishment of cattail/willow scrub include: sustainability, resistance to invasion by exotics, nutrient retention, and biotic interactions. Cattail/willow scrub should be established within the mitigation area (this mitigation site may prove suitable for relocated pond turtles). This scrub will be substantially similar to that existing currently on-site. The cutting/seed mix for the revegetation plan should consist of the following species: Goodding's Black Willow (*S. gooddingii*), Southern Cattail (*Typha domingensis*), and Mulefat (*Baccharis salicifolia*). Habitat created should provide wildlife habitat values equivalent to those currently available on-site, including the four basic components of wildlife habitat: water, food, cover, and space. Habitat established through mitigation should be similar to existing habitat in terms of structure, species composition, and ecological processes within 5 years of implementation. Succession of the mitigated habitat to a stable community is expected to take 10 to 20 years.

The mitigation site should be selected as soon as possible. Furthermore, mitigation efforts should begin as soon as possible after the selection of a development plan and a mitigation site. As each portion MCAS Tustin may be sold and developed at different rates, impacts to wetlands and to Southwestern Pond Turtles may begin well before mitigation efforts, particularly if the golf course mitigation option is chosen and golf course construction starts much later. Southwestern Pond Turtles, obviously, need to be relocated prior to impacting the channel in which they occur. A time lag may exist, however, between impacts to wetlands, streambeds, and jurisdictional waters and actual mitigation for those impacts. This time lag should not be excessive (i.e., longer than one year), and every effort to begin revegetation efforts as quickly as possible.

Selection of Alternatives

With the exception of the "no project" option, none of the re-use options retains much open space. Of the development plans, Tierra Madre Consultants considers the "Proposed Action" the biologically preferred alternative, as it includes the most parkland (i.e., an urban regional park, several neighborhood parks, etc.).

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MARINE CORPS AIR STATION, TUSTIN:

WETLANDS, STREAMBEDS AND JURISDICTIONAL WATERS OF THE UNITED STATES

REVISED 12 JULY 1994

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TMC 92-103-2B

CERTIFICATION: I certify that the facts, statements, and information presented in this report and in the attached exhibits are true, correct, and complete to the best of my knowledge and belief.

TIERRA MADRE CONSULTANTS, INC.

_____ Date: _____

Scott D. White
Consulting Biologist

MARINE CORPS AIR STATION, TUSTIN: WETLANDS, STREAMBEDS AND JURISDICTIONAL WATERS OF THE UNITED STATES

Scott D. White
TIERRA MADRE CONSULTANTS, INC.
REVISED 12 JULY 1994

INTRODUCTION

This report was contracted by Cotton/ Beland/Associates to identify jurisdictional wetlands and Waters of the United States on the Marine Corps Air Station at Tustin (MCAS Tustin), based on the *Corps of Engineers Wetlands Delineation Manual* (Department of the Army Environmental Laboratory 1987), for the purpose of reuse planning. Biological resources at the site were addressed by Tierra Madre Consultants in a 1993 report which identified several areas as "potential wetlands" (Map 6 of the 1993 report) but did not delineate jurisdictional wetlands. Tierra Madre Consultants prepared a wetlands delineation based on these "potential wetlands" (14 April 1994). After reviewing the report, Marine Corps resource personnel recommended consideration of drainage channels near Moffett Dr. not considered in the first wetlands delineation. This revised report includes all information from the original report, and considers additional sites recommended by the Corps. All sites examined as "potential wetlands" are shown on Map 1.

Section 404 of the Federal Clean Water Act requires permitting of activities that would result in discharge of dredge or fill material into "waters of the United States" or adjacent wetlands. Sections 1601-1603 of the California Fish and Game code require a "Streambed Alteration Agreement" for projects which would alter stream channels. These statutes may apply to eventual reuse plans for the MCAS Tustin site; State and federal policies direct "no net loss" of wetlands.

JURISDICTIONAL CRITERIA: Section 404 of the federal Clean Water Act applies to "Waters of the United States." By definition, these include all waterways, streams and intermittent streams which could be used for interstate commerce, and their tributaries. In tidal waters, Corps jurisdiction extends to the high tide line. In non-tidal waters, jurisdictional limits are "ordinary high water marks" such as stream banks. Where wetlands occur above high tide or high water marks, they are considered "adjacent wetlands" and are included within Corps jurisdiction.

The term "interstate commerce" has been broadly interpreted to include use by migratory waterfowl or out-of-state tourists, and Corps jurisdiction has often been extended to wetlands not adjacent to waters of the US ("isolated wetlands").

Section 1603 of the state Fish and Game Code is applied to stream channels, defined elsewhere in the Code as follows:

> A stream is a body of water that flows at least periodically . . . through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.

The state definition does not specify a flow rate or inundation frequency, and provides no clear distinction between jurisdictional and non-jurisdictional lands.

EVALUATION CRITERIA: According to the Clean Water Act and the *Delineation Manual*, a "wetland" is a site that is

> inundated or saturated . . . at a frequency and duration sufficient to support . . . vegetation typically adapted for life in saturated soil conditions. . . .

Soil saturation deprives plant roots of oxygen, limiting the types of plants which can grow. Absence of oxygen leads to "reducing" chemical conditions (rather than oxidizing conditions) and development of hydric soils. The Corps evaluates "wetlands" by three criteria: hydrology, soils, and vegetation. Under the federal delineation procedure, a site must normally satisfy all three criteria to be classified as a wetland. CDF&G may regard a site as a wetland based on any two of these criteria.

The hydrology criterion evaluates the presence of water on a site based on direct observation or on indirect evidence (e.g., high water marks or sediment deposits). The soils criterion is based on hydric soil characteristics, including certain colors and mottling, which develop under wetlands conditions. The vegetation criterion evaluates dominant plant species. Most plants cannot survive extended periods of root saturation, and are called "obligate upland" species. Others grow almost exclusively in wetlands habitats, or on both wetlands and uplands. These are called "obligate wetlands" or "facultative wetlands" species, respectively.

METHODS

The potential occurrence of wetlands and jurisdictional waters of the US on the MCAS Tustin site was evaluated through a literature review and site visits on 30 March and 7 July 1994. Tierra Madre Consultants reviewed soils maps and descriptions (Wachtell 1978) topographic maps (USDI Geological Survey 1965), and the list of wetland plants in California (Appendix O to the *Delineation Manual*), and Tierra Madre Consultants' Biological Assessment (1993).

Sites indicated as "potential wetlands" in the 1993 report were evaluated in the field and labeled (1 through 9) for reference in the field and in this report. Additional sites recommended for consideration by the Marine Corps were labeled 10-12 (Map 1). Several areas identified earlier as "potential wetlands" were not examined: Drainage channels along Warner Avenue, Edinger Avenue, and part of Peters Canyon Channel are not within the MCAS boundary (HNTB 1993) and are not considered further. An open lot within the US Army Reserve site, at the corner of Jamboree Road and Barranca Parkway (site 7 on Map 1), and Peters Canyon Channel (site 9) were viewed with binoculars but were not visited because access could not be obtained through the MCAS Tustin Base Command.

Soils mapped on the site (Wachtell 1978) were compared to the Soil Conservation Service's (SCS) list of "hydric soils" occurring in the region (1992). During the site visit, soil conditions in potential wetlands were noted and those differing from the SCS descriptions were examined by digging soil pits where necessary.

Dominant plant species were noted at each "potential wetland" site. These lists of dominant plant species were compared against Appendix O of the *Delineation Manual* which lists wetland plants of California. The vegetation criterion for wetlands is satisfied if half or more of the dominant plant species on

a site are "obligate wetland," "facultative wetland," or "facultative" species (OBL, FACW, or FAC, respectively). Plants were identified using keys, descriptions, and illustrations in Abrams (1923, 1944, 1951), Ahrams and Ferris (1960), Hickman (1993), Mason (1957), and Munz (1974).

RESULTS

HYDROLOGY: All sites identified as "potential wetlands" in the 1993 report meet the Corps' hydrology criterion, because all were inundated during field work for that report. Sites 1, 2, 4, 5, and 9-12 were also inundated during field visit for this wetlands delineation.

To the best of Tierra Madre Consultants' knowledge, water at most potential wetland sites considered in this report is supplied entirely or primarily hy natural sources. Sites 11 and 12 are exceptions hecause they are evidently supplied primarily by irrigation runoff. Drainage channels originating on the Base (Tables 1, 2, and 3; sites 1, 2, 4, 5, 6, and 10) carry natural flow from the Base or are deep enough to intercept the natural water table. Peters Canyon Channel (site 9) carries natural flow and urban runoff originating to the north and west. Open fields (sites 3, 7, and 8) are occasionally inundated by rainfall.

SOILS: Most "potential wetlands" sites examined for this report are mapped as "Chino silty clay loam, drained" (Wachtell 1978). Peters Canyon Channel also includes "Chino silty clay loam," "Omni clay," and "Omni clay, drained." None of these is included in the list of hydric soils for the area (USDA Soil Conservation Service 1992).

Mapping units, as defined by the Soil Conservation Service, are not composed entirely of the soil type they are named for. The "Chino" mapping units are predominantly Chino soils, but include patches of Bolsa, Omni, and Mocho soils, and tidal flats. The Omni clay mapping units include patches of Bolsa, Chino, and Cropley clay soils. Among these soils, only tidal flats are considered hydric soils (USDA Soil Conservation Service 1992). No tidal flats occur at MCAS Tustin.

Soils were examined at several potential wetland sites (Map 1) during the field visit. Sites 1, 2, 4, 5, 10, and 11 exhibited hydric soil characteristics. Results of the field survey are summarized in Table 1.

VEGETATION: Dominant plant species at all except two sites meet the Corps criterion as hydrophytic vegetation. These two sites are the Army Reserve area (7) and a field near San Joaquin Channel (8). Vegetation is described in Table 2.

CONCLUSIONS

WETLANDS: Federally jurisdictional wetlands occur in San Joaquin Channel and several of its tributaries (Map 2). Peters Canyon Channel was not examined in the field hecause Base Command at MCAS Tustin does not have access to the site. Tierra Madre Consultants understands that Peters Canyon Channel is under jurisdiction of Orange County, and would not likely be modified by any re-use plan for the hase. During the field visit, plants and soils in the channel could not be identified hy viewing through hinoculars from Moffet Road, hut vegetation appeared to meet the Corps' criterion as "hydrophytic." Standing and running water was present, and the channel certainly meets the Corps' hydrology criterion. Tierra Madre Consultants helieves that Peters Canyon Channel will meet criteria as a wetland.

WATERS OF THE UNITED STATES: All drainage channels considered in this report meet criteria as jurisdictional Waters of the United States because they are tributaries to waterways which support migratory birds (Peters' Canyon Channel). Open fields which sometimes are inundated by rainwater are not jurisdictional Waters of the US because they are not tributaries to drainage channels, and do not meet criteria as wetlands.

Table 1. Soil characteristics of potential wetlands on MCAS Tustin.

	Map reference and description	Soil description	Meets hydric soil criterion?
1.	Drainage channel directly east of southern blimp hanger	Fine silty soil, dark organic material in layer near surface.	YES
2.	Drainage channel directly north of southern blimp hanger	Mottled; unstained matrix =7.5 YR 5/4; mottles 7.5 YR 3/0. Also, dark organic material in layer near surface.	YES
3.	Field immediately adjacent to 2	Red, no mottling, no organic accumulation.	NO
4.	Drainage channel directly south of southern blimp hanger (San Joaquin Channel)	Fine silty soil, dark organic material in layer near surface.	YES
5.	Drainage channel west of southern blimp hanger	Mottled; unstained matrix =7.5 YR 5/4; mottles 7.5 YR 3/0. Also, dark organic material in layer near surface.	YES
6.	Slightly upstream from site 5	Red, no mottling, no organic accumulation.	NO
7.	"Unimproved area" on Army Reserve site	Not examined.	NOT EXPECTED
8.	Open field south of site 1	Densely compacted, similar to soil at site 3.	NO
9.	Peters Canyon Channel	Not examined	UNKNOWN
10.	Upstream of site 4, drainage channel from Moffett Dr. to landing pad	Fine silty soil, dark organic material in layer near surface.	YES
11.	Upstream of site 10, northeast of Moffett Dr.	Fine silty soil, dark organic material in layer near surface.	YES
12.	Upstream (southeast) of 11	Red, no mottling, no surface accumulation.	NO

Table 2. Vegetation at potential wetlands sites on MCAS Tustin.

Map reference and description	Dominant plants and hydrophytic status	Indicator status	Meets vegetation criterion?
1. Drainage channel directly east of southern blimp hanger	*Typha domingensis* (Dense cattail stand; no other dominant plants)	OBL	YES
2. Drainage channel directly north of southern blimp hanger	*Salix gooddingii*	OBL	YES
	Baccharis salicifolia	FACW	
	Typha domingensis	OBL	
	Scirpus californicus	OBL	
3. Field immediately adjacent to 2	*Salix gooddingii*	OBL	YES
	Baccharis salicifolia	FACW	
	Brassica nigra	ϕ	
	Picris echioides	ϕ	
4. Drainage channel directly south of southern blimp hanger	*Baccharis salicifolia*	FACW	YES
	Typha domingensis	OBL	
5. Drainage channel west of southern blimp hanger	*Baccharis salicifolia*	FACW	YES
	Typha domingensis	OBL	
	Scirpus californicus	OBL	
	Cyperus sp.	FACW	
6. Same channel as 5; slightly upstream	*Hordeum murinum*	ϕ	NO
	Bromus sp.	ϕ	
	Brassica nigra	ϕ	
7. "Unimproved area" on Army Reserve site	*Hordeum murinum*	ϕ	NO
	Bromus sp.	ϕ	
	Brassica nigra	ϕ	
8. Open field south of 1	*Hordeum murinum*	ϕ	NO
	Bromus sp.	ϕ	
	Brassica nigra	ϕ	
9. Peters Canyon Channel	Not examined		UNKNOWN
10. Upstream of site 4, drainage channel from Moffett Dr. to landing pad	*Typha domingensis*	OBL	YES
	Scirpus californicus	OBL	
	Scirpus robustus	OBL	
	Cyperus sp.	OBL	
	Leptochloa uninervia	FACW	

Footnotes on following page.

Table 2 continued.

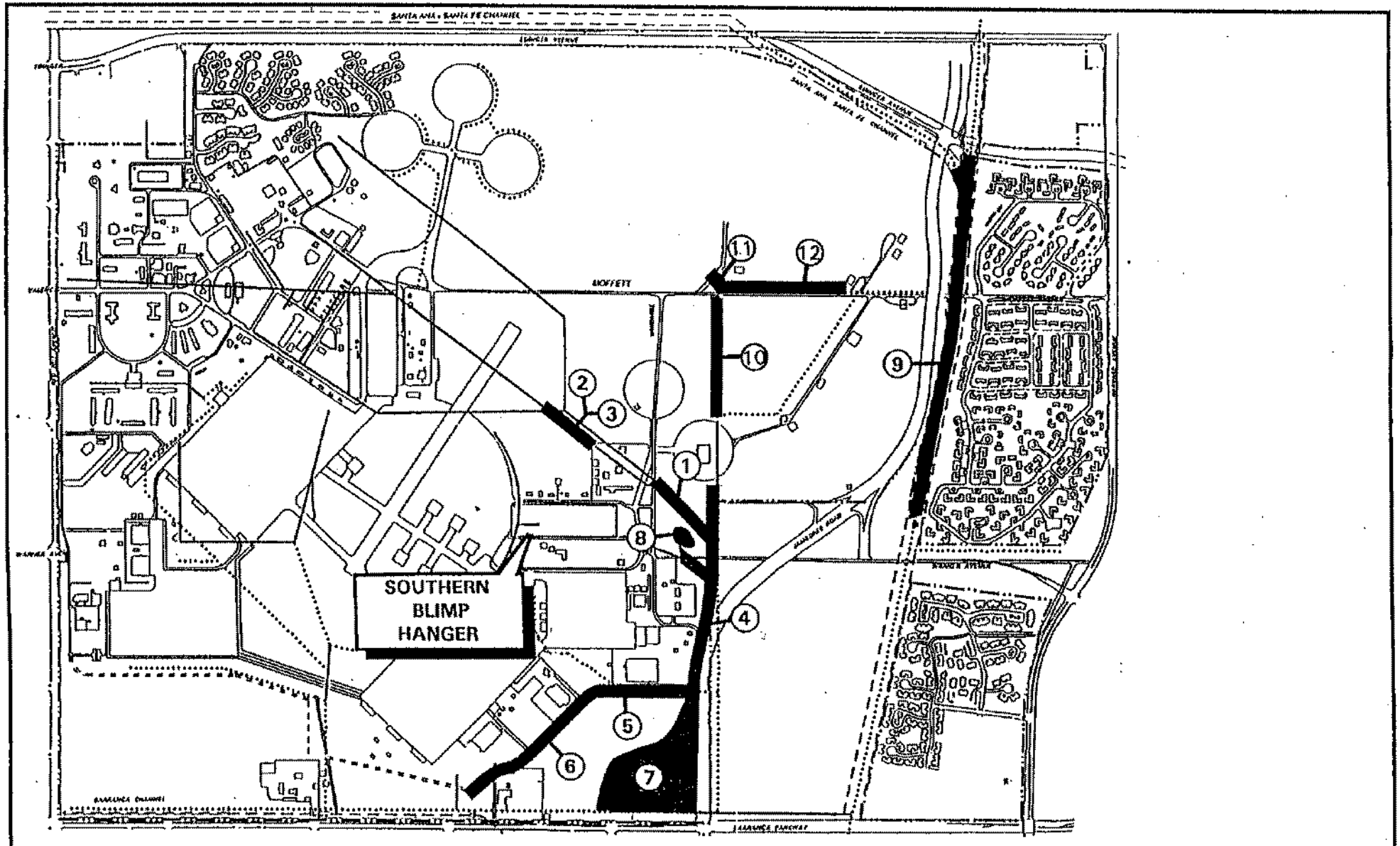
Map reference and description	Dominant plants and hydrophytic status	Indicator status	Meets vegetation criterion?
11. Upstream of site 10, northeast of Moffett Dr.	same as 10		YES
12. Upstream (southeast) of 11	*Atriplex semibaccata*	FAC	NO
	Chenopodium cf. berlanderi	ϕ	
	Cynodon dactylon	ϕ	
	Polypogon monspeliensis	FACW-	
	Sida leprosa	ϕ	

Indicator status from US Department of the Army Environmental Laboratory (1987) Appendix O. Nomenclature follows Hickman (1993).

Status codes: **OBL**: Obligate wetland species (>99% of occurrences are in wetlands). **FACW**: Facultative wetland species (>67% of occurrences in wetlands). **FAC**: Facultative species (33% to 67% of occurrences in wetlands). **FACU**: Facultative upland species (<33% of occurrences in wetlands). **UPL**: Obligate upland species (<1% of occurrences in wetlands). **ϕ**: Not included in Appendix O, treated here as UPL.

Table 3. Summary of wetlands criteria and jurisdictional status of potential wetlands sites on MCAS Tustin.

Map reference and description	Hydrology criterion	Soils criterion	Vegetation criterion	Jurisdictional wetland?	Jurisdictional Waters of US?
1. Drainage channel directly east of southern blimp hanger	YES	YES	YES	YES	YES
2. Drainage channel directly north of southern blimp hanger	YES	YES	YES	YES	YES
3. Field immediately adjacent to 2	NO	NO	YES	NO	NO
4. Drainage channel directly south of southern blimp hanger	YES	YES	YES	YES	YES
5. Drainage channel west of southern blimp hanger	YES	YES	YES	YES	YES
6. Same channel as 5; slightly upstream	YES	NO	NO	NO	YES
7. "Unimproved area" on Army Reserve site	YES	NO (?)	NO	NO	NO
8. Open field south of 1	YES	NO	NO	NO	NO
9. Peters Canyon Channel	YES	?	YES (?)	YES (?)	YES
10. Upstream of site 4, drainage channel from Moffett Dr. to landing pad	YES	YES	YES	YES	YES
11. Upstream of site 10, northeast of Moffett Dr.	YES	YES	YES	YES	YES
12. Upstream (southeast) of 11	YES	NO	NO	NO	YES



MAP 1. TUSTIN MARINE CORPS AIR STATION: Potential Wetland Areas.

■ Potential Wetland Areas

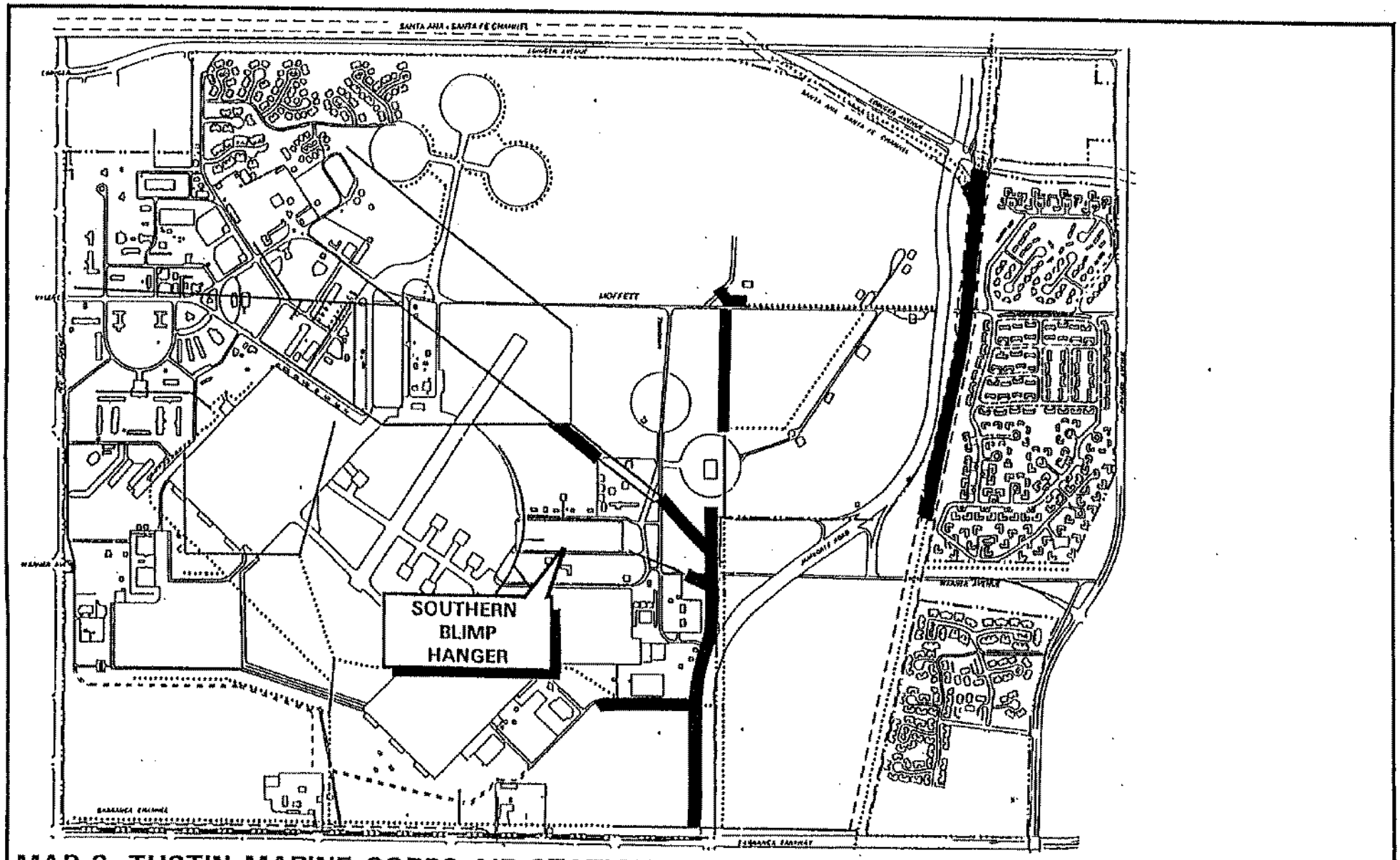
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Tierra Madre Consultants

MAP SOURCE: HNTB.

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MAP 2. TUSTIN MARINE CORPS AIR STATION: Jurisdictional Wetland Areas.

■ Jurisdictional Wetland Areas

MAP SOURCE: HNTB.

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Tierra Madre Consultants

TMC #92-103

7/12/94:mp

Marine Corps Air Station, Tustin

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26 January 1994

26 January 1994

John Bridges
Cotton/Beland/Associates
747 East Green Street, Suite 400
Pasadena, California 91101-2119

Re: Survey of additional areas at Marine Corps Air Station, Tustin

Dear Mr. Bridges,

Scott White and I visited Marine Corps Air Station (MCAS), Tustin on Friday, 21 January 1994 to survey those areas in the northeastern and southeastern portions of the Station which were not included in Tierra Madre Consultants' biological assessment (dated 11 March 1993). These additional areas include a 26-acre parcel at the intersection of Edinger and Harvard in the northeastern corner of the Station, and several hundred acres in the southwestern corner at Harvard and Barranca.

For two hours in the early afternoon, we walked the perimeter of the site that was accesible without entering the base. Weather conditions were favorable: mostly overcast, sligbt westerly breeze, and moderate temperature. Most of the site was developed as residential bousing. The remainder was open, rather barren, dirt fields. These fields supported mostly non-native invasive plants, sucb as Russian Thistle (*Salsola tragus*), and little wildlife. Aside from a drainage ditch that flows roughly east-west just north of Warner, and then bends southward to cross under Warner, impacts to the areas we surveyed on 21 January would not be significant pursuant to Guidelines of the California Environmental Quality Act (CEQA).

This drainage ditch may be a jurisdictional wetland (see the attached map), and impacts to it may be significant. This area, like potential wetlands identified in Tierra Madre Consultants' biological assessment, should be formally evaluated to determine wbether or not it meets State or federal wetlands criteria. Once this task is complete, consultation with the U. S. Army Corps of Engineers and the California Department of Fish and Game should be initiated to obtain the appropriate permits and to determine the appropriate level of mitigation needed to reduce impacts to wetlands to a level less than significant. Current State and federal policies direct "no net loss" of wetlands.

The "not net loss" of wetlands policy often requires mitigation in the form of wetlands restoration or creation at a specified ratio (a certain number of acres created for every one acre impacted), depending on the quality of existing habitat and the nature of impacts to it. Given the nature of the potential wetlands on MCAS Tustin (human-created and maintained drainage ditches with hydrology from residential and agricultural run-off and stormwater), Tierra Madre Consultants anticipates that 1:1 mitigation would satisfy regulatory agencies, and we do not anticipate a ratio of higher than 2:1 would be required. Final determination of mitigation, however, will be made by Army Corps and California Fish and Game.

Please feel free to contact us if you have any questions or comments.

Sincerely,

Michael A. Patten
Consulting Biologist

MCAS Tustin Re-Use : Response to Comments

Tierra Madre Consultants recommends the following responses to comments regarding the Biological Assessment conducted for the Marine Corps Air Station (MCAS) Tustin Re-Use Project Site (Tierra Madre Consultants 1993a). Commentor's statements are paraphrased below (i.e., they are not direct quotes).

Comment (1). Clarify the reason(s) that vernal pools are considered absent from the project site.

Response to comment (1). Follow-up surveys were conducted by Tierra Madre Consultants (1993b) following heavy rains in the spring of 1993. There appeared to be sufficient percolation into the soil to make standing water more ephemeral than is typical for vernal pools. Furthermore, no obligate vernal pool plants or animals were found in the areas identified. Tierra Madre recommends that wording be included in the MCAS Tustin Environmental Impact Statement/Environmental Impact Report (EIS/EIR) indicating what efforts were made to determine vernal pool presence/absence.

Comment (2). What are the criteria for State and federal jurisdictional wetlands?

Response to comment (2). Three criteria must be satisified to meet the federal definition of a wetland: hydrology, soils, and hydrophytic vegetation. In other words, if hydrology indicates water flow, and soils and vegetation are both wetland types, then the area in question is defined as a wetland. These criteria are defined in detail in by the U. S. Army Corps of Engineers Environmental Laboratory (1987). The State may consider an area a wetland if any two of these three criteria are met.

Comment (3). Why were wetlands delineations not conducted "now"?

Response to comment (3). Delineating wetlands on MCAS Tustin was not in Tierra Madre Consultants' contract, and Tierra Madre was specifically asked by Navy personnel (Mitchell Perdue, Southwest Division, Naval Facilities Engineering Command) not to perform this task.

Comment (4). On-site vegetation needs to be specified, including the "treescape" in the village area. Does the plant list in the Appendix include just native species?

Response to comment (4). All species detected on-site growing in "natural" conditions, whether native or non-native, were included by Tierra Madre Consultants (1993a). Tierra Madre excluded plants (e.g., cauliflower) in agricultural areas and trees and shrubs around residences, as all of these were deliberately planted and maintainted on-site. Instead, we concentrated on areas that provided potentially "natural" wildlife habitat. No effort was made to catalog or identify every landscaped trees and shrubs in the village, as a plant palette for this area was assumed to exist. Furthermore, whereas the treescape has aesthetic value, it has little wildlife habitat value, and was therefore not considered in the biological resources portion of the EIS/EIR.

Comment (5). Bird and mammal species noted on-site need to be summarized.

Response to comment (5). These species were summarized by Tierra Madre Consultants (1993a). We recommend that this summary be incorporated into the EIS/EIR.

Comment (6). The statement that "agricultural fields on MCAS Tustin provide the most valuable habitat in the local area" conflicts with the previous statement that "the station provides minimal habitat value and supports low diversity and low abundance of wildlife."

Response to comment (6). Whereas MCAS Tustin provides minimal habitat for native plants and animals, compared to a natural site, open areas on-site do provide higher habitat value than surrounding business parks.

Comment (7). Are the statements about sensitive species applicable only to those species at MCAS Tustin?

Response to comment (7). The opening paragraph to the "Sensitive, Threatened, and Endangered Species" section discusses sensitive species in general terms. Specific information about their potential occurrence on MCAS Tustin was provided by Tierra Madre Consultants (1993a, 1993b) and on p. 4.5-5 of the EIS/EIR.

Comment (8). Need to modify statement about vernal pools in the discussion about sensitive habitats.

Response to comment (8). The statement, as written, only indicates that vernal pools are an example of a sensitive habitat, and does not say one way or the other about their occurrence on MCAS Tustin. This example may be deleted without loss of clarity.

Comment (9). Describe where San Joaquin Channel is located.

Response to comment (9). It is located in the southeastern portion of the project site, along Jamboree Road.

Comment (10). The City of Tustin makes no determinations what comprises sensitive habitats.

Response to comment (10). Delete "City of Tustin" from the list.

Comment (11). Statements about an on-site breeding population of Southwestern Pond Turtles are vague.

Response to comment (11). Field surveys conducted on-site were not exhaustive. Instead, they were sufficient only to determine presence of Southwestern Pond Turtle, not whether a breeding population was present. It is unknown whether or not a viable breeding of pond turtles exists in San Joaquin Channel, but it is Tierra Madre Consultants' opinion that a viable breeding population is unlikely to exist there.

Comment (12). Sensitive flora and fauna should be summarized in a narrative, not just mentioned in Table 2 of the Appendix.

Response to comment (12). This information was supplied by Tierra Madre Consultants (1993a). We recommend incorporating it into the EIS/EIR.

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Tierra Madre Consultants. 1993b. Marine Corps Air Station, Tustin: Focused biological surveys. Unpubl. report prepared by Tierra Madre Consultants, Inc. (job no. 92-103-2B) for Cotton/Beland/Associates, 747 East Green St., Suite 400, Pasadena, Calif. 91101.

MARINE CORPS AIR STATION, TUSTIN
FOCUSED BIOLOGICAL SURVEYS

Prepared For:

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July 29 1993
TMC 92-103-2B

CERTIFICATION: We hereby certify that the statements furnished in this report and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true, correct, and complete to the best of our knowledge and belief.

TIERRA MADRE CONSULTANTS, INC.

Scott White

Scott White
Consulting Biologist

Date: July 29 93

Kent R. Beaman
Consulting Biologist

Date: 7-29-93

Marine Corps Air Station, Tustin: Focused Biological Surveys

Scott White and Kent R. Beaman
Tierra Madre Consultants, Inc.

July 29 1993

Introduction

This report was contracted by Cotton/Beland/Associates to follow-up a biological assessment on the Marine Corps Air Station Tustin (MCAS Tustin) prepared by. Tierra Madre Consultants (1993). During fieldwork for the earlier report, we identified a site on the base with potential to support rare vernal pool plants, we noted a peregrine falcon near a historic blimp hanger, and we noted potential habitat for southwestern pond turtle in San Joaquin Channel. Our report concluded that impacts to any of these three resources would be significant under the California Environmental Quality Act (CEQA) and recommended further surveys to determine presence or absence.

Methods

Scott White reviewed the California Natural Diversity Data Base (CNDDB 1993), California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (Fourth edition; Smith and Berg 1988, and Draft Fifth edition, Skinner and Pavlik *in prep.*) to determine which sensitive vernal pool species occur in the area.

White and John R. Easton (of Tierra Madre Consultants) visited MCAS Tustin on April 28 1993 to examine the potential vernal pool site and San Joaquin Channel, and to look for evidence of nesting peregrine falcons. We carefully examined the potential vernal pool site identifying or collecting specimens of all plant species noted. Specimens of uncertain identity were subsequently identified from keys, descriptions and illustrations in Abrams (1923, 1944, 1951), Abrams and Ferris (1960), Hickman (ed., 1993) Mason (1957) and Munz (1974). Some plants were identified or confirmed by Andrew C. Sanders, curator of the University of California, Riverside Herbarium. A list of all species noted on the site is included in an Appendix.

White and Easton also walked the length of San Joaquin channel, searching for turtles or their sign, and closely examined blimp hanger roofs for evidence of nesting falcons. Kent Beaman visited MCAS Tustin on June 30 to reexamine the channel and blimp hangers. A total of about 12 person-hours were spent surveying the site.

Results

We found no sensitive plants or vernal pool indicators at the site identified earlier as a potential vernal pool. Twenty-five of the 30 species identified on the site are not native to California, and many are invasive weeds. Vegetation on the site does not match vernal pool characteristics described by Holland and Jain (1977) or Zedler (1987). Tierra Madre Consultants concludes that no vernal pool occurs at MCAS Tustin.

Beaman detected one southwestern pond turtle in San Joaquin Channel. It was viewed for several minutes from a distance of about ten feet; its markings clearly distinguished it from species commonly sold as pets and sometimes released into local waterways. We conclude that southwestern pond turtle occurs in the channel, but we cannot state how many individuals are present or whether it is part of a viable breeding population.

We saw no peregrine falcons or evidence of large raptor nests on blimp hangers during either field visit. Tierra Madre Consultants concludes that nesting peregrine falcons are absent from the site.

Discussion

Under CEQA Guidelines, if a project would "substantially affect a rare or endangered species of animal or plant or the habitat of the species" then a lead agency must find that the project would have a "significant effect" (Appendix G). CEQA provides several definitions of "rare" as it applies here, including listing as Threatened or Endangered under either state or federal Endangered Species Acts and the following additional definition in section 15380 (b) (2) (B):

> "The species is likely to become endangered within the foreseeable future and may be considered as "threatened" as that term is used in the Federal Endangered Species Act."

and, in section 15380 (d):

> "A species not included in any listing identified in subsection (c) [state or federal Endangered Species Acts] shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria of subsection (b)." [Applicable language quoted above.]

In Appendix G, the guidelines also require that a lead agency find that a project would have significant effects if it would "Interfere substantially with the movement of any resident or migratory fish or wildlife species;" or "Substantially diminish habitat for fish, wildlife or plants."

Tierra Madre Consultants used these definitions of significant effects to evaluate significance of potential affects to southwestern pond turtles at MCAS Tustin. We are unaware of any specific project proposal, so we cannot determine whether proposed development of the site would actually impact turtles or their habitat.

Southwestern pond turtle (*Clemmys marmorata pallida*) is a Category 1 Candidate for federal listing as Threatened or Endangered (USDI Fish and Wildlife Service 1991). Category 1 Candidates are defined as

> Taxa for which the [Fish and Wildlife] Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species....

Further, the Service has been petitioned to list western pond turtle (*Clemmys marmorata*, regardless of subspecies) as Endangered throughout much of its range, including southern California, under the federal Endangered Species Act (Holland 1992). We have not seen the petition, but its authors are well-respected herpetologists and we anticipate that it is sufficiently documented to support listing.

Based on its status with FWS and its petitioned listing, Tierra Madre Consultants concludes that impacts to southwestern pond turtle would be significant under CEQA. Depending on the outcome and timing of the listing petition, impacts to pond turtles could require Section 7 consultation with FWS or a Section 10(a) permit under the Endangered Species Act.

Southwestern pond turtles live near permanent open water but lay eggs on sand banks or in upland habitat, often well-away from streams or ponds (Rathbun *et al. 1992*, Zeiner *et al.* 1988). San Joaquin Channel is a narrow, V-shaped flood control channel without nesting habitat within its banks. To build nests, western pond turtles would need to climb out of the channel and use adjacent upland habitat: a disturbed weedy field with compacted soil. Adjacent habitat does not seem likely to provide suitable nest sites, though we cannot rule out the possibility (Zeiner *et al.* cite a report of turtles nesting in a clover field). In our view, MCAS Tustin is unlikely to support a breeding pond turtle population.

If pond turtles do not breed on the base and are isolated from other populations, then impacts to the channel would probably best be mitigated by relocating the pond turtles to more suitable habitat off-site. If, instead, they are part of a breeding population (perhaps including confluent reaches of the channel up- or downstream), then San Joaquin Channel and adjacent uplands must be considered suitable pond turtle habitat and impacts to the habitat itself should be fully mitigated or avoided.

MITIGATION MONITORING

California law requires that mitigation measures imposed under CEQA be monitored to ensure compliance with CEQA. In Tierra Madre Consultants' view, monitoring should be the responsibility of an agency or private foundation with dependable long-term funding and which can be reasonably expected to fulfill a long-term monitoring responsibility. We recommend development of a mitigation monitoring plan for any measures designed to mitigate impacts to western pond turtles. The monitoring plan should include elements to assure each of the following:

1. That mitigation measures are carried out as required by each project adopted.

2. That mitigation measures meet their intent as stated in each project proposal.

3. That corrective measures shall be implemented if monitoring determines that mitigation measures have not met their intent.

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APPENDIX: PLANT SPECIES LIST

This list reports only plants observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season. Plants were identified from keys, descriptions and drawings in Abrams 1923, 1944, 1951, Abrams and Ferris 1960, Hickman (ed.) 1993, Mason 1957, and Munz 1974. Some specimens were identified or confirmed by Andrew C. Sanders (UC Riverside Herbarium). Unless noted otherwise, nomenclature and systematics follows Hickman (ed.) 1993. Where other names are also in use, they are noted in parentheses.

DICOT ANGIOSPERMS

DICOT FLOWERING PLANTS

Asteraceae		**Sunflower family**
	Aster sp.	Unidentified aster
*	*Centaurea melitensis*	Star thistle
*	*Cotula coronopifolia*	African brass buttons
*	*Cynara cardunculus*	Artichoke thistle (Mediterranean origin)
*	*Picris echioides*	European bristly ox-tongue
*	*Sonchus asper*	European prickly sow-thistle
*	*Sonchus oleraceus*	European common sow-thistle
Brassicaceae		**Mustard family**
*	*Raphanus sativus*	European wild radish
*	*Sisymbrium irio*	London rocket
Caryophyllaceae		**Carnation family**
*	*Spergularia marina*	Salt marsh sand-spurry
Chenopodiaceae		**Saltbush family**
*	*Atriplex semibaccata*	Australian saltbush
*	*Bassia hyssopifolia*	Five-hook bassia
*	*Beta vulgaris*	Agricultural beet
Convolvulaceae		**Morning-glory family**
*	*Convolvulus arvensis*	European bindweed
	Cressa truxillensis	Alkali weed
Fabaceae		**Pea family**
*	*Melilotus indicus*	India sweet-clover
Polygonaceae		**Buckwheat family**
*	*Polygonum arenastrum* (often identified as *P. aviculare*)	Eurpoean common knotweed
*	*Rumex crispus*	Curly dock
Primulaceae		**Primrose family**
*	*Anagallis arvensis*	European scarlet pimpernel
Zygophyllaceae		**Caltrop family**
*	*Tribulus terrestris*	Puncture vine (Mediterranean)

SYMBOLS AND ABBREVIATIONS:

*	Non-native (introduced) species.
cf.	Uncertain identification, but plant specimen "compares favorably" to named species (from Latin *confer*: compare [with]).
sp.	Plant identified only to genus; species unknown (plural = spp.).

APPENDIX: PLANT SPECIES LIST, continued.

MONOCOT ANGIOSPERMS	MONOCOT FLOWERING PLANTS
Cyperaceae	Sedge family
Scirpus californicus	California bulrush
Scirpus maritimus	Tule bulrush
Poaceae	Grass family
* *Bromus hordeaceus* (syn. *B. mollis*)	Soft chess
* *Bromus madritensis* ssp. *rubens* (syn. *B. rubens*)	Red brome
* *Hordeum marinum* (syn. *H. geniculatum*)	Mediterranean barley
* *Hordeum murinum*	Hare barley
* *Phalaris minor*	Mediterranean canary grass
* *Poa annua*	European annual bluegrass
* *Polypogon monspeliensis*	Rabbitfoot grass
Typhaceae	Cattail family
Typha sp.	Cattail seedlings

Marine Corps Air Station, Tustin

Report for a Biological Assessment

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CERTIFICATION: We certify that the statements furnished in this report and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information present are true and complete to the best of our knowledge.

TIERRA MADRE CONSULTANTS, INC.

11 March 1993

Michael A. Patten
Field Biologist/Ornithologist

Scott White
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Field Biologist/Ornithologist

Marine Corps Air Station, Tustin

Report for a
Biological Assessment

Tierra Madre Consultants, Inc.

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Marine Corps Air Station, Tustin
Report for a Biological Assessment

11 March 1993

PROJECT SUMMARY: Marine Corps Air Station, Tustin (MCAS Tustin) is located within "sections" 9, 10, 46, 47, and 62 of Township 5 south, Range 9 west of the Tustin U.S.G.S. 7.5' Quadrangle. MCAS Tustin is scheduled to close in July 1997. The Marine Corps and the City of Tustin are exploring ways in which the Station may be re-used, either as parkland/open space or as commericial development, or some combination of the two. As part of this "opportunity and constraints" assessment, Tierra Madre Consultants, Inc. was contracted by Cotton/Beland/Associates (C/B/A) to prepare a biological assessment of the Station for inclusion in an combined Environmental Impact Report/Study following the guidelines of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). This report details the findings of a literature review and five field visits as part of a general biological assessment (Tier 1) of the C/B/A contract. Focused surveys for sensitive elements identified as potentially occurring on the Station will be part of a following report contracted by C/B/A (Tier 2). Tier 2 focused surveys will be needed for three sensitive elements: (1) the potential occurrence of Southwestern Pond Turtle, (2) the potential occurrence of nesting Peregrine Falcons, and (3) identification of a potential vernal pool.

MCAS Tustin has been developed extensively as housing and for Marine Corps activites (e.g., flight lines, bunkers, hangars, etc.). Acreage not impacted by development is outleased for agriculture use. No "native" habitat remains on the Station. Instead, MCAS Tustin supports agricultural fields, grass/weed fields, and ornamental trees, shrubs, and lawns. Plant and animal diversity and abundance is low, and the species that do occur are typical of disturbed/ruderal situations. The channel system flowing along or near the northern and eastern boundaries of the Station (called the Santa Ana/Santa Fe and Peters Canyon channels) has been identified as a wetland by the Soil Conservation Service (1992). A wetlands delineation will be needed in this area of the Station, as well as in other drainage course and channels.

Tierra Madre located a few sensitive species on the Station. A review of literature for the site indicates that the Southwestern Pond Turtle, a species recently petitioned for listing as federally endangered (*Herpetol. Review* 23:6, 1992), occurs, at least formerly, in the fresh-water channels on-site (Soil Conservation Service 1992, M. Drilling pers. comm.). Focused surveys will need to be conducted to determine the presence/absence and population of this species.

Several sensitive raptor species have been observed on the site, including Black-shouldered Kite (Ledendecker *et al.* 1987) and the Burrowing Owl (Brown and Caldwell 1985, M. Purdue pers. comm.). The agricultural and weedy areas on-site provide suitable foraging habitat for Northern Harriers and Ferruginous Hawks, although the latter species is quite rare in Orange County. Trees around the housing tract in the northwestern corner likely provide roosting and foraging sites for Sharp-shinned and Cooper's hawks. None of these species are listed as threatened or endangered by state or federal agencies. Aside from the kite, all of these raptor species are designated California "Species of Special Concern," at least as breeding species; the kite is considered a "Special Animal" by the California Department of Fish and Game. Myers and Patten observed an American Peregrine Falcon flying around one of the large hangars on 9 March 1993. Focused surveys will need to be conducted to determine the nesting status of this species on the Station.

A potential vernal pool was identified near the southeastern corner of the Station. Focused surveys will need to be conducted to determine if this pool is a vernal pool or simply a "rain puddle."

Marine Corps Air Station, Tustin
Report for a
Biological Assessment

Tierra Madre Consultants, Inc.

Project and Property Description

Marine Corps Air Station, Tustin (hereinafter "MCAS Tustin" or "the Station") is located in Orange County, California, approximately forty miles south of Los Angeles in the City of Tustin (Map 1), Township 5 south, Range 9 west, "sections" 9, 10, 46, 47, and 62 of the U. S. Geological Survey 7.5' Tustin quadrangle (Map 2).

The Station provides services and material to support operations of the 3rd Marine Aircraft Wing and its units. Helicopters comprise the primary air traffic on the Station. MCAS Tustin was commissioned in 1942 as a U. S. Naval Lighter than Air Base, called Naval Air Station, Santa Ana, with massive blimp hangars constructed in 1943. The total acreage is 1594 acres, 530 acres of which is leased out for agricultural purposes and 175 acres of which are leased for a maintenance area. About 1200 acres of the site are slated for re-use (M. Drilling pers. comm.).

Methodology

Tierra Madre Consultants reviewed available literature to identify any sensitive biological elements known to occur in the vicinity of MCAS Tustin. This review included consultation with the California Natural Diversity Data Base (CNDDB), *Inventory of Rare and Endangered Vascular Plants of California* (Smith and Berg 1988), *Soil Survey of Orange County and western part of Riverside County, California* (Wachtell 1978), and unpublished biological reports on nearby sites.

This report was prepared based on literature reviews, a brief site visit on 22 January 1993, and field surveys conducted 5, 8, 9, and 10 March 1993. Tierra Madre Consultant biologists Michael A. Patten, Scott White, and Stephen J. Myers conducted the field surveys. Surveys involved a general census for birds and plants and 349 trap-nights for small mammals. These surveys allowed us to produce an accurate species list and land-uses map, and to adequately determine the biology of MCAS Tustin. All species are referred to in the text primarily by common names. Complete species lists, using both scientific (Latin) and common names, are included at the end of this report. Conditions during the surveys were mostly clear skies, moderate winds (calm to Beaufort 4 NE), and cool to moderate temperatures (45°-75° F).

Results

Soils

The soil survey for Orange County (Wachtell 1978) indicates three types of soils on MCAS Tustin, and a fourth that potentially occurs on the Station (i.e., it is unclear from the mapping if the soil type occurs on the base or merely approaches it quite closely). These soils are listed below.

139 - Chino silty clay loam
140 - Chino silty clay loam, drained

The Chino series soils are somewhat poorly drained. These nearly level (0-2% slopes) soils occur primarily on large alluvial fans. They are used extensively for agriculture. The vegetation is annual grasses and forbs. These two Chino soils differ in the depth to the seasonal water table, with the drained variety having a lower water table.

183 - Omni clay

184 - Omni clay, drained

The Omni series soils are poorly drained. They generally occur on flood plains and in basins, and are nearly level (0-2% slopes). They are formed in mixed alluvium and support annual grasses, mustard, and mositure-dependent plants. These soils are generally alkaline and calcareous. Soil type 184 barely occurs on the Station (if at all).

Clay soils support rare plants in the area (e.g., *Dudleya multicaulis*; see Table 1). Also, level topography and the clay component in soils suggest a high probability that vernal pools occurred historically on the site.

Hydrologic Features

MCAS Tustin lies in the Tustin Plain over the Irvine groudwater basin, which is a subbasin of the Los Angeles groundwater basin. The area on which the Station is situated is historic marshland (the "Swamp of the Frogs"), but the marsh was reportedly filled by the Irvine Company at least sixty years ago (Roesling Nakamura Architects 1989). Tierra Madre is unaware of the extent or depth of the fill, and Wachtell (1978) does not discuss the fill in this area.

The Peters Canyon Channel runs through the eastern portion of the Station. The Santa Ana/Santa Fe Channel borders the northern edge of the Station, and several small channels are shown on the Tustin quad. The Santa Ana/Santa Fe and Peters Canyon channel system has been identified as a wetland (Soil Conservation Service 1992). There is a strong tendency for pooling in the agricultural fields, suggesting a potential for vernal pools. Past agricultural practices, such as ripping, plowing, levelling, draining of the soil, and (perhaps) soil comprised of fill material may mean that vernal pools are unable to form. Tierra Madre has identified a potential vernal pool (Map 4), but focused surveys shall be needed to make a final determination.

The earthen drainages support cattail (*Typha* sp.) and other common marsh plants. The water sources appear to be urban and agricultural run-off from both on-site and off-site areas. Flow is generally toward to south/southwest, with the area draining into Upper Newport Bay a few miles away (Costanza and Johnson 1991).

Vegetation and Flora

The entire Tustin Marine Corps Air Station has been impacted by human uses, and no undisturbed plant communities remain. A few sites (drainage channels and impermeable soils where water stands in seasonal pools) continue to provide habitat for native riparian plants, but even these areas are better characterized as "disturbed" than as "native plant communities." All plant species observed on the site during surveys are listed in Table 5.

Most of the Station is in use for military operations, residential housing, or agriculture. Dominant plants throughout these areas are either cultivated crops and ornamentals (cauliflower and lettuce in the fields; landscaping plants around offices and residences) or "weedy" species (i.e., plants typically occurring abundantly in disturbed habitats but less common in stable natural communities). Examples of weedy species growing among row crops and on disturbed vacant land include crystalline iceplant, tarragon, sunflower, ox-tongue, sow-thistle, wild mustard, London rocket, Australian saltbush, knotweed, wild oats, brome grasses and foxtail

fescue. Most of these plants are not non-native in California, though a few (e.g., tarragon) are natives. The cultivated fields and landscaped areas do not provide suitable habitat for rare or sensitive plant species known from the region, due to regular agricultural practices.

Drainage channels support native riparian vegetation characterized by black willow, mulefat, cattail, and bulrush. These species are often dominant in southern California wetlands and riparian habitats, but the narrow linear channels seem to experience regular disturbance by scouring during storms, and are unlikely to support the diverse array of species occurring in natural marshes and riparian forests.

A few sites on the Station are not under agricultural production, and their undisturbed impermeable soils cause runoff water to pool on their surfaces. This seasonal pooling is characteristic of a rare habitat type in southern California called "vernal pool" (Zedler 1987). Vernal pools are seasonal wetlands; they hold water for several weeks or months during the wet season, then dry completely during summer. Certain rare plants and animals occur only in vernal pools, and conservation of vernal pool habitat is becoming increasingly important.

Historically, the Tustin area was covered by marsh-like plant communities (Roesling Nakamura Architects 1989), but we are not aware of more detailed descriptions. Topography and soil characteristics on the Station seem to provide suitable conditions for vernal pools, and at least one site may be a remnant vernal pool (Map 4). The site was inundated by standing runoff water in March, indicating suitable soils and topography. The bottom of the pool was not covered by plant remains from the previous growing season, suggesting that few plants occurred. This observation is consistent with vernal pools, where relatively long-term inundation prevents establishment of most plants (because roots "drown"), and the extensive dry period prevents survival of typical marsh species (e.g., cattail and bulrush). The site *may* be a vernal pool, but further surveys during the spring will be needed to make this determination.

Most habitat on MCAS Tustin is agricultural fields or grass/weedy fields. Brown and Caldwell (1985) indicated that eighty-five percent of the native vegetation has been cleared for agricultural purposes, construction, and paving. They also indicated that, historically, seventy percent of the site supported grassland, whereas the remaining thirty percent supported coastal sage scrub. There is no evidence, however, that this site ever supported coastal sage scrub and, indeed, it would appear that the entire site was covered by a seasonal or perennial marsh. The plant list in the Brown and Caldwell report contains a number of species that likely never occurred on the site, even historically. The Appendix specifically addresses the Brown and Caldwell report and indicates which species listed by them do and do not occur at MCAS Tustin.

Wildlife Habitat and Fauna

Agricultural, residential, and industrial land uses typically limit a site's value as wildlife habitat. Such areas are low in both species diversity and abundance. The low availability (or absence) of essential habitat elements such as food and cover substantially limits habitat value on the site. As a result, the only wildlife using the site are species tolerant of disturbed conditions. Even species adapted to human-dominated habitat occur only in low numbers on the Station, indicating minimal habitat value.

Birds and mammals noted on the site are typical of disturbed grassland communities and suburban neighborhoods in coastal southern California. Faunal lists (Table 5) are taken from the field visits. Forty-eight species of birds (generally the most conspicuous vertebrates) were noted during the five field visits. Most birds were congregated toward the housing area in the northwestern corner and were in the weedy margins to agricultural fields, particularly those adjacent to the channels. A flooded area in the southern part of the Station supported various water bird species, such as ducks, shorebirds, and gulls. Mammal species richness and abundance is also considered low, as only twenty-five small mammals were trapped in 349 trap-

nights worth of effort (Table 6). On 10 March, only one in 174 traps had a animal. Western Fence Lizards, one of the most ubiquitous reptiles in coastal southern California, were the only reptiles seen and identified. A turtle was seen briefly, but not identified; it may have been a Southewstern Pond Turtle or a Red-eared Slider.

As with the plants, the Brown and Caldwell (1985) report is seriously flawed, and includes a number of animal species which have never occurred in this portion of Orange County (e.g., Common Nighthawk). The Appendix specifically addresses the Brown and Caldwell report and indicates which species listed by them do not occur at MCAS Tustin.

Contiguous Space

Much of the area surrounding MCAS Tustin bas been developed, mainly as industrial complexes and business parks. We have seen no native habitat on the Station. Compared with natural land, the Station provides minimal habitat value and supports a low diversity and low abundance of wildlife. Nevertheless, given the homogeneity and low babitat value in the surrounding urban areas, agricultural fields on MCAS Tustin provides the most valuable habitat in the local area (J. D. Opdyke, U. S. Fish and Wildlife Service, *in litt.*).

Sensitive Elements

Plant and animal taxa may be considered sensitive due to declining populations, vulnerability to habitat change, or restricted distribution. Certain sensitive species have been listed as threatened or endangered by the U. S. Fish and Wildlife Service (1990, 1991) or by the California Fish and Game Commission (1991a, 1991b) and are protected by the Federal or State Endangered Species Acts and the California Native Plant Protection Act. Other species have been identified as sensitive by the U. S. Fish and Wildlife Service, the California Department of Fish and Game, or private conservation organizations, including the California Native Plant Society (CNPS; Smith and Berg 1988). Some habitat types, such as vernal pools, are considered sensitive biological resources by the Natural Heritage Division of the California Department of Fish and Game, and by the City of Tustin.

Smith and Berg (1988) and the CNDDB (1990) report seven sensitive plant species from the Tustin region (Table 1). Tierra Madre Consultants concludes that five of these do not occur on the Station because no suitable habitat (chaparral, coastal sage scrub, native grasslands) is available. We conclude that southern tarplant (*Hemizonia australis*) and many-stemmed dudleya (*Dudleya multicaulis*) have low probabilities of occurrence on the Station. Both species are absent from agricultural fields and landscaped areas, but either could occur on heavy soils near the potential vernal pool site (Map 5), and *Hemizonia australis* could occur along margins of drainage channels.

According to the June, 1989 Masterplan prepared for MCAS Tustin, "No endangered species have been identified to exist on or utilize Station property" (Roesling Nakamura Architects 1989). Since then, the Southwestern Pond Turtle (*Clemmys marmorta pallida*) has been identified on MCAS Tustin (Soil Conservation Service 1992). A number of other sensitive species were reported on-site by Brown and Caldwell (1985) [but see the Appendix] and Ledendecker *et al.* (1987). Our literature review indicates a few other sensitive species which potentially occur on-site. These species are presented in Table 1 (plants), Table 2 (amphibians and reptiles), Table 3 (birds), and Table 4 (mammals). Although the majority of the species considered are not listed as threatened or endangered, they are nonetheless considered sensitive. Should they occur on the Station, potential impacts to them MAY be considered significant under CEQA section 15380 and NEPA 40 CFR 1500-1508.

Potential Impacts and Recommended Further Surveys

MCAS Tustin supports a low diversity of wildlife and few native plants. What wildlife does occur here is, in general, well-adapted to disturbed and partially developed areas. Abundance and diversity of reptiles, birds, and mammals were extremely low compared to similar-sized areas of natural habitat in Orange County. Streams and irrigation channels provided the highest value wildlife habitat.

One site on the Station has certain characteristics of a vernal pool. Vernal pool habitats in southern California support numerous sensitive plant species, including state-listed endangered species (California Orcutt grass and San Diego button celery). If the site is a vernal pool and it supports rare, threatened or endangered plants, then impacts to the vernal pool would require "mandatory findings of significance" under the California Environmental Quality Act. Further, if the site is a vernal pool, and supports several sensitive plant species, even if none are listed threatened or endangered, then impacts to the rare habitat type and cumulative impacts to several sensitive species could lead to a finding of "significant impacts" under CEQA and/or NEPA.

Aside from vernal pool species, two sensitive plant species documented from the Tustin area (*Hemizonia australis* and *Dudleya multicaulis*) could occur on the Station. Neither plant has been listed as threatened or endangered under either state or federal Endangered Species Acts, and neither plant has been proposed for listing or is a federal Category 1 candidate for listing. Under CEQA, a project that would "substantially affect a rare or endangered species of animal or plant or the habitat of the species" is regarded as having a significant effect (Appendix G). CEQA provides several definitions of "rare" as it applies here, including listing as threatened or endangered under either the state or federal Endangered Species Acts and the following additional definition in Section 15380 (b) (2) (B):

> The species is likely to become endangered within the foreseeable future and may be considered as "threatened" as that term is used in the Federal Endangered Species Act.

and, in Section 15380 (d):

> A species not included in any listing identified in subsection (c) [state or federal Endangered Species Acts] shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria of subsection (b) [applicable language quoted above].

Based on these CEQA definitions and published evaluations of the plants' rarity and endangerement (Smith and Berg 1988), impacts to these two species would not be considered "significant" under the California Environmental Quality Act.

Tierra Madre Consultants recommends follow-up biological surveys on the Station to determine presence or absence of vernal pools and rare plant species restricted to vernal pool habitat. The potential vernal pool site should be visited during the spring. We recommend at least three site visits, beginning during the first week in April. The visits should be separated by about three weeks. Depending on timing and conditions during the third visit, a fourth visit may be necessary to identify plants not yet in bloom, or to map extent of inundation in late spring. During each visit, all plant species occurring in and around the potential vernal pool should be censused, and a standardized sampling technique should be applied to provide comparative data on species abundance within the pool, at its margins, and outside the pool. We also recommend that unlined drainage ditches, the fenced wet area in the southeastern corner, and the potential vernal pool site be evaluated to determine whether they meet State or federal criteria as jurisdictional wetlands, streambeds, lakebeds, or waters of the United States.

About four Loggerhead Shrikes, a Category 2 candidate for federal listing, were observed on the Station. Aside from shrikes, the American Peregrine Falcon (see below) was the only sensitive species directly observed on the station. Impacts to shrikes would not be considered

significant under the guidelines of CEQA or NEPA. Impacts to Southwestern Pond Turtle, vernal pools, and American Peregrine Falcon would be considered significant.

A review of literature for the site indicates that the Southwestern Pond Turtle, a species recently petitioned for listing as federally endangered (*Herpetol. Review* 23:6, 1992), occurs, at least formerly, in the fresh-water channels on-site (Soil Conservation Service 1992, M. Drilling pers. comm.). The channel bordering Jamboree Road in the southeastern corner of the Station looked particularly suitable for this turtle. White observed what was probably a turtle slipping into the water in the channel on 5 March 1993, and Patten again briefly observed what was presumably this same turtle slip into the water on 8 March 1993. Neither of us saw the turtle long enough to identify it; it was probably either a Southwestern Pond Turtle, or a Red-eared Slider (a non-native species common in the pet trade). We conclude that there is a moderate to high potential for Southwestern Pond Turtle on the Station. Focused surveys will need to be conducted to determine the presence/absence and population of this species. These surveys should be conducted in April or May. At least three field visits should be conducted before a final presence/absence determination is made.

Myers and Patten observed an American Peregrine Falcon (*Falco peregrinus anatum*) flying around one of the large hangars. This species has been listed as endangered by both the California Fish and Game Commission and the U. S. Fish and Wildlife Service. Impacts to this species would be significant pursuant to both CEQA and NEPA guidelines. Peregrine Falcons have adapted well in recent years to nesting on man-made structures (CDFG 1991c, Ehrlich *et al.* 1992), and it is our opinion that the blimp hangar would be a suitable structure. In urban areas, Peregrines feed primarily on "Rock Doves" or Domestic Pigeons (*Columba livia*), which are abundant on the base. There is potential that Peregrine Falcons nest on the blimp hangars. Focused surveys should be conducted to determine the nesting status of Peregrine Falcon on MCAS Tustin. These surveys should be conducted sometime between mid-March and late May to determine if the Peregrine observed is nesting on-site, or if it was a passage migrant. Two to three field visits would be necessary, during which time the northern hangar and the adjacent fields should be monitored to watch for Peregrine activity.

TABLE 1. Sensitive Plant Species Occurring in Vicinity of Marine Corps Air Station, Tustin.

Sensitive species	Habitat and Distribution	Flowering Season[1]	Status Designation[2,3]	Occurrence Probability[2]
Astragalus brauntonii Braunton's milk vetch	Scattered locations in s. Calif. foothills, Ventura, LA, Orange Cos.; chaparral, possibly restricted to carbonate soils (USFWS 1992, Skinner 1991).	Feb-June	Fed: Prop END Calif: ND CNPS: List 1B R-E-D:3-2-3	Absent (no suitable habitat)
Calochortus catalinae Catalina mariposa lily	Coastal Calif., Santa Cruz Co. to SD Co. and Channel Islands; Chaparral, woodlands, grasslands (Smith and Berg 1988); "heavy soil ... below 2000 feet" (Munz 1974).	Spring	Fed: ND Calif: ND CNPS: List 4 R-E-D:1-2-3	Absent (no suitable habitat)
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	Historic locations in LA, Orange & SD Cos.; "dry sandy places below 2500 feet; mostly coastal sage scrub" (Munz 1974). No known extant populations, historic sites heavily urbanized (Smith and Berg 1988).	April-June	Fed: C1* Calif: ND CNPS: List 1A R-E-D:n/a	Absent (plant is presumed extinct)
Chorizanthe staticoides ssp. *chrysacantha* Turkish rugging	Coastal SD and Orange Cos.; chaparral and coastal sage scrub. NOTE: proposed for deletion from next edition of CNPS inventory because it is not distinct from a common plant, *Chorizanthe staticoides* ssp. *staticoides*.	April-May	Fed: 3B Calif: ND CNPS: List 1B R-E-D:2-3-3	Absent (no suitable habitat)
Dudleya multicaulis many-stemmed dudleya	Cismontane s. Calif.; LA, Riv, SB, SD and Orange Cos. at elevations below about 2000 feet. Clay soils (Boyd 1983); "dry stony places" (Munz 1974); chaparral, CSS & valley grassland (Smith and Berg 1988).	May-June	Fed: C2 Calif: ND CNPS: List 1B R-E-D:1-2-3	Absent (no suitable habitat)
Dudleya viscida sticky dudleya	Coastal sage scrub below about 1200 feet; s. Orange Co. and w. SD Co. (Munz 1974, Smith and Berg 1988).	May-June	Fed: C1 Calif: ND CNPS: List 1B R-E-D:3-2-3	Absent (no suitable habitat)
Hemizonia australis southern tarplant	Valley grasslands; coastal s. Calif. and n. Baja (Munz 1974, Smith and Berg 1988).	June-Sept	Fed: ND Calif: ND CNPS: List 3 R-E-D:?-?-3	Absent (no suitable habitat)

References: Munz (1974), Beauchamp (1986), Smith and Berg (1988), USFWS (1990), CDFG (1991b), and CNDDB (1992). Taxonomy and nomenclature follows Munz (1974) and Smith and Berg (1988).

1. The preferred survey season for most rare plants is during their flowering season, since this is when they are most easily seen and recognized. Some species can be recognized year-around or can be dependably identified without flowers. Others can sometimes be identified from dried material but out-of-season surveys cannot reliably confirm their absence from a site.
2. Status designations and occurrence probabilities are defined at the end of this table.
3. CNPS designations to be changed in next edition of *CNPS Inventory* due to revised taxonomy.

TABLE 2. Sensitive Amphibians and Reptiles Occurring in Vicinity of Marine Corps Air Station, Tustin.

Sensitive species	Habitat and Distribution	Activity Season[1]	Status Designation[2]	Occurrence Probability[2]
Scaphiopus hammondii Western Spadefoot	Breeds in quiet streams and vernal pools, burrows beneath sand during dry season; western Calif., Central Valley through Baja Calif.	Late winter-spring	Fed: ND Calif: CSC	Low
Clemmys marmorata pallida Southwestern Pond Turtle	Marshes, sloughs, ponds and slow-flowing streams; apparently a few occurred in the channels at the south end of the Station, but they were translocated several years ago (M. Drilling pers. comm.). Tierra Madre Consultants located one in San Joaquin Channel on 30 June 1993.	Year-round	Fed: C1 Calif: CSC	Present
Phrynosoma coronatum blainvillei San Diego Horned Lizard	Forest, shrubland or grassland with sandy areas and harvester ants their principle prey); w. Calif. from LA Co. s. through Baja Calif.	Spring-summer	Fed: C2 Calif: CSC	Absent (no suitable habitat)
Cnemidophorus tigris multiscutatus Coastal Western Whiptail	Woodlands, shrublands; sw. Calif through much of Baja Calif. Note: intergrades with *C. t. tigris* (no agency status) in project vicinity.	Spring-summer	Fed: C2 Calif: ND	Very low
Crotalus ruber ruber Red Diamond Rattlesnake	Coastal sage scrub, chaparral, desert scrub; sw. Calif., Baja Calif.	Spring-summer	Fed: C2 Calif: CSC	Absent (no suitable habitat)

References: Stebbins (1954), Stebbins (1985), Zeiner *et al.* (1988), CDFG (1991a), USFWS (1991), and CNDDB (1992). Nomenclature follows Collins (1990); phylogeny follows Stebbins (1985).

1. Amphibians and reptiles are rarely detected outside their activity seasons. Where suitable habitat occurs, a conclusive determination of presence or absence can only be made following a focused survey during the appropriate season. Most reptiles are not active during cold weather; most amphibians are inactive except during rainy seasons.
2. Status designations and occurrence probabilities are defined at the end of this table.

TABLE 3. Sensitive Birds Occurring in Vicinity of Marine Corps Air Station, Tustin.

Sensitive species	Habitat and Distribution	Activity Season[1]	Status Designation[2]	Occurrence Probability[2]
Elanus caeruleus **Black-shouldered Kite**	Breeds in woodlands and riparian forests, forages over open terrain; Pacific Coast (Calif., n. Baja, Oregon), other scattered localities worldwide	Spring-summer	Fed: ND Calif: SA/*	Breeding: **Low** Foraging: **Present** (Ledendecker *et al.* 1987)
Circus cyaneus Northern Harrier	Breeds colonially in grasslands, and wetlands; forages over open terrain; N. America and Eurasia	Spring-summer	Fed: ND Calif: CSC (breeding only)	Breeding: **Absent** Foraging: **Present** (Brown and Caldwell 1985)
Accipiter striatus **Sharp-shinned Hawk**	Nests and hunts in forests and woodlands, also forages in open areas; throughout N. America, parts of S. America	Primarily winter; uncomm. breeding	Fed: ND Calif: CSC (breeding only)	Breeding: **Absent** Foraging: **Moderate**
Accipiter cooperii Cooper's Hawk	Nests and hunts in forests and woodlands occasionally forages in open areas (Asay 1987); most of U. S., central, and s. America.	Year-around	Fed: ND Calif: CSC (breeding only)	Breeding: **Absent** Foraging: **Present** (Brown and Caldwell 1985)
Buteo regalis Ferruginous Hawk	Forages over grassland and shrubland; winters in west and southewst (breeds in Great Basin and northern plains)	Winter	Fed: C2 Calif: ND	Breeding: **Absent** Foraging: **Low**
Aquila chrysaetos Golden Eagle	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout w. N. America, winters to e. coast	Year-around	Fed: ND Calif: CSC (year-round)	Breeding: **Absent** Foraging: **Very low**
Falco peregrinus anatum American Peregrine Falcon	Feeds primarily on doves, pigeons, waterfowl, and shorebirds; nests most often on cliffs, but also on tall buildings and bridges (Aulman 1991, CDFG 1991c, Ehrlich *et al.* 1992); rare breeder in s. Calif.; cosmopolitan species; also listed as endangered in Canada	Year-round	Fed: END Calif: END	Breeding: **Absent** Foraging: **Present**
Speotyto [Athene] cunicularia Burrowing Owl	Nests in rodent burrows in open habitat, forages in surrounding areas; increasingly uncommon in s. Calif; occurs through western U.S. and Mexico	Year-around	Fed: ND Calif: CSC (burrow sites)	Breeding: **Low** Foraging: **Present** (Brown and Caldwell 1985)

References and footnotes on following page.

Definitions of Status Designations and Occurrence Probabilities (from USFWS 1991 and CDFG 1992).

Federal designations: (federal Endangered Species Act, US Fish and Wildlife Service):

END: Federally listed, Endangered.
THR: Federally listed, Threatened.
C1: Category 1 candidate. Sufficient data are available to support federal listing as Threatened or Endangered, but not listed at this time.
C2: Category 2 candidate species. Threat and/or distribution data are not sufficient to support federal listing at this time.
C3b: Not considered taxonomically distinct. No longer considered a candidate for federal listing.
C3c: Too widespread and/or not threatened. No longer considered a candidate for federal listing.
FSS: Forest Service Sensitive.
ND: No designation.

State designations: (California Endangered Species Act, California Dept. of Fish and Game)

END: State listed, Endangered.
THR: State listed, Threatened.
CSC: California Species of Special Concern.
CP: Fully protected under California Fish and Game Code, Sections 3511, 4700, 5050, 5515.
SA: Special Animal.
*: Taxa that are biologically rare, very restricted in distribution, or declining throughout their range, population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California; or taxa closely assocaited with a habitat that is declining in California.
ND: No designation.

California Native Plant Society (CNPS) designations: (Note: According to CNPS [Smith and Berg 1988], plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code.)

List 1B: Plants rare and endangered in California and throughout their range.
List 2: Plants rare, threatened or endangered in California but more common elsewhere.
List 4: Plants of limited distribution; a "watch list."

CNPS R-E-D Code:

Rarity 1: Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
2: Occurrence confined to several populations or one extended population.
3: Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.
Endangerment 1: Not endangered.
2: Endangered in a portion of its range.
3: Endangered throughout its range.
Distribution 1: More or less widespread outside California.
2: Rare outside California.
3: Endemic to California (i.e., does not occur outside California).

Definitions of occurrence probability:

Present: Observed on the site by Tierra Madre Consultants or recorded on-site by other qualified biologists.
Expected: Applied to wide-ranging species which probably use the site, at least during certain times of year. Some "expected" species may use the site only uncommonly.
High: Recorded in similar habitat in region by qualified biologists, or habitat on the site is a type often used by the species and the site is within the known range of the species.
Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
Low: Site is within the species' known range, but habitat on-site is rarely used by the species.
Absent: A focused study failed to detect the species, or, no suitable habitat is present.
Unknown: No focused surveys have been performed in the region and the species' distribution and habitat are poorly known.

References: Smith and Berg (1988), USFWS (1990, 1991), and CDFG (1991a, 1991b).

TABLE 5. Species Detected on Marine Corps Air Station, Tustin

This list reports only plants and animals observed on the site by this study. Other species may have been overlooked or undetectable due to growing season. Plant nomenclature and systematics follows Hickman (ed.) 1993; other names also in use are noted in parentheses. Plants were identified using keys, descriptions and illustrations in Abrams (1923, 1944, 1951), Abrams and Ferris (1960), Hickman (1993), Mason (1957) and Munz (1974). Some species were identified or confirmed by Andrew C. Sanders, Herbarium Botanist, UC Riverside Department of Botany and Plant Science. Animal nomenclature and taxonomy follows Stebbins (1985) and Collins (1990) for herpetofauna, the American Ornithologists' Union (1983) and AOU supplements through 1991 for birds, and Jones *et al.* (1982, 1986) for mammals.

I. VASCULAR PLANTS

GYMNOSPERMS

Cupressaceae	Cypress family	
Cedrus sp.	Cedar	Occas. / ornamental
Pinaceae	Pine family	
Pinus sp.	Pine	Occas. / ornamental

DICOT ANGIOSPERMS

Aizoaceae	Iceplant family	
* *Mesembryanthemum crystallinum*	Crystalline iceplant	Comm. / ruderal
Anacardiaceae	Sumac family	
* *Schinus molle*	Peruvian ("California") pepper tree	Occas. / ornamental
Apiaceae	Carrot family	
* *Apium graveolens*	Celery (European)	Infreq. / drainage ditch
* *Conium maculatum*	Poison hemlock	Comm. / drainage ditches
Asteraceae	Sunflower family	
Artemisia dracunculus	Tarragon	Comm. / drainage ditches
Aster subulatus (syn. *A. exilis*)	Slim aster	Rare (1) / ruderal
Baccharis salicifolia (syn. *B. glutinosa*)	Mulefat, seep willow	Occas. / drainage ditches
* *Centaurea melitensis*	Tocloate, star thistle (European)	Occas. / ruderal

SYMBOLS AND ABBREVIATIONS:

Abund. Abundant
Comm. Common
Occ. Occasional
Infreq. Infrequent
Rare Rare *on the Tustin MCAS site* (no relationship to Endangered Species Act designations.
Ruderal Disturbed habitats (e.g., roadsides).
* Non-native (introduced) species.
cf. Uncertain identification, but plant specimen "compares favorably" to named species (from Latin *confer*: compare [with]).
sp. Plant or animal identified only to genus; species unknown (plural = spp.).

Asteraceae, cont.		
* *Chamomilla suaveolens* (syn. *Matricharia matricaroides*)	Pineapple weed (native to NW N Amer and NE Asia)	Comm. / ag. fields, ruderal
* *Cirsium vulgare*	European bull thistle	Comm. / ruderal, drainage ditch
* *Cnicus benedictus*	Blessed thistle (European)	Comm. / ruderal
* *Conyza cf. bonariensis*	Flax-leaf fleabane (S. Amer.)	Infreq. / ruderal
Conyza canadensis	Mare's tail, horseweed	Comm. / ruderal, drainage ditch
* *Cotula coronopifolia*	Brass buttons (African)	Occas. / drainage ditch
* *Cynara cardunculus*	Artichoke thistle	Occas. / wet areas
Helianthus annuus	Annual sunflower	Comm. / ruderal, drainage ditch
Heterotheca grandiflora	Telegraph weed	Occas. / ruderal
Isocoma menziesii (syn. *Haplapappus venetus*)	Coastal goldenbush	Rare (1) / ruderal
* *Lactuca serriola*	European wild lettuce	Comm. / ag. fields, drainage ditches
Lactuca sp.	Cultivated lettuce	Abund. crop
* *Picris echioides*	Bristly ox-tongue	Comm. / rudral, drainage ditches
* *Senecio vulgaris*	European common groundsel	Occas. / ruderal, ag. fields
* *Silybum marianum*	Mediterranean milk thistle	Occas. / ruderal
* *Sonchus asper*	European prickly sow-thistle	Common / ag. fields, drainage ditches
* *Sonchus oleraceus*	European common sow-thistle	Common / ag. fields, drainage ditches
Stephanomeria sp.	Wreath-plant	Occas. / ruderal
* *Taraxacum officinale*	European common dandelion	Occas. / ag. field
Boraginaceae	**Borage family**	
Amsinckia menziesii (syn. *A. intermedia*)	Rancher's fiddleneck	Comm. / ruderal
Brassicaceae	**Mustard family**	
* *Brassica nigra*	European black mustard	Abund. / ag. fields, drainage ditches
* *Brassica oleracea*	Cultivated coles	Abund. crop
* *Brassica rapa*	European field mustard	Comm. / ag. fields, ruderal
* *Capsella bursa-pastoris*	European shepard's purse	Comm. / ag. fields, ruderal
* *Coronopus didymus*	Eurasian swine cress	Uncomm. / ag. field
Lepidium cf. oblongum	Oblong peppergrass	Rare (2) / ruderal
* *Lobularia maritima*	European sweet alyssum	Occ. / roadside
* *Raphanus sativus*	European wild radish	Comm. / ag. fields, ruderal
* *Sisymbrium irio*	London rocket (European)	Abund. / ag. fields, ruderal
Caryophyllaceae	**Carnation family**	
* *Spergularia marina*	Salt march sand-spurry	Infreq. / ag. fields
Chenopodiaceae	**Saltbush family**	
* *Atriplex semibaccata*	Australian saltbush	Occas. / ruderal
* *Bassia hyssopifolia*	Five-hook bassia	Occas. / wet areas
* *Beta vulgaris*	Agricultural beet	Infreq. / drainage ditch
Chenopodium cf. berlandieri	Pitseed goosefoot	Occas. / ruderal, drainage ditch
* *Chenopodium murale*	Nettle-leaf goosefoot	Occas. / ag. field, drainage ditch
* *Salsola tragus* (syn. *S. iberica* and *S. kali*)	Russian thistle, tumbleweed	Infreq. / ruderal
Convolvulaceae	**Morning-glory family**	
Calystegia macrostegia	Morning-glory	Occas. / ruderal
* *Convolvulus arvensis*	European bindweed	Occas. / wet areas
Cressa truxillensis	Alkali weed	Infreq. / ruderal

Fabaceae	**Pea family**	
* *Medicago polymorpha*	Mediterranean bur clover	Comm. / ag. field
* *Melilotus albus*	European white sweet-clover	Abund. / ag. field, drainage ditch
* *Melilotus indicus*	India sourclover	Occas. / ag. field, ruderal
* *Robina* sp.	Locust	Occas. / ornamental
Fagaceae	**Oak family**	
Quercus sp.	Oak	Occas. / ornamental
Geraneaceae	**Geranium family**	
* *Erodium cicutarium*	European red-stemmed filaree	Comm. / ruderal
* *Erodium moschatum*	European white-stemmed filaree	Abund. / ag. field, ruderal
Lamiaceae	**Mint family**	
* *Lamium amplexicaule*	European henbit	Occas. / ag. field, drainage ditch
Malvaceae	**Mallow family**	
* *Malva parviflora*	Cheeseweed	Comm. / ag. field
Malvella leprosa (syn. *Sida L.*)	Alkali mallow	Infreq. / ruderal
Myoporaceae	**Myoporum family**	
* *Myoporum laetum*	Myoporum	Occas. / ornamental
Myrtaceae	**Eucalyptus family**	
* *Eucalyptus* sp.	Eucalyptus, gum tree	Occas. / ornamental
Oxalidaceae	**Wood-sorrel family**	
* *Oxalis corniculata*	European yellow sorrel	Infreq. / ruderal
* *Oxalis pes-capre*	"Bermuda" buttercup (S. Afr.)	Infreq. / roadside
Papaveraceae	**Poppy family**	
Fumaria parviflora	Fumitory	Infreq. / ag. fields
Plantaginaceae	**Plantain family**	
* *Plantago major*	European common plantain	Occas. / ruderal
Polygonaceae	**Buckwheat family**	
* *Polygonum arenastrum* (syn. *P. aviculare*)	European common knotweed	Abund. / ag field, ditch, ruderal
* *Rumex crispus*	Curly dock	Comm. / drainage ditch, ruderal
Primulaceae	**Primrose family**	
* *Anagalis arvensis*	Scarlet pimpernel	Infreq. / ruderal
Salicaceae	**Willow family**	
Salix goodingii	Goodding's black willow	Occas. / large drainage ditches
Solanaceae	**Nightshade family**	
Datura sp.	Jimsonweed	Occas. / ruderal
* *Lycopersicon esculentum*	Agricultural tomato	Rare escape (1)
* *Nicotiana glauca*	Tree tobacco	Occas. / ruderal, drainage ditch
Solanum douglasii	Douglas's nightshade	Occas. / drainage ditch, ag. field
Ulmaceae	**Elm family**	
* *Ulmus* sp.	Elm	Occas. / ornamental

Urticaceae	Nettle family	
* *Urtica urens*	Dwarf nettle	Occas. / ag. field, drainage ditch
Zygophyllaceae	Caltrop family	
* *Tribulus terrestris*	Puncture vine	Occas. / ruderal

MONOCOT ANGIOSPERMS

Arecaceae	Palm family	
* *Washingtonia filifera*	California fan palm (native in deserts)	Uncomm. / escaped ornamental
Cyperaceae	Sedge family	
Scirpus californicus	California bulrush	Comm. / drainage channels
Scirpus maritimus	Tule bulrush	Occas. / wet areas
Poaceae	Grass family	
* *Avena barbata*	Slender wild oat	Comm. / ruderal
Bromus cf. arizonicus	Arizona brome	Occas. / drainage ditch
* *Bromus diandrus*	Common ripgut-grass	Comm. / roadsides
* *Bromus hordeaceus* (syn. *B. mollis*)	Soft chess	Abund. / ruderal
* *Bromus madritensis* ssp. *rubens* (syn. *B. rubens*)	Red brome, foxtail chess	Abund. / ruderal
* *Cynodon dactylon*	Bermuda grass	Abund. / ruderal
* *Hordeum marinum* (syn. *H. geniculatum*)	Mediterrean barley	Occas. / ruderal
* *Hordeum murinum*	Hare barley	Comm. / ag. field, ruderal
* *Lamarckia aurea*	Mediterranean goldentop	Occ. / ag. field, ruderal
Leptochloa uninerva	Sprangle-top grass	Comm. / drainage ditches
* *Lolium multiflorum* (syn. *L. perrene* ssp. *m.*)	English (annual) ryegrass	Comm. / ag. field
* *Phalaris minor*	Mediterrean canary grass	Occas. / ruderal
* *Poa annua*	Annual bluegrass	Comm. / ag. field
* *Poa pratensis*	"Kentucky" bluegrass	Occas. / ruderal
* *Polypogon monspeliensis*	Rabbitfoot grass	Occas. / ruderal
* *Triticum aestivum*	Agricultural wheat	Occas. / drainage channel banks
* *Vulpia myuros* (syn. *Festuca megalura*)	Foxtail fescue	Comm. / ag. fields
Typhaceae	Cattail family	
Typha sp.	Cattail	Comm. / drainage ditches

II. ANIMALS

REPTILES

Iguanidae	Iguanids
Sceloporus occidentalis	Western Fence Lizard

BIRDS

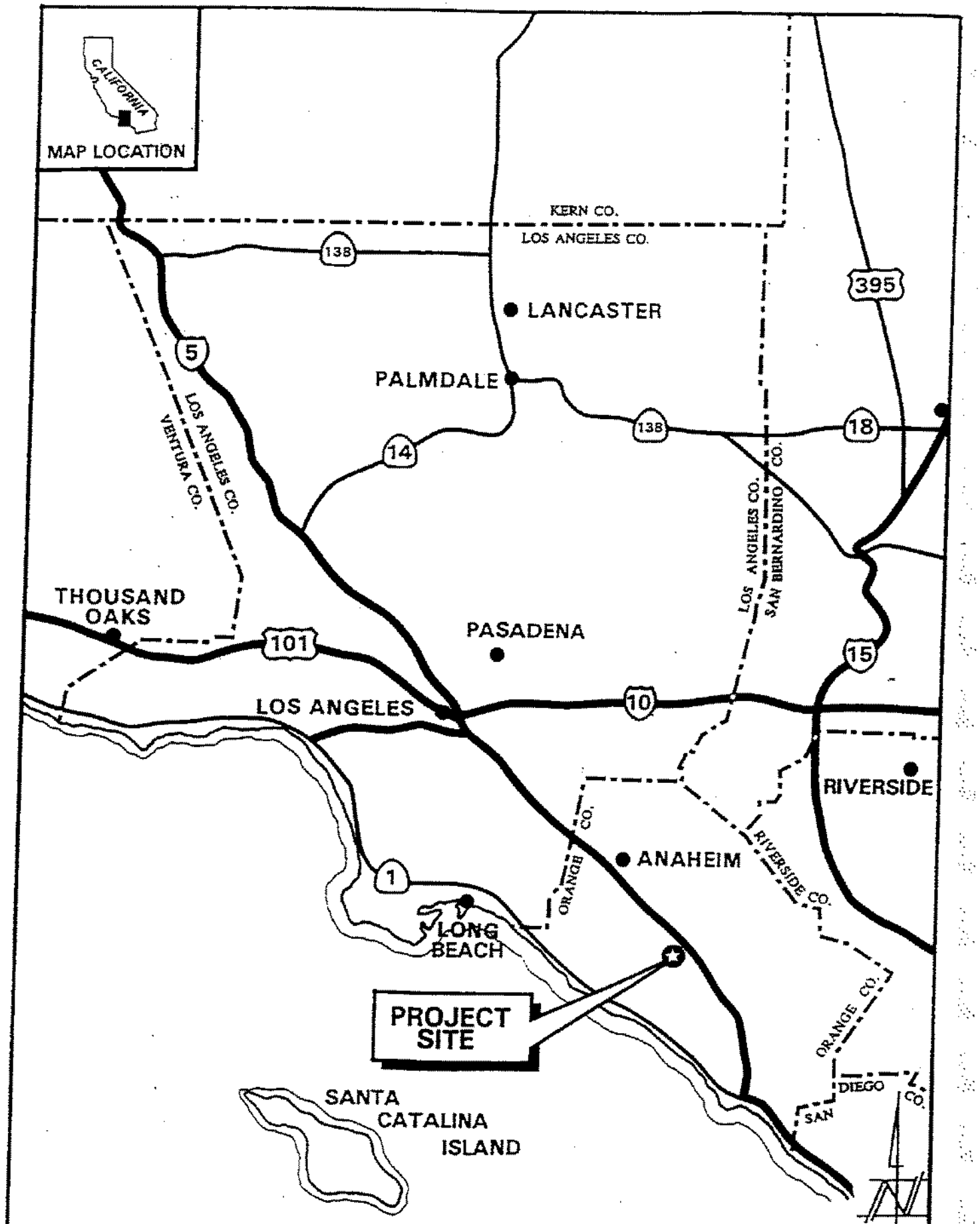
Ardeidae	Herons and Bitterns
Ardea herodias	Great Blue Heron
Casmerodius albus	Great Egret
Egretta thula	Snowy Egret
Butorides striatus	Green-backed Heron

Anatidae	Swans, Geese, and Ducks
Anas platyrhychos	Mallard
Anas cyanoptera	Cinnamon Teal
Anas clypeata	Northern Shoveler
Cathartidae	American Vultures
Cathartes aura	Turkey Vulture
Accipitridae	Hawks and Eagles
Buteo jamaicensis	Red-tailed Hawk
Falconidae	Caracaras and Falcons
Falco sparverius	American Kestrel
Falco peregrinus anatum	American Peregrine Falcon
Rallidae	Rails, Gallinules, and Coots
Fulica americana	American Coot
Charadriidae	Plovers
Charadrius vociferus	Killdeer
Recurvirostridae	Avocets and Stilts
Himantopus mexicanus	Black-necked Stilt
Scolopacidae	Sandpipers and allies
Tringa melanoleuca	Greater Yellowlegs
Numenius americanus	Long-billed Curlew
Calidris minutilla	Least Sandpiper
Limndromus scolopaceus	Long-billed Dowitcher
Gallinago gallinago	Common Snipe
Laridae	Gulls and Terns
Larus delawarensis	Ring-billed Gull
Larus californicus	California Gull
Columbidae	Pigeons and Doves
**Columba livia*	Rock Dove
Zenaida macroura	Mourning Dove
Apodidae	Swifts
Aeronautes saxatalis	White-throated Swift
Trochilidae	Hummingbirds
Calypte anna	Anna's Hummingbird
Alcedinidae	Kingfishers
Ceryle alcyon	Belted Kingfisher
Tyrannidae	Tyrant Flycatchers
Sayornis nigricans	Black Phoebe
Alaudidae	Larks
Eremophila alpestris	Horned Lark
Hirundinidae	Swallows
Stelgidopteryx serripennis	No. Rough-winged Swallow
Hirundo rustica	Barn Swallow

Corvidae	Jays, Magpies, and Crows
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
Mimidae	Thrashers
Mimus polyglottos	Northern Mockingbird
Motacillidae	Wagtails and Pipits
Anthus rubescens	American Pipit
Laniidae	Shrikes
Lanius ludovicianus	Loggerhead Shrike
Sturnidae	Starlings
**Sturnus vulgaris*	European Starling
Emberizidae	Warblers, Sparrows, Blackbirds
Dendroica coronata audubonl	Audubon's Warbler
Geothlypis trichas	Common Yellowthroat
Passerculus sandwichensis	Savannah Sparrow
Melospiza melodia	Song Sparrow
Melospiza lincolnii	Lincoln's Sparrow
Agelaius phoeniceus	Red-winged Blackbird
Sturnella neglecta	Western Meadowlark
Euphagus cyanocephalus	Brewer's Blackbird
Fringillidae	Finches
**Carpodacus mexicanus*	House Finch
Carduelis psaltria	Lesser Goldfinch
Carduelis tristis	American Goldfinch
Passeridae	Old World Sparrows
**Passer domesticus*	House Sparrow

MAMMALS

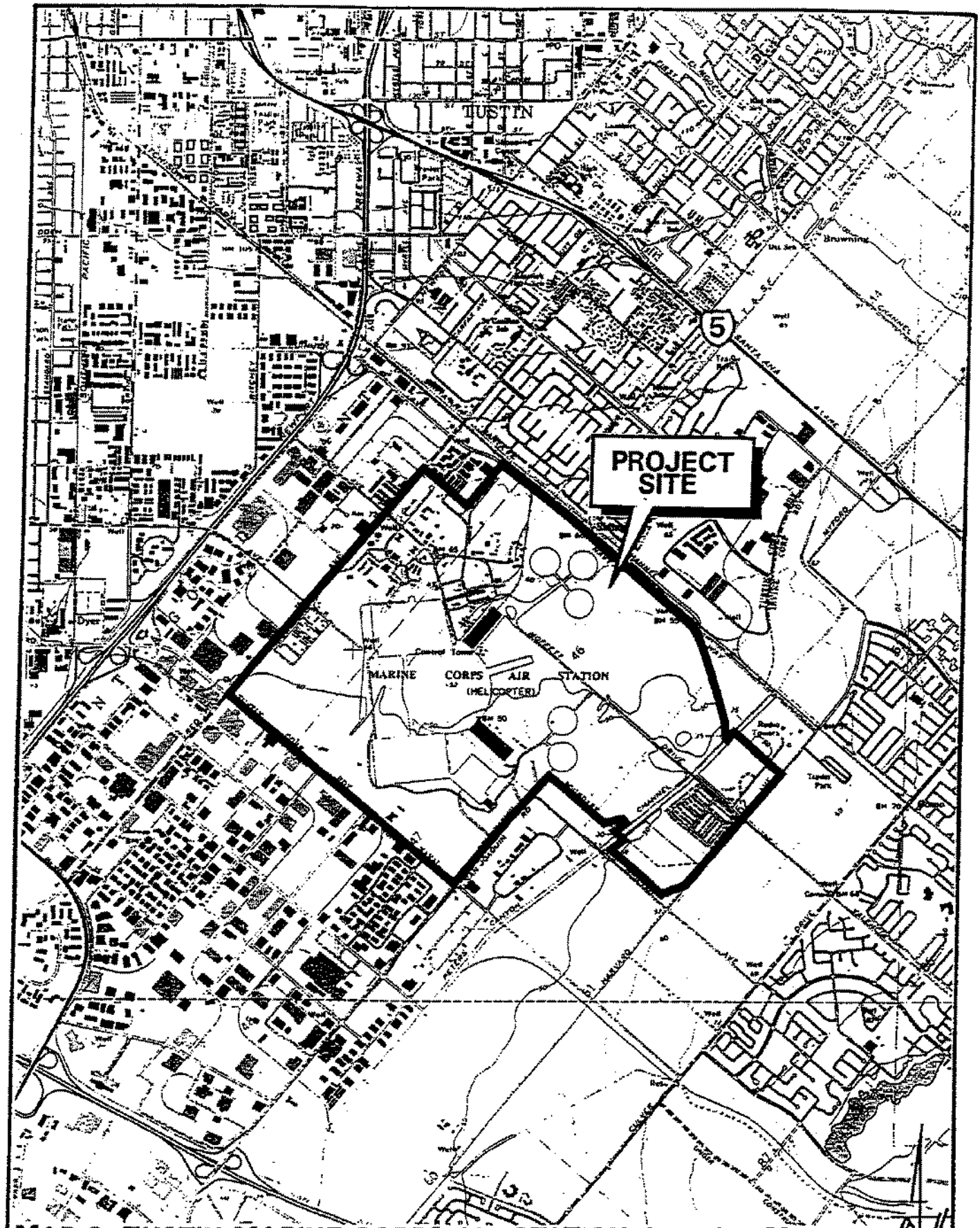
Leporidae	Rabbits and Hares
Sylvilagus audubonii	Audubon's Cottontail
Sciuridae	Squirrels
Spermophilus beecheyi	California Ground Squirrel
Geomyidae	Pocket Gophers
Thomomys bottae	Botta's Pocket Gopher
Cricetidae	Native Mice, Rats, and Voles
Reithrodontomys megalotis	Western Harvest Mouse
Peromyscus maniculatus	Deer Mouse
Microtus californicus	California Vole
Canidae	Foxes, Wolves, and allies
Canis latrans	Coyote



MAP 1. TUSTIN MARINE CORPS AIR STATION:
Vicinity Map.

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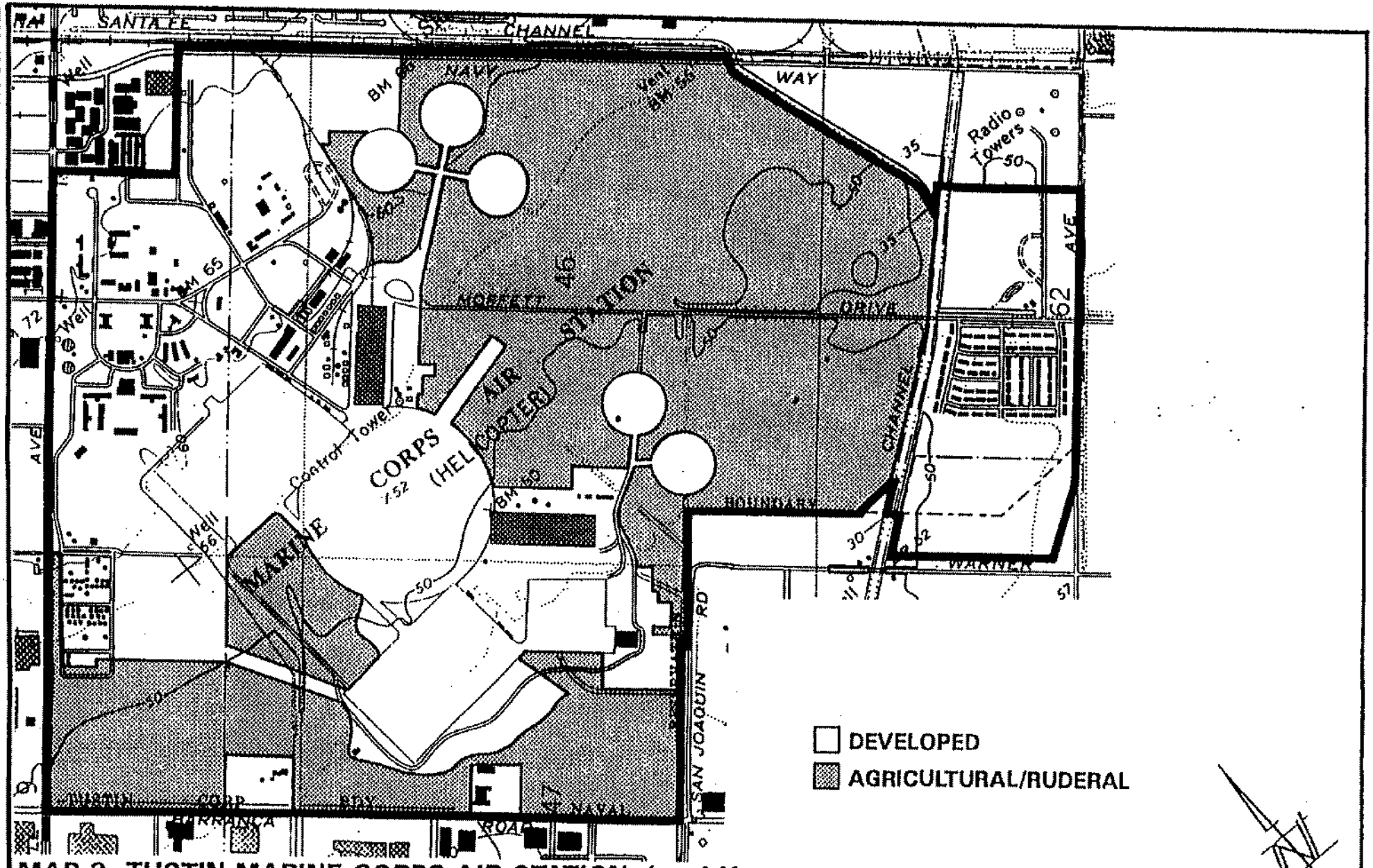
MAP 2. TUSTIN MARINE CORPS AIR STATION: Location Map.

MAP SOURCE: USGS 7.5' Tustin Quad.

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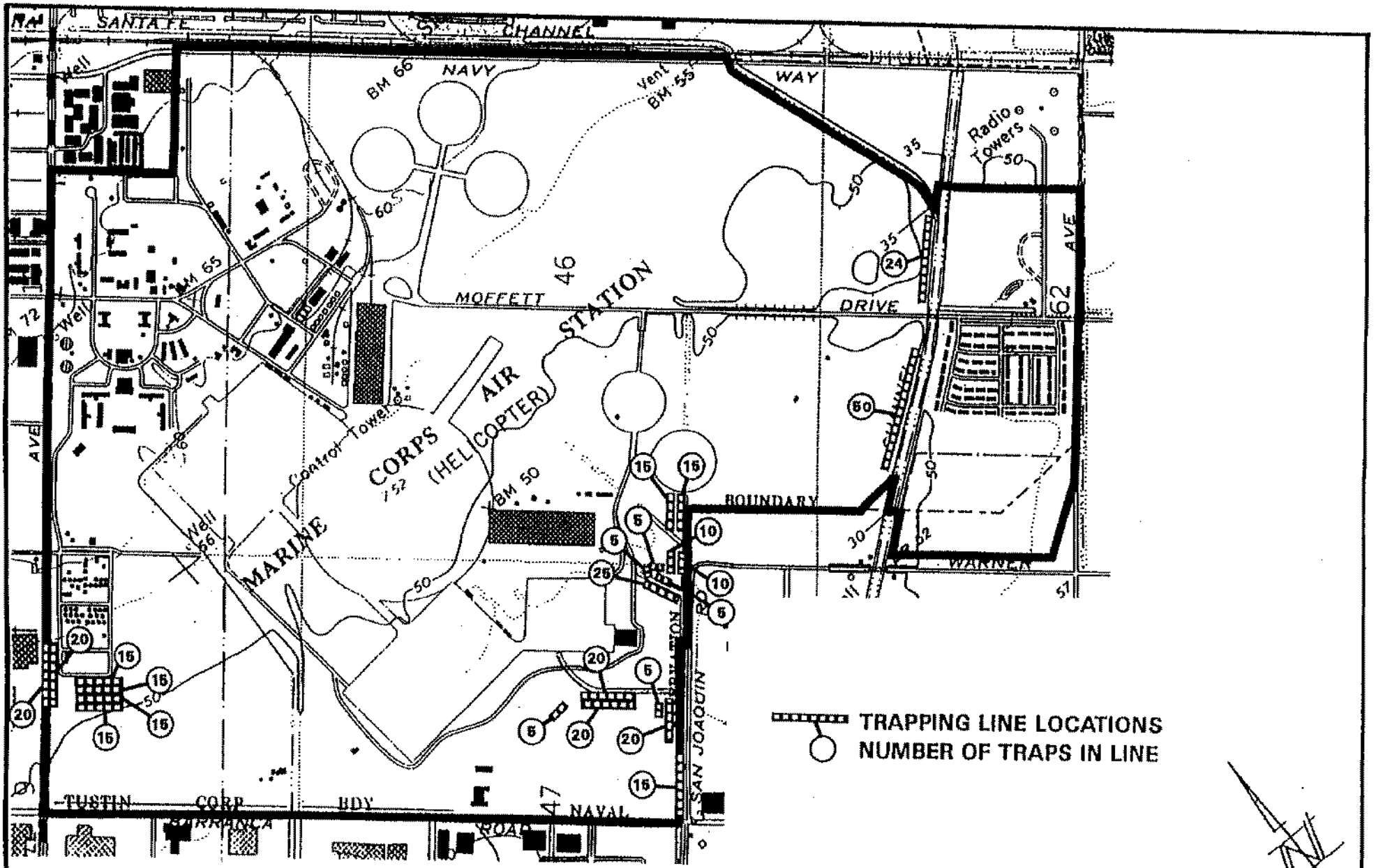


MAP 3. TUSTIN MARINE CORPS AIR STATION: Land Use.

MAP SOURCE: USGS 7.5' Tustin Quad.

Tierra Madre Consultants

TMC #92-103

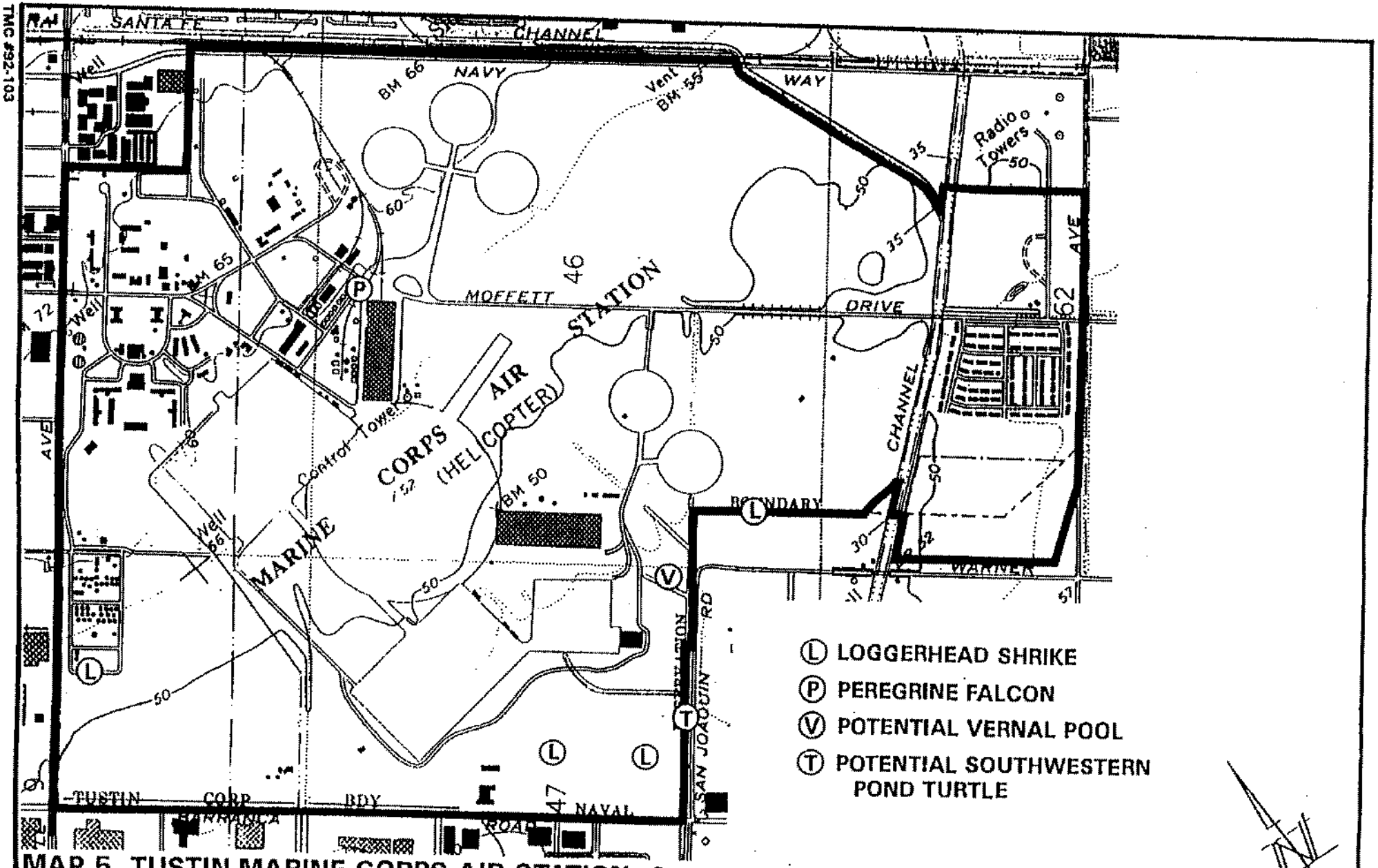


MAP 4. TUSTIN MARINE CORPS AIR STATION: Trapping Locations.

MAP SOURCE: USGS 7.5' Tustin Quad.

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TMC #92-103



MAP 5. TUSTIN MARINE CORPS AIR STATION: Sensitive Elements.

MAP SOURCE: USGS 7.5' Tustin Quad.

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APPENDIX. Species reported by Brown and Caldwell (1985) not detected on the Station during present surveys.

PLANTS				
Latin name	Common name	Habitat	On-site occurrence probability	
			Present	Historic
Anacardiaceae	**Cashew family**			
Rhus integrifolia	Lemonadeberry	Chaparral, coastal sage scrub	Absent (NSH)	Low
Rhus laurina (syn. *Malosma l.*)	Laurel sumac	Chaparral, coastal sage scrub	Absent (NSH)	Low
Asteraceae	**Sunflower family**			
Artemisia californica	California sagebrush	Dry hillsides; coastal sage scrub	Absent (NSH)	Low
Brassicaceae	**Mustard family**			
Lepidium nitidum	Shining peppergrass	Common in chaparral, coastal sage scrub, valley grassland	Moderate	High
Cactaceae	**Cactus family**			
Opuntia occidentalis	Hybrid prickly-pear X ornamental cactus	S. Calif. chaparral and coastal sage scrub	Absent (NSH)	Low
Crassulaceae				
Dudleya stolonifera	Laguna Beach dudleya	Cliffs in coastal canyons; endemic in coastal Orange Co.	Absent (NSH)	Absent (NSH)
Fabaceae	**Pea family**			
Lotus scoparius	Deerweed	Coastal sage scrub, chaparral, dry grassland	Low	Low
Lamiaceae	**Mint family**			
Salvia apiana	White sage	Chaparral, coastal sage scrub, desert shrublands	Absent	Low
Salvia leucophylla	Whiteleaf sage, purple sage	Chaparral, coastal sage scrub	Absent	Low
Salvia mellifera	Black sage	Chaparral, coastal sage scrub	Absent	Low
Polygonaceae	**Buckwheat family**			
Eriogonum fasciculatum	California buckwheat	Chaparral, coastal sage scrub, etc.	Absent (NSH)	Low
Primulaceae	**Primrose family**			
Dodecatheon clevelandii	Shooting star	Valley grassland, coastal sage scrub	Low	Moderate
Ranunculaceae	**Buttercup family**			
Ranunculus californicus	California buttercup	Moist meadows	Low	Moderate
Rosaceae	**Rose family**			
Rosa californica	California wild rose	Meadows, woodlands, streamsides	Absent	Low
Violaceae	**Violet family**			
Viola penduncalata	Johnny jump-up	Valley grassland and coastal sage scrub	Low	Moderate

Abbreviations: NSH = no suitable habitat. OSR = outside species' range.

APPENDIX: Plants continued.

Latin name	Common name	Habitat	On-site occurrence probability	
			Present	Historic
Amaryllidaceae	**Onion family**			
Allium haematochiton	Red-skinned wild onion	Dry slopes & ridges, clay or stony soil; chaparral coastal sage scrub, grassland	Absent (NSH)	Absent
Bloomeria crocea	Golden stars	Many habitats, often in heavy soils	Low-moderate	High
Brodiaea pulchella (syn. *Dichelostemma p.*)	Wild hyacinth, blue dicks	Lowlands and hillsides, many habitats	Moderate-high	High
Lliaceae	**Lily family**			
Chloragalum pomeridianum	Wavy-leaf soap-plant	Dry grasslands and coastal sage scrub	Low	Moderate
Fritillaria biflora	Chocolate lily	Grassy meadows, heavy soils	Low	High
Poaceae	**Grass family**			
Andropogon saccharoides (syn. *Bothriochloa barbinoides*)	Beardgrass	Dry slopes, coastal sage scrub, chapparal, etc.	Absent (NSH)	Low
Melica frutescens	Melic grass	Dry slopes; deserts and coastal sage scrub	Absent	Low
Stipa speciosa	Desert needlegrass	Mojave and Colorado deserts, occasional in chaparral.	Absent (NSH)	Absent
		AMPHIBIANS AND REPTILES		
Bufonidae	**True Toads**			
Bufo boreas halophilus	California Toad	Slow-moving streams, with pools; marshes, lakes, ponds, etc.	Moderate	High
Iguanidae	**Iguanid Lizards**			
Uta stanburiana elegans (syn. *U. s. hesperis*)	California Side-blotched Lizard	Arid and semi-arid areas, typically near sand (washes) and rocks	Low	Low
Phrynosoma coronatum blainvillii	San Diego Horned Lizard	Coastal sage scrub, chaparral, riparian scrub	Absent (NSH)	Absent
Scincidae	**Skinks**			
Eumeces skiltonianus	Western (Blue-tailed) Skink	Foothill grassland, chaparral, and pine-oak, pine, juniper, and piñon-juniper woodlands	Absent (NSH)	Absent
Leptotyphlopidae	**Slender Blind Snakes**			
Leptotyphlops h. humilis	Southwestern Blind Snake	Moist habitats with soils suitable for burrowing	Low	Low
Boidae	**Boas and Pythons**			
Lichnura trivirgata roseofusca	Coastal Rosy Boa	Rocky shrublands and deserts, often near water	Absent (NSH)	Absent

APPENDIX: Amphibians and Reptiles continued.

Latin name	Common name	Habitat	On-site occurrence probability	
			Present	Historic
Colubridae	**Colubrid Snakes**			
Diadophis punctatus (syn. *D. amabilis*)	Ringneck Snake	Moist habitats from mountains to lowlands, usually near grassland	Low	Low
Pituophis melanoleucus	Gopher Snake	Common in many habitats throughout California.	Moderate	High
Lampropeltis getulus californiae	California Kingsnake	Widespread in lowland habitats	Moderate	High
Lampropeltis getulus boylii	Boyle's Kingsnake	Subspecies merged with *L. g. californiae* long ago; see Blaney (1977) for a complete discussion	N/A	N/A
Masticophis [Coluber] lateralis	Striped Racer (Cal. Whipsnake)	Chaparral and coastal sage scrub, usually with grassland and rocks intermixed	Absent (NSH)	Absent
Tantilla planiceps	California Black-headed Snake	Foothill grassland, chaparral, thornscrub, oak and oak-pine woodlands	Absent (NSH)	Absent
Viperidae	**Vipers**			
Crotalus ruber	Red Diamond Rattlesnake	Coastal sage scrub, open chaparral, lowland woods	Absent (NSH)	Absent
Crotalus mitchellii pyrrhus	Sw. Speckled Rattlesnake	Rocky areas; deserts scrub, sage scrub, etc.; in Orange County, occurs only in Santa Ana Mts.	Absent (OSR)	OSR
Crotalus viridis	Western (Pacific) Rattlesnake)	Widespread in California from mountains to deserts; frequants rocky areas, woodland, scrub, chaparral, forest, etc.; avoids developed areas.	Absent (NSH)	Low
		BIRDS[1]		
Accipitridae	**Hawks and Eagles**			
Elanus caeruleus	Black-shouldered Kite	See Table 3.	Expected	High
Circus cyaneus (syn. *C. hudsonius*)	Northern Harrier	See Table 3.	Expected	High
Accipiter cooperii	Cooper's Hawk	See Table 3.	High	High
Buteo lineatus	Red-shouldered Hawk	Woodland; riparian forest; avoids open areas	Low	Low
Aquila chrysaetos	Golden Eagle	Rocky footbills for nesting; grassland/savannah for foraging; also desert/arid scrub	Low	Low
Phasianidae	**Quails, Pheasants, and allies**			
Callipepla californica (syn. *Lophortyx californicus*)	California Quail	Chaparral, coastal sage scrub, piñon-juniper	Absent (NSH)	Absent

1. Note that for birds, the subspecies designations given by Brown and Caldwell (1985) have been largely ignored. Unlike amphibians, reptiles, and mammals, all of which have essentially "fixed" ranges, birds are highly mobile are often move large distances. As such, without specimen data from the Station, determination of the subspecies present is mere conjecture.

APPENDIX: Birds continued.

Latin name	Common name	Habitat	On-site occurrence probability	
			Present	Historic
Cuculidae	**Typical Cuckoos**			
Geococcyx californianus	Greater Roadrunner	Arid regions; desert scrub, open chaparral, and coastal sage scrub	Absent (NSH)	Absent
Tytonidae	**Barn Owls**			
Tyto alba	Barn Owl	Variety of lowland habitats, including suburbia	Expected	High
Strigidae	**Typical Owls**			
Speotyto cunicularia	Burrowing Owl	Open area; pastures, short-grass grasslands, farms	Low	High
Caprimulgidae	**Nightjars**			
Chordeiles minor	Common Nighthawk	Occurs nowhere near Orange County; the only county record is a lost migrant (now a specimen)	Absent (OSR)	Absent
Phalaenoptilus nuttallii	Common Poorwill	Chaparral, sage scrub, desert scrub	Absent (NSH)	Absent
Tyrannidae	**Tyrant Flycatchers**			
Sayornis saya	Say's Phoebe	Winters in coastal So. Calif. in open areas; farmlands, pastures, desert scrub, open grassland	High	Higb
Tyrannus vociferans	Cassin's Kingbird	Cismontane/valley woodland, usually with oaks	Low	Low
Muscicapidae	**Thrushes and allies**			
Catharus guttatus (syn. *Hylocichla guttatus*)	Hermit Thrush	Winters in coastal So. Calif. in wooded areas	Low	Low
Mimidae	**Thrashers**			
Toxostoma redivivum	California Thrasher	Chaparral and coastal sage scrub	Absent (NSH)	Absent
Emberizidae	**Warblers, Sparrows, Blackbirds**			
Pipilo crissalis	California Towhee	Chaparral, sage scrub, riparian corridors	Absent (NSH)	Absent
(Brown and Caldwell refer to this species as "Brown Towhee," which was the name of California Towhee before Brown Towhee was split. The latin name they use, however, is *P. maculatus*, which actually refers to the Rufous-sided Towhee.)				
Aimophila ruficeps	Rufous-crowned Sparrow	Coastal sage scrub, chaparral; usually rocky areas	Absent (NSH)	Absent
Spizella atrogularis	Black-chinned Sparrow	Chaparral	Absent (NSH)	Absent
Chondestes grammacus	Lark Sparrow	Grassland, agricultural areas	High	High
Amphispiza belli belli	Bell's Sage Sparrow	Chaparral, coastal sage scrub; in Orange County, occurs only in Santa Ana Mts. and s. Laguna Hills	Absent (OSR)	Absent
Zonotrichia leucophrys gambelii	Gambel's White-crwn. Sparrow	Winters in coastal So. Calif.; typically in scrub, chaparral, and suburbia	High	High
Molothrus ater	Brown-headed Cowbird	Riparian, open scrub for nesting; forages in open areas such as agricultural areas	High	High

MAMMALS

Latin name	Common name	Habitat	On-site occurrence probability	
			Present	Historic
Vespertilionidae	**Evening Bats**			
Antrozous pallidus pacificus	Pallid Bat	Grassland, shrubland, woodlands; most common in dry areas with rocks	Low	Low
Leporidae	**Rabbits and Hares**			
Sylvilagus bachmani cinerascens	Brush Rabbit	Chaparral, early successional oak/conifer woodland	Absent (NSH)	Absent
Lepus californicus bennettii	San Diego Blk.-tailed Jackrabbit	Coastal sage scrub, chaparral	Absent (NSH)	Absent
Heteromyidae	**Pocket Mice and Kangaroo Rats**			
Chaetodipus fallax fallax	San Diego Pocket Mouse	Sandy herbaceous areas, usally with rocks or gravel; coastal sage scrub, chaparral, grassland, piñon-juniper	Low	Low
Chaetodipus californicus (syn. *Perognathus californicus*)	California Pocket Mouse	Various habitats from grassland to chaparral to open hardwood/conifer woodlands	Low	Low
Dipodomys agilis agilis	Pacific Kangaroo Rat	Coastal scrub, chaparral, and desert scrub	Absent (NSH)	Absent
Cricetidae	**Native Mice, Rats, and Voles**			
Peromyscus eremicus fraterculus	Cactus Mouse	Desert scrub, piñon-juniper, coastal sage scrub	Absent (NSH)	Absent
Peromyscus californicus insignis	California Mouse	Montane woodland, coastal scrub, valley grassland	Low	Low
Neotoma lepida	Desert Woodrat	Rocky areas; chaparral, coastal sage and desert scrub	Absent (NSH)	Absent
Neotoma fuscipes macrotis	Dusky-footed Woodrat	Chaparral, forests with dense understory	Absent (NSH)	Absent
Canidae	**Foxes, Wolves, and allies**			
Urocyon cinereoargenteus	Gray Fox	Riparian, chaparral, deciduous and coniferous areas; occurs in some farmland areas	Absent (NSH)	Low
Mustelidae	**Weasels and allies**			
Spilogale gracilis phenax	Western Spotted Skunk	Shrub and brush habitats with moderate canopy	Absent (NSH)	Absent
Mephitis mephitis holzneri	Striped Skunk	Found in nearly all habitats; usually grassy areas	Moderate	High

TIERRA DATA SYSTEMS

10110 West Lilac Road • Escondido, CA 92026 • 760-749-2247 • FAX 760-751-9707

October 29, 1999

Ms. Kim O'Connor
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Hwy
San Diego, CA 92132

Re: Amendment to MCAS Wetland Delineation
Contract No. N68711-95-D-7605/0051

Dear Kim:

As a result of discussions with Mr. Dana Ogdon of the City of Tustin, we now understand that the maps provided to us by the US Navy for the project described above were not current with respect to the boundaries of the MCAS Tustin property.

Because of this, we have re-calculated the acreage of jurisdictional wetlands and Waters of the U.S. for the property. The enclosures provided replace Map 7 of the report dated August 18, 1999.

Here is a summary of the new results:

- Jurisdictional wetlands – 2.37 acres
- Jurisdictional Waters of the U.S. – 29.0 acres

Should you have any questions or require additional information, please contact this office.

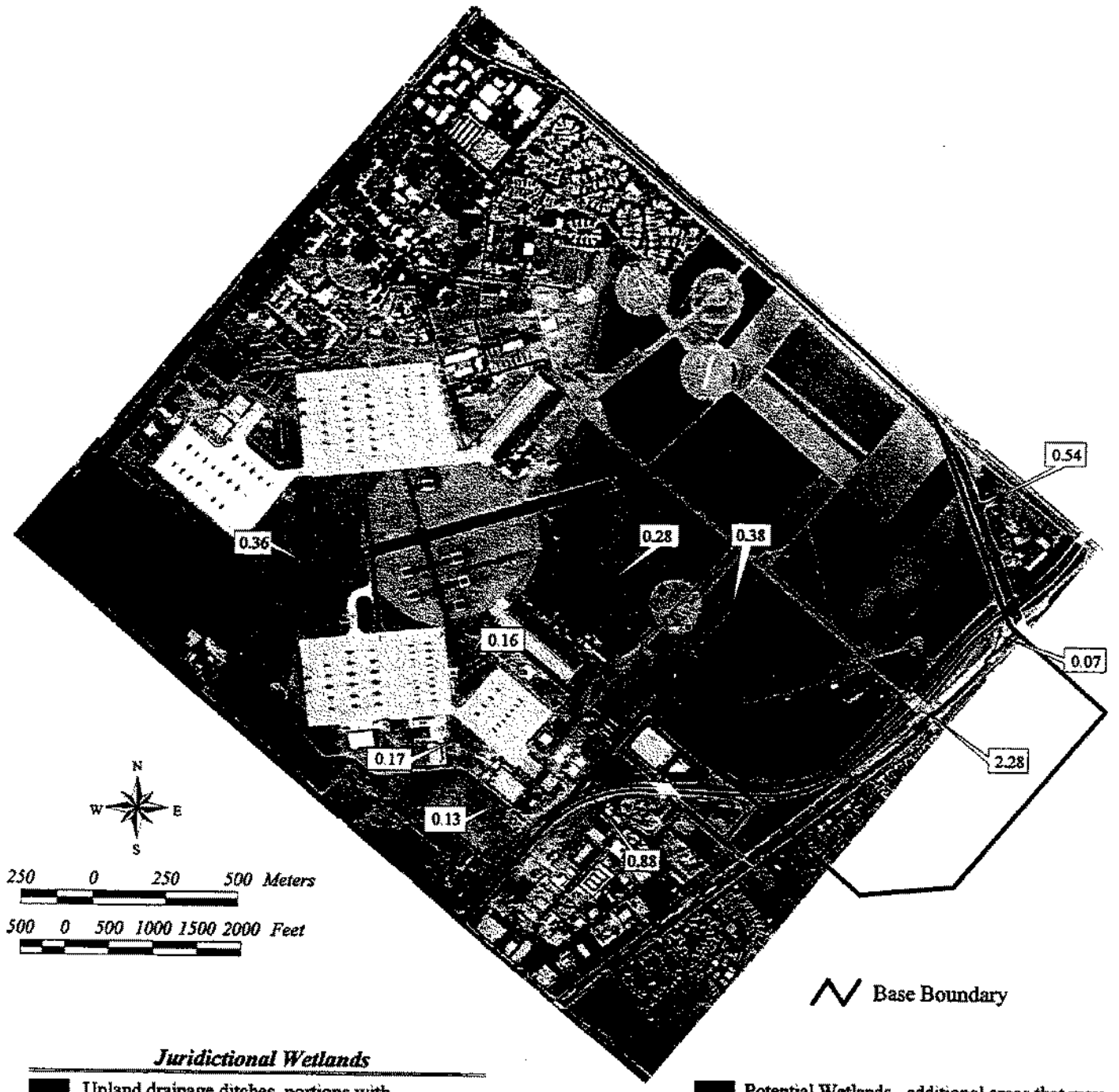
Sincerely,

Elizabeth Kellogg

cc: Dana Ogden, City of Tustin
Melanie Ault, SWDIV

Enclosures: Map 1
Map 2

Jurisdictional Wetlands



Juridictional Wetlands

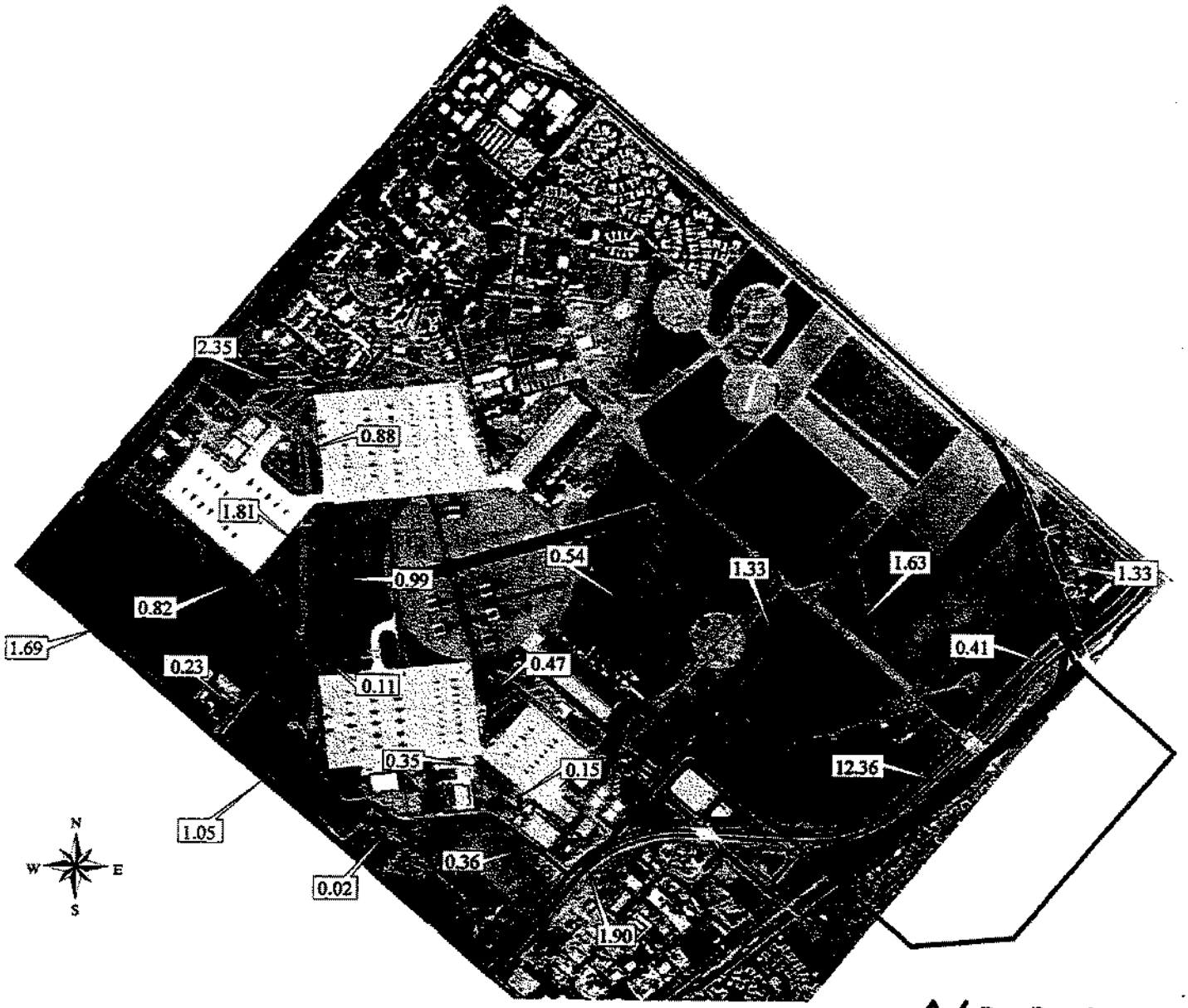
- Upland drainage ditches, portions with hydric vegetation , soils, and hydrology = (0.36+0.16+0.17+0.13+0.88+0.28) = 1.99 acres
- Agricultural ditch (NRCS wetland juridiction), vegetated portion = 0.38 acres

Approximate Total Wetlands = 2.37 acres

- Potential Wetlands - additional areas that may become vegetated if channels are left unmaintained (vegetated in 1993 aerial photo)
  - Peter's Canyon (2.28 + 0.07) = 2.35 acres
  - Santa Ana-Santa Fe = 0.54 acres

Total Potential Wetlands = 2.89 acres

Jurisdictional Waters of the U.S.
and Other Surface Waters



Base Boundary

Juridictional Waters of the U.S.

- Upland drainage ditches, bank-to-bank, inclusive of vegetated areas = (0.99+1.90+0.36+0.35+0.47+0.54) = 4.61 acres
- Agricultural ditch with wetland portions, bank - to - bank = (0.11+0.82+1.33) = 2.26 acres
- Concrete or mowed drainage ditches without hydric vegetation, bank-to-bank = (2.35+0.88+1.81+0.23) = 5.27 acres
- Rock-lined channels, bank-to-bank,
  - Peter's Canyon = (12.36+0.41) = 12.77 acres
  - Santa Ana - Santa Fe = 1.33 acres
  - Barrancas = (1.69+1.05) = 2.74 acres

Approximate Total Waters of the U.S. = 28.98 acres

Other Surface Waters

- Agricultural ditch, unvegetated= 1.63 acres
- Seasonal pools = 0.17 acres

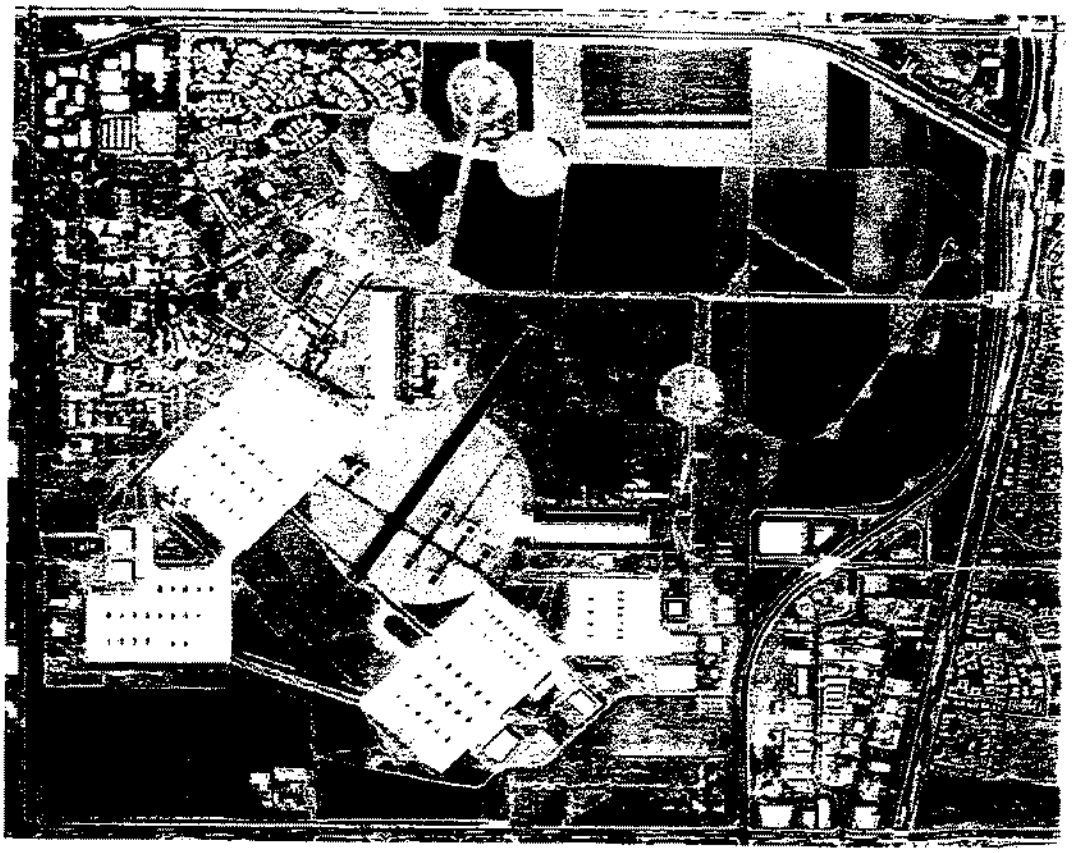
250 0 250 500 *Meters*

500 0 500 1000 1500 2000 *Feet*

Wetlands Delineation

Marine Corps Air Station (MCAS) Tustin

August 18, 1999



Wetlands Delineation

Marine Corps Air Station (MCAS) Tustin

August 18, 1999

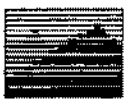
Prepared for:

Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132

Contact: Ms. Kim O'Connor (619) 532-4924

Under
Contract No. N68711-95-D-7605/0051

This plan was prepared by:



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Keri Salmon
Michael Roberts

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Marine Corps Air Station (MCAS) Tustin Wetlands Delineation

1.0 Purpose and Need

Tierra Data Systems (TDS) was asked to review former wetland inventories at MCAS Tustin which appear to be in contradiction with each other. The study area is the MCAS, including about 40 acres of ditches and seasonal ponds (see Map 1). MCAS Tustin is located in Orange County in coastal southern California, at Township 5 South, Range 9 West, Sections 9, 10, 46, 47, and 62.

The objective of the wetlands inventory is to provide sufficiently detailed and accurate jurisdictional delineations to support the subsequent assessment of impact, permit processing and mitigation planning. The inventory addresses all potential regulatory boundaries and separately mapped:

- Jurisdictional wetlands (Section 404), and
- Waters of the United States (Section 404).

Wetland delineation is necessary for land owners and managers to comply with the Clean Water Act and other laws, which require that these ecologically valuable areas be protected. Ecosystem functions in wetlands belie their small area. They can profoundly affect the natural vitality of an entire region. The reason there has been such a national focus on wetlands is at least in part because so few remain from pre-settlement times. In California, 91 percent are estimated to be lost to conversion to farmland, flood control, water diversion and urban development (Dahl 1990). This has been detrimental to bird, mammal, and other wildlife populations. Also, wetland degradation can be caused by seemingly unrelated or indirectly connected activities, such as changes in upstream drainage contours, increased runoff from upslope developments, pumping, or plowing too deeply in a claypan that supports vernal pools. Effects originating off-site have necessitated comprehensive regulation in order to adequately manage resources.

Interpretation of the field data collected and conclusions about jurisdictional status in this report are subject to confirmation and review by the U.S. Army Corps of Engineers (USACOE or Corps) or Natural Resources Conservation Service (NRCS) on the agricultural portions. They make the final jurisdictional determination. They were contacted and visited the site independently during the course of this investigation.

2.0 Federal and California Wetland Regulations

Section 404 of the Clean Water Act (CWA) gave regulatory authority over Waters of the U.S., which includes wetlands, to the Environmental Protection Agency (EPA). The EPA delegated this authority to the USACOE, but retains veto power over permit decisions. The agencies and jurisdictions involved in California wetland regulation are listed in Table 1.

"Waters of the U.S." is the general category of regulated water bodies defined in the Clean Water Act (see Table 1). Discharges of dredge or fill into these water bodies, which include wetlands, are regulated under Section 404 of the Act. Wetlands isolated from surface water bodies, such as vernal pools, also fall under Corps regulation.

Table 2 lists the types of regulated water bodies, and some that are specifically excluded from regulation. Wetlands are more highly scrutinized than most other types of Waters of the U.S. with respect to their delineation, and mitigation measures and ratios applied to them. Some types of Waters of the U.S. are not intuitively obvious, but are in fact regulated. These include vernal pools, desert playas, ephemeral swales, desert arroyos, sea-

sonal ponds, reservoirs, farm or stock ponds fed by direct rainfall or impoundment (not by pumped water), artificial wetlands that receive water without artificial controls (such as pumps, valves, or gates), and farmed wetlands.

Table 1. Jurisdictional authorities over Wetlands and other regulated Waters (adapted from Cylinder et al. 1995).

Agency	Regulation	Authority	Jurisdiction
U.S. Environmental Protection Agency	Clean Water Act NEPA, CEQA	Enforcement; veto power over a Corps-issued permit. Comment only.	Waters of the U.S, including wetlands
U.S. Army Corps of Engineers	Clean Water Act, Section 404	Regulates dredge and fill.	Waters of the U.S, including wetlands
Natural Resource Conservation Service (NRCS)	Food Security Act, 59 CFR 12, January 19, 1994. Commonly known as the "Swampbuster" Act.	Regulates activities in agricultural areas.	Farmed Wetlands associated with agricultural lands.
State and Regional Water Quality Control Boards	Clean Water Act, Section 401, 402 CEQA, NEPA	Issues water quality certification, which is required for 404 permit. Regulates discharge of waste. Comment only.	Waters of the U.S., including wetlands

Table 2. Regulatory terminology addressing waters of the United States (adapted from Cylinder et al. 1995).

TERMS AND DEFINITIONS
Waters of the U.S. (Clean Water Act, Section 404): 1. Special Aquatic Sites: • Wetlands (seasonally or perennially waterlogged, and supporting specially adapted plants; usually in the transition zone between uplands and deep water habitats) • Sanctuaries and Refuges (federal, state, or locally designated) • Mudflats (periodically inundated, unvegetated tidal flats, or inland lake/pond/stream margins) • Vegetated Shallows (permanently inundated with rooted, submerged plants) • Coral Reefs (invertebrate deposits in warm oceans) • Riffle and Pool Complexes (alternating turbulent and calm portions of streams over coarse substrate that provide high quality fish and wildlife habitat) 2. Territorial Seas - Zero Ordinary Low Tide and seaward three nautical miles 3. Tidal Waters - High Tide Line (includes spring and other periodic high tides but not storm surges) 4. Nontidal Waters - Ordinary High Water Mark **Water bodies specifically excluded from Section 404 regulation:** 1. Irrigation ditches 2. Drainage ditches excavated in uplands 3. Temporary sediment basins on construction sites 4. Reflecting pools 5. Wastewater systems, including treatment ponds and lagoons 6. Ponds and wetlands that are part of an ongoing mining operation, unless created as mitigation for past impacts

Tustin Marine Corps Air Station
Regional Map



Map 1. MCAS Tustin regional context.

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3.0 Methods

The methods used to delineate Wetlands on MCAS Tustin are outlined below.

A. Compile and review existing resources:
   1. National Wetlands Inventory map from GIS; earlier surveys and plant lists; SCS Soil Survey for identification of hydric soils; USGS 1:24,000 topographic maps for hydrologic "blue lines;" and aerial photos (1928, 1938, 1953, 1974 (USDA Soil Conservation Service), and early 1990's).
   2. Classify hydric vegetation based on USFWS classification of wetland and deepwater habitats (Reed 1988).

B. Determine areas supporting or with the potential to support hydrophytic vegetation, or sites adjacent to these (Federal Interagency Committee for Wetlands Delineation (FICWD) 1989).
   1. Record evidence supporting the three-parameter criteria for Section 404 wetlands on data forms from the 1987 Corps Wetlands Delineation Manual (USACOE 1987). In each location, a number of indicators are evaluated to determine if a site qualifies as a legal wetland. Each of three criteria must be satisfied:
      a. Predominance of vegetation adapted to an anaerobic soil environment. Transects will cross suspected wetland areas and points will be established in all vegetation communities and near the wetland boundary in sufficient quantity to determine the wetland boundary. Areas estimated visually to have 50 percent or more cover obligate, facultative-wetland, or facultative plants are considered to have met the hydrophytic vegetation criterion of the three-criterion method set forth in USACOE (1987).
      b. Presence of hydric soils, that is, evidence of an anaerobic soil environment in the upper portion of the soil profile due to ponding, flooding, or saturation. Dig sample soil test pits to a depth of 18 inches. Check Munsell color charts, vertical streaking, high organic matter, mottling, and for spodic and organic pans. Indicate whether soils are similar or dissimilar to soil mapping unit from the Soil Survey. Observe the hole for standing water or seepage from nearby areas. This criterion is fulfilled if there is evidence of long-term reducing conditions.
      c. Presence of regular inundation or saturation for a sufficient duration to cause anaerobic conditions in the soil root zone, based on flow pattern, scouring, ponding and accumulation of debris and sediment.

C. Map jurisdictional wetlands, jurisdictional non-wetland waters of the United States, nearby non-wetlands, and locations of test pits. Use Global Positioning System (GPS) to confirm mapping accuracy.

D. Photograph representative areas.

4.0 Site Description

Climate

The Station is located within the maritime sub-climate of the prevailing California Mediterranean-type climate. This local climate is characterized hy mild winters, cool summers, infrequent rainfall, moderate daytime onshore winds, and frequent early morning clouds that give way to afternoon sunshine.

Small daily and seasonal temperature ranges and high relative humidities are characteristic of this climate. The annual average temperature is 62° F. The average annual number of frost-free days is 280 to 350 days.

Annual precipitation ranges from 12 to 15 inches. January is usually the wettest month with an average of two to three inches of precipitation, while July is usually the driest month with a mean of nearly no precipitation. The arid summers are punctuated by Santa Ana winds. *El Nino* conditions occur periodically, bringing southern California wetter than usual winters and heavy storms.

Topography and Soils

The Tustin property elevation ranges from 45 to 60 feet above sea level. It is about 8.4 miles from the Pacific Ocean in a straight line, or 9.5 miles along the drainages leading to the sea. Topography is nearly level, except for incised drainage channels.

The following soils have been mapped on the Station (USDA Soil Conservation Service 1978) and are depicted on Map 2:

Soil 139 - Chino silty clay loam: Chino soils are in alluvial fans along floodplains. This soil is nearly level. It contains some Omni clay inclusions. Depth to a seasonal water tahle is 42 to 60 inches, and runoff is very slow.

Soil 140 - Chino silty clay loam, drained: This soil is nearly level and occurs on alluvial fans. It contains about five percent Omni clay inclusions. Runoff is slow when the soil is hare. Drainage has been altered historically with ditcbes and canals to support agricultural crops.

Soil 183 - Omni clay: Omni soils are in floodplains and hasins. They have slopes from zero to two percent. Runoff is very slow. The clay has high shrink-swell properties. The surface profile is typically mottled due to anaerobic conditions from a high water table or frequent flooding.

None of the above soils are on the Hydric Soils List for Orange County.

The level of soil resolution for Soil Survey maps is appropriate for planning purposes only. For activities where soil properties are important, such as construction projects, testing should be done to confirm the nature of the soil on site. For wetland delineation, the soil on site does not always match the mapping unit for the type, and this is noted on the data sheet.

Vegetation

Several types of wetland communities were classified by the USFWS National Wetlands Inventory and mapped on the Station. The definition used to classify "wetlands" hy the USFWS is mucb broader than that appropriate for mapping jurisdictional status under the Clean Water Act. The USFWS maps were delineated from aerial photos flown in 1990 at a scale of 1:40,000 with little field checking (see Map 3). Consequenly, these delineations represent potential jurisdictional wetlands, not actual. The vegetation classification includes:

Palustrine Emergent Wetlands: Seasonally or temporarily flooded riparian areas with herbaceous, perennial hydrophytes most of the growing season in most years. On MCAS, these areas are dominated hy *Typha latifolia* (cattail).

Palustrine Scrub-Shrub Wetland: Seasonally or temporarily flooded riparian areas with woody shruhs or saplings less than 20 ft tall. Some of the drainage ditches on the Station support shruhby vegetation and rarely trees, such as *Baccharis salicifolia* (mulefat or seep-willow), *Salix goodingii* (Gooding's black willow), and *Washingtonia filifera* (fan palm).

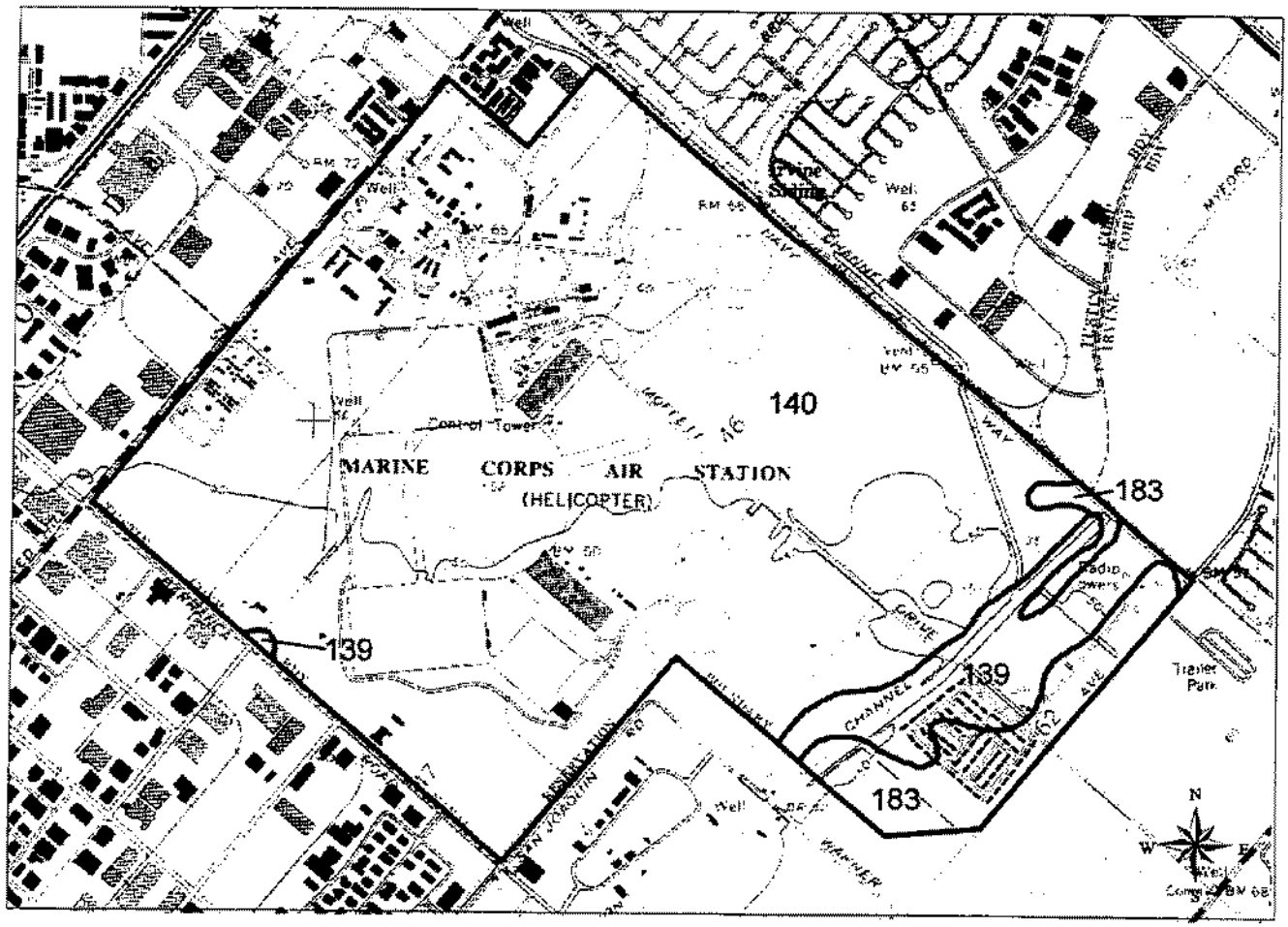
Historical Land Use

Historical aerial photos from 1928, 1938, and 1953 (shown in Maps 4, 5 and 6) show the dominance of agriculture in the Station's history. The area was an important lima bean growing area for the years between the two World Wars. The 1928 image shows sheep grazing in fallow fields (irregular light-colored forms in the center of the fields). In the property's eastern corner, a minor drainage and a second that leads into it approach the Peters Canyon Channel. Peters Canyon Channel in 1928 appears in its more naturalized stream configuration, to be gradually more and more confined and straightened over the coming years. A small drainage appears to exist at a location later identified as Site 6 (see Map 7). In 1938 the property continues to be farmed in field crops. Peters Canyon Channel has been straightened, and the drainage entering from the north appears obliterated where it crosses onto MCAS property. By 1953 the Air Station was in operation. Evidence of the drainages entering into the northeast corner is gone from this photo. Crossing the property at that location by 1953 is the Santa Fe-Santa Ana flood control channel.

The agricultural and other lands on MCAS property have had tile drains installed to improve drainage (Perdue, pers. comm.). Irrigation and other ditches have been routinely maintained without undergoing permitting procedures. A traditional use of the irrigation ditches has been a locally-celebrated Marine Corps exercise called the "Mud Run" (Osumi, pers. comm.; Perdue, pers. comm.).

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Tustin Marine Corps Air Station - Soils

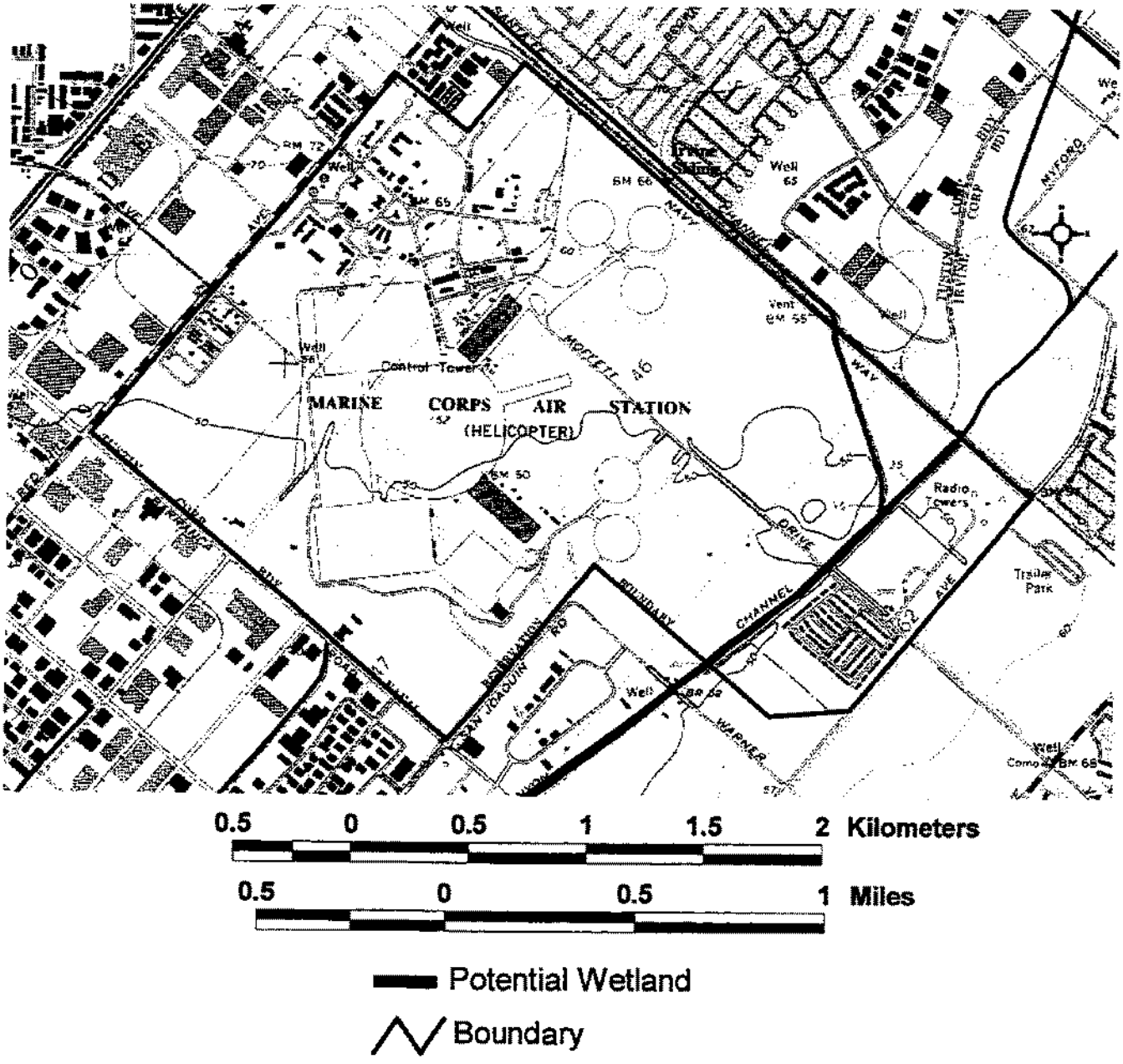


139 - Chino silty clay loam, drainage unaltered (98 acres)
140 - Chino silty clay loam, drained (1358 acres)
183 - Omni clay, poorly drained (95 acres)

Map 2. Soil mapping units.

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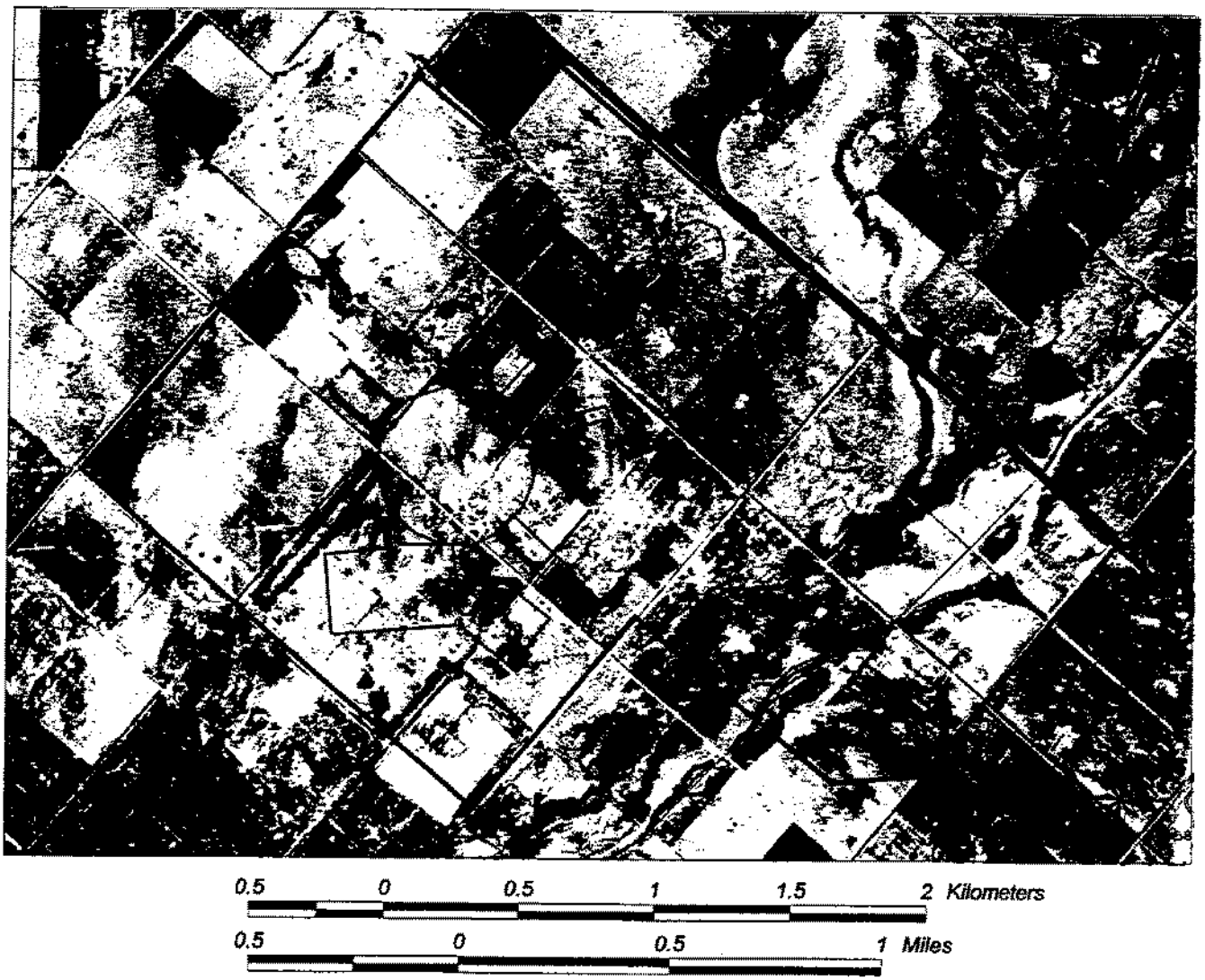
Tustin Marine Corps Air Station
National Wetlands Inventory



Map 2. Soil mapping units.

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Tustin Marine Corps Air Station
1928 Air Photo



Map 4. Aerial Photo 1928.

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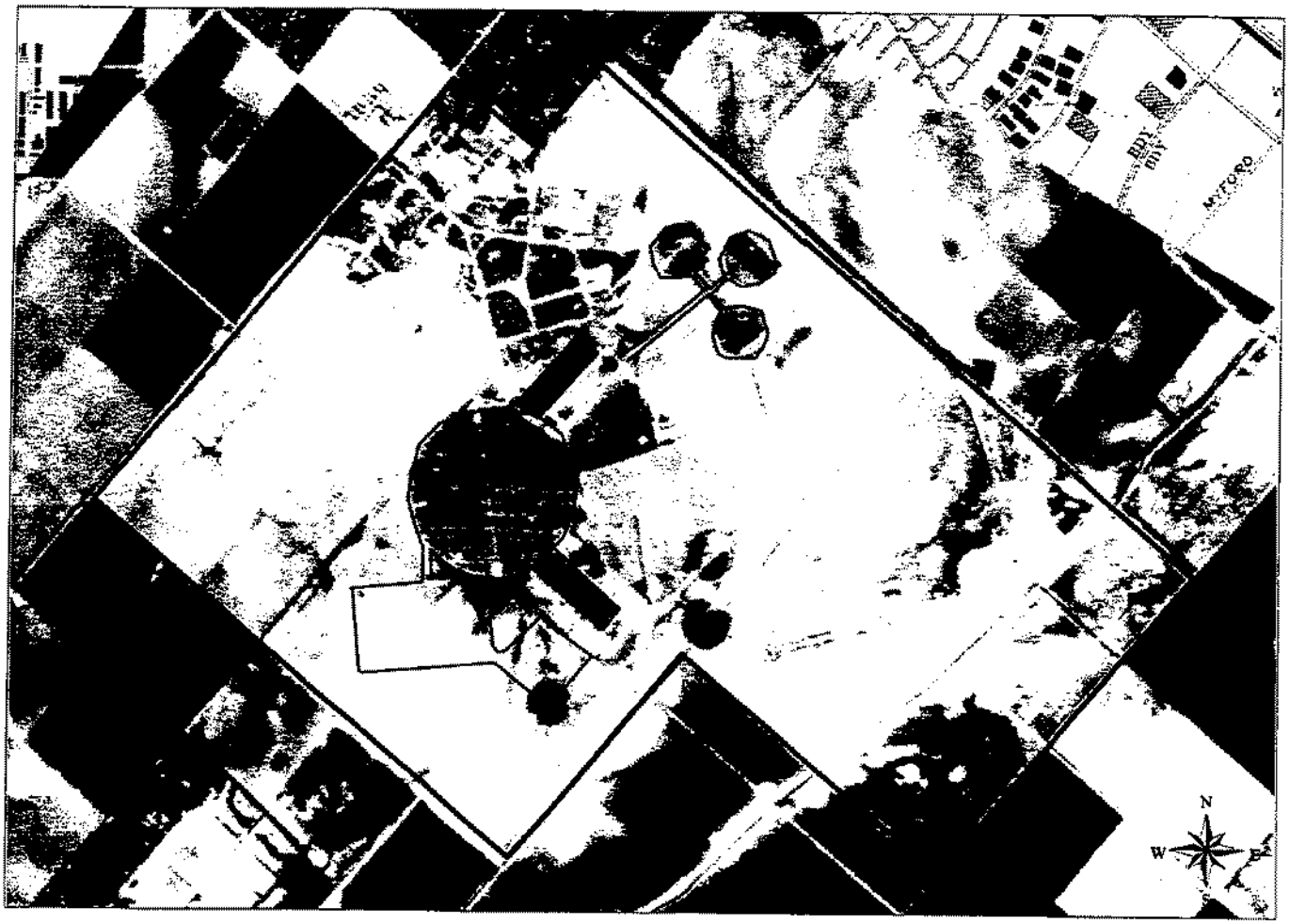
Tustin Marine Corps Air Station
1938 Air Photo



Map 5. Aerial photo 1938.

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Tustin Marine Corps Air Station
1953 Air Photo



Map 6. Aerial photo 1953.

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5.0 Results and Discussion

The field evaluation of wetland communities occurred on February 2, 1999, and included a second visit in April to observe certain plants in flower to confirm their identification. Additional field visits were conducted on June 9, 1999 and August 17,1999. Field data sheets and photographs of some sites may be found in the Appendix.

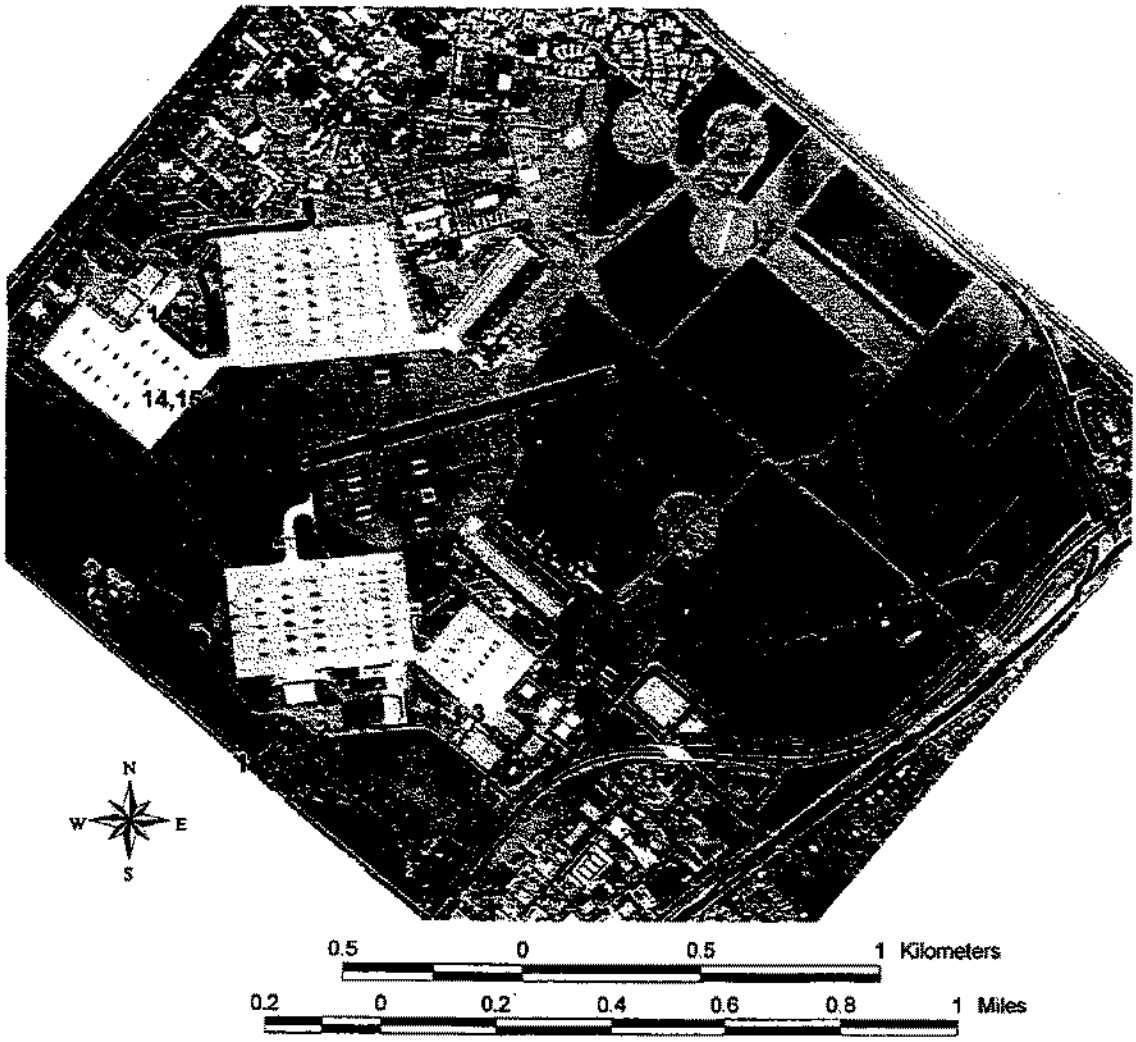
Map 7 shows the locations visited during field surveys, with the names of some of the sites referred to in the text, and a description of the site. Table 3 shows the summary of jurisdictional delineation observations on MCAS Tustin.

Table 3. Summary of jurisdictional delineation observations on MCAS Tustin.

Site No.	Description	Vegetation Criterion	Hydrology Criterion	Soils Criterion	Jurisdictional Wetland?	Jurisdictional Waters?	Rationale
1	Vegetated ditch	Yes	Yes	Yes	Yes	No	Excavated in upland.
2	Seasonal ponding	Yes	Yes	No	No	No	No hydric soils.
3	Seasonal ponding	Yes	Yes	Yes	No	No	Isolated, without vernal pool indicators, no migratory bird connection.
4	"Arm" of San Joaquin Channel	Yes	Yes	Yes	Yes	No	Excavated in upland.
5	San Joaquin Channel	Yes	Yes	Yes	Yes	No	Excavated in upland.
6	San Joaquin Channel	Yes	Yes	Yes	Yes	No	Excavated in upland.
7	San Joaquin Channel	Yes	Yes	Yes	Yes	No	Excavated in upland.
8	Isolated low depressions	No	Yes	No	No	No	Does not meet all 3 criteria, based on upland annual dominants.
9	Maintained drainage ditches associated with agricultural fields	No	Yes	No	No	No	Excluded under both Clean Water Act Section 404 and Food Security Act.
10	Drainage ditch connected hydrologically to Peters Canyon Channel	Yes	Yes	Yes	No (See rationale)	No	Ditch meets wetland criteria in deepest portions.
11	Vicinity of Santa Ana-Santa Fe Channel	No	No	No	No (See rationale)	No	Possible former wetland falls under definition of "prior converted cropland." Channel itself is Waters of the U.S.
12	Vegetated agricultural ditch	Yes	Yes	Yes	Yes	No	Since ditch has agricultural fields on both sides, falls under NRCS, but still requires a permit from ACOE for modification.
13	Rock-lined channel	No	Yes	Yes	No	Yes	Wetland elements will re-appear in channel if not maintained
14	Concrete-lined drainage ditch	No	Yes	Yes	No	Yes	May convert to wetland if not maintained.
15	Mowed drainage ditch	No	Yes	Yes	No	Yes	No hydric vegetation

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Tustin Marine Corps Air Station
Wetland Observations



1,4,5,6,7,10 - Upland drainage ditches, connected to Peters Canyon Channel, supporting hydric vegetation, soils and hydrology, non-jurisdictional (approx 4.5 acres)

2,3,8 - Isolated seasonal pools, non-jurisdictional

9 - Unvegetated irrigation and drainage ditches, non-jurisdictional

11 - Possible prior converted cropland, non-jurisditctional. Rock-lined ditch is Waters of the U.S.

12 - Vegetated agricultural ditch, jurisdictional wetland (NRCS).

13 - Rock-lined channel, Waters of the U.S., with wetland elements if not maintained.

14 - Concrete-lined drainage ditch, Waters of the U.S. May convert to wetland if not maintained.

15 - Mowed drainage ditch without hydric vegetation, Waters of the U.S.

Map 7. Wetland sampling points, other observation points, and jurisdictional status.

Isolated Seasonal Pools (Sites 2, 3, 8)

Poorly drained and sometimes compacted soils around MCAS will hold surface water for some time after rains. Specific durations of ponding are unknown. These sites are all highly disturbed, both by prior agricultural production and by current vehicle traffic and blading. All of them were historically drained to lower the water table so that crops could be supported. The vegetation is primarily exotic annual forbs, with some natives. Mottling sometimes occurs in the soil A horizon, but this is typical of the soil profile due to a high water table prior to construction of tile drains and ditches. While the vegetation, hydrology and soils meet the three-parameter wetland definition, these are small pools that support surface water for relatively short duration (judging by their small size and shallow depth, isolated from wetlands that support migratory birds, and contain no plants that could be considered a vernal pool "indicator" species. Therefore, they are excluded from jurisdictional status.

Vegetated Upland Drainage Ditches, Connected to Peters Canyon Channel (Sites 1, 4, 5, 6, 7, 10)

MCAS contains long drainage ditches on its periphery and internal areas. They drain into Peters Canyon Channel, which is a streambed that has been straigbtened and confined for flood control purposes. This streambed meets the criteria for Waters of the U.S., and vegetated portions are jurisdictional wetlands (Tierra Madre Consultants, Inc. 1994). These upland drainage ditches meet the three-parameter criteria for a wetland in all cases observed. While they were constructed in npland areas (previous to passage of the Clean Water Act), and upland drainage ditches are specifically excluded from Section 404 jurisdiction, the Los Angeles District of USACOE interprets this exclusion to apply only to drainage ditches that are actively maintained (V. White, USACOE, pers. comm., field visit on June 9, 1999 and subsequent e-mail).

Unvegetated Agricultural Drainage Ditches (Site 9)

The ditches associated with agricultural fields for drainage or tail-water recovery are regularly maintained and cleared of vegetation. They are specifically excluded from Section 404 jurisdiction.

Possible Prior Converted Cropland (Site 11)

The only area on the property that may have previously been a wetland is on the northeast corner of the property. The channel that crosses the property here is called the Santa Ana-Santa Fe Channel, draining into the Peters Canyon Channel shortly after it enters onto MCAS property. This channel provides drainage and flood control to the entire watershed area above it (now mostly urbanized), overflowing onto the agricultural fields in extreme flood years (Osumi, pers. comm.). It was drag-lined and rock-jettied by the County of Orange about three years ago, so supports little vegetation (Osumi, pers. comm.). Orange County owns the right-of-way for the channel. While this area of MCAS property is not mapped with hydric soils (See Map 2), it may actually have contained them based on the 1928 and 1938 aerial photos, in which a drainage is evident. However, the area would not qualify as a wetland due to its definition as "prior converted cropland." In 1993, the USACOE issued a final regulation excluding "prior converted cropland" from Section 404 jurisdiction (58 CFR 45008). Such land is generally defined, consistent with NRCS' "Swampbuster" program under the Food Security Act, as wetlands that before December 23, 1985 were cropped and manipulated to remove excess water such that inundation lasts no more than 14 consecutive days during the growing season (Cylinder *et al.* 1995). These prior converted croplands essentially no longer exhibit wetland characteristics due to draining. The Santa Ana-Santa Fe Channel is considered Waters of the U.S.

Vegetated Agricultural Drainage Ditches (Site 12)

Site 12 on Map 7 is a vegetated agricultural drainage ditch. With cropland on both sides, this is the only wetland on the property that falls under the jurisdiction of the San Jacinto Office of the NRCS. It meets the three-parameter criteria for a wetland.

Rock-lined or Concrete Channels (Site 13)

Peters Canyon, Santa Ana-Santa Fe, and the channel along the southwest perimeter are all Waters of the U.S., but may include wetland elements as vegetation becomes established between scheduled maintenance activities.

Concrete-lined Ditches (Site 14)

Sites labeled 14 on Map 7 are concrete-lined ditches that are considered Waters of the U.S. because they support mostly upland vegetation. If left unmaintained they may convert to wetlands.

Mowed Ditches (Site 15)

Sites labeled 15 on Map 7 are mowed drainage ditches that are considered Waters of the U.S. They may also convert to wetlands if left unmaintained.

The results of this field survey are preliminary and will require verification by USACOE or NRCS for questions on site-specific impacts. Policies in these "gray" areas of wetland regulation can vary from county to county, and the rules for interpretation vary slightly between USACOE and NRCS. Any manipulation of the Wetlands or Waters of the U.S. requires a USACOE Section 404 permit. Representative areas of wetlands that occur on the Station are covered, but not all drainages were walked. Sufficient information is laid out so that if impacts to wetlands need to be addressed, these may be recognized in the field by their plant community, then checked to confirm jurisdictional status.

Table 4 is a summary of Wetland and Waters of the U.S. acreages on the Station based on aerial photos. In the aerial photos, portions of Peters Canyon and other channels support wetland vegetation, but these have since been cleared.

Table 4. Wetlands and Waters of the U.S. acreage summary for MCAS Tustin, based on aerial photo interpretation.

Description	Acres
Peters Canyon Channel	
Wetlands	3.4[1]
Waters of the U.S.	16.3
All other ditches and channels	
Wetlands	3.6
Waters of the U.S.	15.4
Totals	
Wetlands	7
Waters of the U.S.	31.7

[1] Wetland (vegetated) portions visible in aerial photos have since been cleared.

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---------. Flight Number C-5029, Frame Number 86 and 88, Approximate Scale 1:2640, Date of Flight 3-4-38.

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Other Contacts

Phone contacts with USACOE (May 11, 1999): Vicki White, Spencer McNeal, Mark Sudol, Mark Durham.

Robert Hewitt, San Jacinto Resource Conservation District (May 11, 1999 and August 17, 1999).

Jason Jackson, San Diego Resource Conservation District (May 11, 1999).

ROUTINE WETLAND DETERMINATION
(1987 USACOE Wetlands Delineation Manual)

Project/Site: *Adjacent to south blimp hangar*			**Date:** *February 2, 1999*
Applicant/Owner: *MCAS Tustin / Southwest Division*			**County:** *Orange*
Investigator: *Liz Kellogg*			**State:** *CA*
Do Normal Circumstances exist on the site?	Yes *X*	No__	**Community ID:** *emergent herbaceous perennials*
Is the site significantly disturbed (Atypical Situation)?*	Yes__	No *X*	**Transect ID:** *walking*
Is the area a potential Problem Area?	Yes__	No *X*	**Plot ID:** *1*
**Artificial drainage did not require ACOE authorization, nor does routine ditch maintenance.*			

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia (90 %)*	*H/S*	*OBL*	9.		
2. *Cynodon dactylon*	*H*	*FAC*	10.		
3. *Carex sp.*	*H*	*FACW+*	11.		
4. *Baccharis salicifolia*	*S*	*FAC*	12.		
5. *Tamarix ramossissima*	*S*	*FAC*	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): *More than 50 % of the dominant vegetation is at least FAC*

Remarks:

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- *X* Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water: *3* (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- *X* Inundated
- *X* Saturated in Upper 12 Inches
- __Water Marks
- __Drift Lines
- __Sediment Deposits
- __Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 in.
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: *Drainage ditch appears to secondary ditch that connects to Peters Canyon Channel that supports migratory birds.*

SOILS

Map Unit Name (Series and Phase): *Silty clay loam, drained*				Drainage Class:	
Taxonomy (Subgroup): *f-1,m,t, Aquic Haploxeroll*				Field Observations Confirm Mapped Type? Yes X No__	
Profile Description					
Depth (inches)	**Horizon**	**Matrix Color (Munsell Moist)**	**Mottle Colors (Munsell Moist)**	**Mottle Abundance/Contrast**	**Texture, Concretions, Structure, etc.**

Hydric Soil Indicators:

__Histosol
__Histic Epipedon
__Sulfidic Odor
X Aquic Moisture Regime
__Reducing Conditions
__Gleyed or Low-Chroma Colors
__Concretions
__High Organic Content in Surface Layer in Sandy Soils
__Organic Streaking in Sandy Soils
__Listed on Local Hydric Soils List
__Listed on National Hydric Soils List
__Other (Explain in Remarks)

Remarks: *Bottom of ditch inundated. Not on hydric soils list.*

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No__			
Wetland Hydrology Present?	Yes X	No__	Is this Sampling Point Within a		
Hydric Soils Present?	Yes X	No__	Wetland?	Yes X	No__

Remarks: ***Drainage appears connected to Peters Canyon Channel via a secondary ditch. Peters Canyon Channel is the channelized streambed to the east that supports migratory birds.*** *Ditch was excavated in uplands with a high water table prior to Clean Water Act. The vegetation is currently most likely sustained by both overland and urban runoff.*



Site 1



Site 1

ROUTINE WETLAND DETERMINATION
(1987 USACOE Wetlands Delineation Manual)

Project/Site: *"Seasonal wetland" by Army Reserve building*			**Date:** *February 2, 1999*
Applicant/Owner: *MCAS Tustin / Southwest Division*			**County:** *Orange*
Investigator: *Liz Kellogg*			**State:** *CA*
Do Normal Circumstances exist on the site?	Yes *X*	No__	**Community ID:** *emergent herbaceous annual*
Is the site significantly disturbed (Atypical Situation)?*	Yes__	No *X*	**Transect ID:** *walking*
Is the area a potential Problem Area?	Yes__	No *X*	**Plot ID:** *2*
**Problem area because of seasonal drying.*			

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Lolium multiflorum (95 %)*	*H*	*FACW*	9.		
2. *Lactuca serriola*	*H*	*FAC*	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): *100 %*

Remarks:

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- *X* Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water:	0-3 (in.)
Depth to Free Water in Pit:	_____(in.)
Depth to Saturated Soil:	_____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- *X* Inundated
- __Saturated in Upper 12 Inches
- __Water Marks
- __Drift Lines
- __Sediment Deposits
- __Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 in.
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks:
Tire ruts and compaction result in poorly drained "puddle." Drainage is unconnected hydrologically.

SOILS

Map Unit Name (Series and Phase): *140 Chino silty clay loam*				Drainage Class:	
Taxonomy (Subgroup): *t-1,m,t, Aquic Haploxeroll*				Field Observations Confirm Mapped Type? Yes X No__	
Profile Description					
Depth (inches)	**Horizon**	**Matrix Color (Munsell Moist)**	**Mottle Colors (Munsell Moist)**	**Mottle Abundance/Contrast**	**Texture, Concretions, Structure, etc.**
0-6	*A*	*10YR3/3*	*none*		

Hydric Soil Indicators:

__Histosol
__Histic Epipedon
__Sulfidic Odor
X Aquic Moisture Regime
__Reducing Conditions
__Gleyed or Low-Chroma Colors
__Concretions
__High Organic Content in Surface Layer in Sandy Soils
__Organic Streaking in Sandy Soils
__Listed on Local Hydric Soils List
__Listed on National Hydric Soils List
__Other (Explain in Remarks)

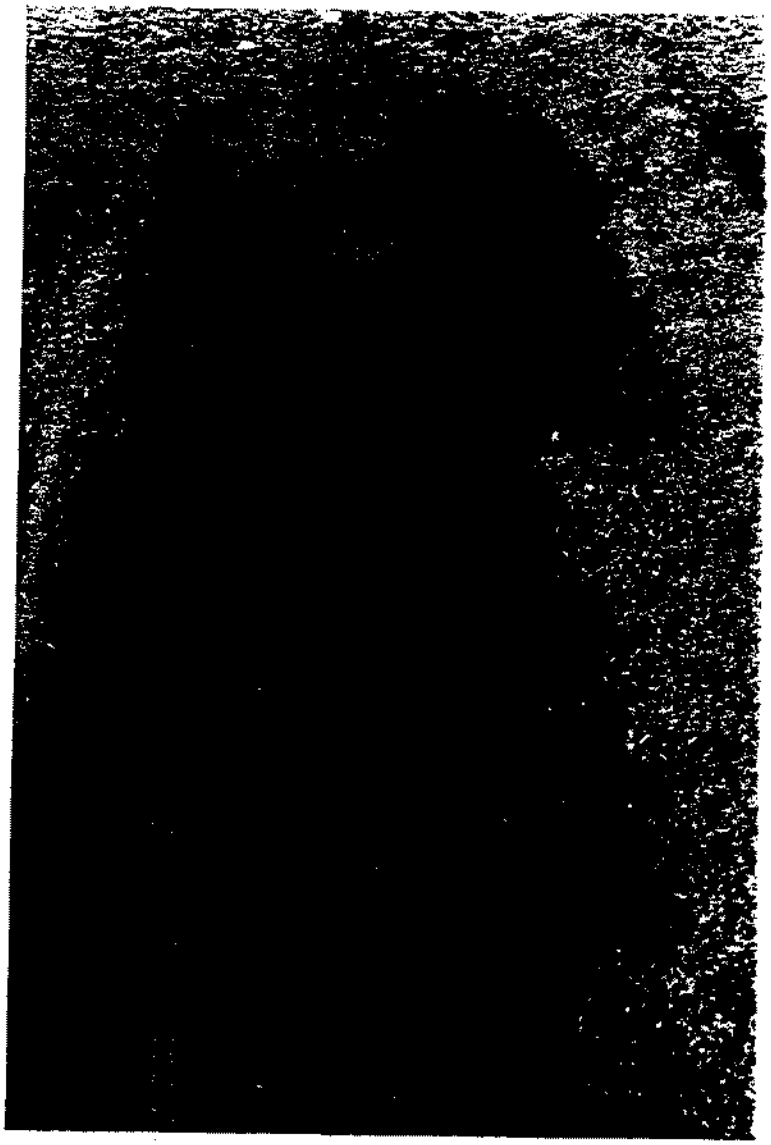
Remarks: *Only root channels are oxidized. Soil not listed on hydric soils list. Altered drainage occurred prior to 1928 aerial photos.*

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No__			
Wetland Hydrology Present?	Yes X	No__	Is this Sampling Point Within a Wetland?	Yes__	No X
Hydric Soils Present?	Yes__	No X			

Remarks:

Soils are not hydric.



Site 2

ROUTINE WETLAND DETERMINATION
(1987 USACOE Wetlands Delineation Manual)

Project/Site: "Seasonal Wetland" near parking lot **Applicant/Owner:** *MCAS Tustin / Southwest Division* **Investigator:** *Liz Kellogg*	**Date:** *February 2, 1999* **County:** *Orange* **State:** *CA*
Do Normal Circumstances exist on the site? Yes X No__ **Is the site significantly disturbed (Atypical Situation)?*** Yes__ No X **Is the area a potential Problem Area?** Yes X No__ **Artificial drainage did not require ACOE authorization, nor does routine ditch maintenance. Problem area because of seasonal drying.*	**Community ID:** *emergent herbaceous annual* **Transect ID:** *walking* **Plot ID:** *3*

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Kickxia elatine*	*H*	*NI*	9.		
2. *Cotula coronopifolia*	*H*	*FACW+*	10.		
3. *Chenopodium sp.*	*H*	*FAC*	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): *100 %*

Remarks:

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- __Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water: __2__ (in.)
Depth to Free Water in Pit: _____ (in.)
Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- __Saturated in Upper 12 Inches
- __Water Marks
- __Drift Lines
- __Sediment Deposits
- __Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 in.
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: ***Isolated, highly disturbed, compacted depression with poor drainage.***

SOILS

Map Unit Name (Series and Phase): *140 Chino silty clay loam*				Drainage Class:	
Taxonomy (Subgroup): *I-1,m,t, Aquic Haploxeroll*				Field Observations Confirm Mapped Type? Yes X No__	
Profile Description					
Depth (inches)	**Horizon**	**Matrix Color (Munsell Moist)**	**Mottle Colors (Munsell Moist)**	**Mottle Abundance/Contrast**	**Texture, Concretions, Structure, etc.**
0-8	*A*	*10YR/2*	*5YR/5*	*few, strong*	

Hydric Soil Indicators:

__Histosol
__Histic Epipedon
__Sulfidic Odor
X Aquic Moisture Regime
__Reducing Conditions
__Gleyed or Low-Chroma Colors
__Concretions
__High Organic Content in Surface Layer in Sandy Soils
__Organic Streaking in Sandy Soils
__Listed on Local Hydric Soils List
__Listed on National Hydric Soils List
__Other (Explain in Remarks)

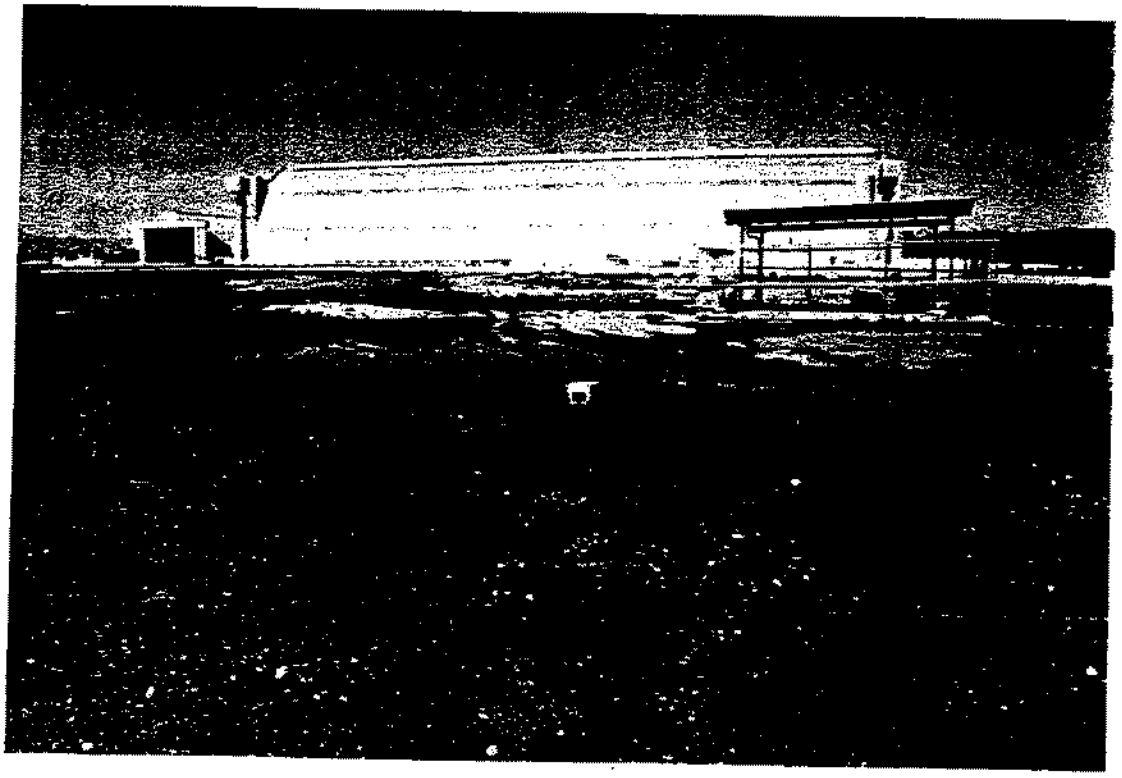
Remarks: *Drainage altered, pre-dating 1928 aerial photos, due to high water table.*

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No__			
Wetland Hydrology Present?	Yes X	No__	Is this Sampling Point Within a Wetland?	Yes__	No X
Hydric Soils Present?	Yes X	No__			

Remarks:

Isolated seasonal ponding with wetland indicator species and hydric indicators in soil, but no vernal pool "indicator" species.



Site 3

ROUTINE WETLAND DETERMINATION
(1987 USACOE Wetlands Delineation Manual)

Project/Site: *south branch San Joaquin Channel*			**Date:** *February 2, 1999*
Applicant/Owner: *MCAS Tustin / Southwest Division*			**County:** *Orange*
Investigator: *Liz Kellogg*			**State:** *CA*
Do Normal Circumstances exist on the site?	Yes X	No__	**Community ID:** *emergent herbaceous perennials*
Is the site significantly disturbed (Atypical Situation)?*	Yes__	No X	**Transect ID:** *walking*
Is the area a potential Problem Area?	Yes__	No X	**Plot ID:** *4*
**Artificial drainage ditch did not require ACOE authorization, nor does routine ditch maintenance.*			

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia (90 %)*	*H/S*	*OBL*	9.		
2. *Baccharis salicifolia*	*S*	*FACW*	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): *100 %*

Remarks: ***Hydrophytic vegetation in channel bottom only.***

HYDROLOGY

__Recorded Data (Describe in Remarks):
__Stream, Lake, or Tide Gauge
X Aerial Photographs
__Other
__No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: _____(in.)
Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
__Water Marks
__Drift Lines
__Sediment Deposits
__Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
__Oxidized Root Channels in Upper 12 in.
__Water-Stained Leaves
__Local Soil Survey Data
__FAC-Neutral Test
__Other (Explain in Remarks)

Remarks: ***Drainage channel connects to Peters Canyon Channel, a modified stream channel that supports migratory bird populations.***

SOILS

Map Unit Name (Series and Phase): *140 Chino silty clay loam*	Drainage Class:
Taxonomy (Subgroup): *f-1,m,t, Aquic Haploxeroll*	Field Observations Confirm Mapped Type? Yes X No__

Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		*10YR3/2*	*none*		

Hydric Soil Indicators:

__Histosol
__Histic Epipedon
__Sulfidic Odor
X Aquic Moisture Regime
X Reducing Conditions
__Gleyed or Low-Chroma Colors
__Concretions
__High Organic Content in Surface Layer in Sandy Soils
__Organic Streaking in Sandy Soils
__Listed on Local Hydric Soils List
__Listed on National Hydric Soils List
__Other (Explain in Remarks)

Remarks: *Not on hydric soils list. Soils may not have developed color descriptive of current regime because this is an artificially-cut channel intended to lower the water table so the land could be farmed.*

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No__			
Wetland Hydrology Present?	Yes X	No__	Is this Sampling Point Within a Wetland?	Yes X	No__
Hydric Soils Present?	Yes X	No__			

Remarks:
Drainage is connected to Peters Canyon Channel which supports migratory birds. Ditch was excavated in uplands with a high water table prior to Clean Water Act. The vegetation is currently most likely sustained by both overland and urban runoff.



Site 4

ROUTINE WETLAND DETERMINATION
(1987 USACOE Wetlands Delineation Manual)

Project/Site: *San Joaquin channel*			**Date:** *February 2, 1999*
Applicant/Owner: *MCAS Tustin / Southwest Division*			**County:** *Orange*
Investigator: *Liz Kellogg*			**State:** *CA*
Do Normal Circumstances exist on the site?	Yes X	No__	**Community ID:** *emergent herbaceous perennials*
Is the site significantly disturbed (Atypical Situation)?*	Yes__	No X	**Transect ID:** *walking*
Is the area a potential Problem Area?	Yes__	No X	**Plot ID:** *5*
**Artificial drainage did not require ACOE authorization, nor does routine ditch maintenance.*			

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia (>90 %)*	*H*	*OBL*	9.		
2. *Scirpus sp.*	*H*	*OBL*	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): *100 %*

Remarks:

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- X Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- __Water Marks
- __Drift Lines
- __Sediment Deposits
- __Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 in.
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: ***Drainage channel connects to Peters Canyon Channel, a modified stream channel that supports migratory bird populations.***

SOILS

Map Unit Name (Series and Phase): *140 Chino silty clay loam, drained*	Drainage Class:
Taxonomy (Subgroup): *f-1,m,t, Aquic Haploxeroll*	Field Observations Confirm Mapped Type? Yes__ No_X_

Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8	*A*	*10YR3/2*	*10YR3/1*	*few/large*	*clay*

Hydric Soil Indicators:

__Histosol
__Histic Epipedon
__Sulfidic Odor
_X_Aquic Moisture Regime
_X_Reducing Conditions
__Gleyed or Low-Chroma Colors
__Concretions
__High Organic Content in Surface Layer in Sandy Soils
__Organic Streaking in Sandy Soils
__Listed on Local Hydric Soils List
__Listed on National Hydric Soils List
__Other (Explain in Remarks)

Remarks: *Soil may be an inclusion of Type 183, Omni clay, poorly drained, or accumulated clay deposits due to sedimentation.*

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes_X_	No__			
Wetland Hydrology Present?	Yes_X_	No__	Is this Sampling Point Within a Wetland?	Yes_X_	No__
Hydric Soils Present?	Yes_X_	No__			

Remarks:

Drainage is connected to Peters Canyon Channel which supports migratory birds. Ditch was excavated in uplands with a high water table prior to Clean Water Act. The vegetation is currently most likely sustained by both overland and urban runoff.



Site 5

ROUTINE WETLAND DETERMINATION
(1987 USACOE Wetlands Delineation Manual)

Project/Site: *San Joaquin Channel "arm"*	**Date:** *February 2, 1999*
Applicant/Owner: *MCAS Tustin / Southwest Division*	**County:** *Orange*
Investigator: *Liz Kellogg*	**State:** *CA*
Do Normal Circumstances exist on the site? Yes X No__	**Community ID:** *emergent herbaceous perennials*
Is the site significantly disturbed (Atypical Situation)?* Yes__ No X	**Transect ID:** *walking*
Is the area a potential Problem Area? Yes__ No X	**Plot ID:** *6*
**Artificial drainage did not require ACOE authorization, nor does routine ditch maintenance.*	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Washingtonia filifera*	*T*	*FACW*	9.		
2. *Salix goodinggii*	*T*	*FACW*	10.		
3. *Typha latifolia*	*H*	*OBL*	11.		
4. *Baccharis salicifolia*	*S*	*FACW*	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): *100 %*

Remarks:

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- __Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __Inundated
- __Saturated in Upper 12 Inches
- X Water Marks
- __Drift Lines
- __Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 in.
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: ***Drainage channel connects to Peters Canyon Channel, a modified stream channel that supports migratory bird populations.***

SOILS

Map Unit Name (Series and Phase): *140 Chino silty clay loam, drained*	**Drainage Class:** hello
Taxonomy (Subgroup): *f-1,m,t, Aquic Haploxeroll*	**Field Observations** **Confirm Mapped Type?** Yes X No__

Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	*A*	*10YR3/2*			
3-10	*B*	*2.5Y1*			

Hydric Soil Indicators:

__Histosol
__Histic Epipedon
__Sulfidic Odor
__Aquic Moisture Regime
__Reducing Conditions
__Gleyed or Low-Chroma Colors
__Concretions
__High Organic Content in Surface Layer in Sandy Soils
__Organic Streaking in Sandy Soils
__Listed on Local Hydric Soils List
__Listed on National Hydric Soils List
__Other (Explain in Remarks)

Remarks: *Not on hydric soils list. Soils may not have developed color descriptive of current regime because this is an artificially-cut channel intended to lower the water table so the land could be farmed.*

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No__	Is this Sampling Point Within a Wetland?	Yes X	No__
Wetland Hydrology Present?	Yes X	No__			
Hydric Soils Present?	Yes X	No__			

Remarks:

Drainage is connected to Peters Canyon Channel which supports migratory birds. Ditch was excavated in uplands with a high water table prior to Clean Water Act. The vegetation is currently most likely sustained by both overland and urban runoff.



Site 6

ROUTINE WETLAND DETERMINATION
(1987 USACOE Wetlands Delineation Manual)

Project/Site: San Joaquin Channel "arm"			**Date:** *February 2, 1999*
Applicant/Owner: *MCAS Tustin / Southwest Division*			**County:** *Orange*
Investigator: *Liz Kellogg*			**State:** *CA*
Do Normal Circumstances exist on the site?	Yes *X*	No__	**Community ID:** *emergent herbaceous perennials*
Is the site significantly disturbed (Atypical Situation)?*	Yes__	No *X*	**Transect ID:** *walking*
Is the area a potential Problem Area?	Yes__	No *X*	**Plot ID:** *7*
**Artificial drainage did not require ACOE authorization, nor does routine ditch maintenance.*			

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Typha latifolia*	*H*	*OBL*	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): *100 %*

Remarks:

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- *X* Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __Inundated
- __Saturated in Upper 12 Inches
- *X* Water Marks
- __Drift Lines
- __Sediment Deposits
- *X* Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 in.
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: ***Drainage channel connects to Peters Canyon Channel, a modified stream channel that supports migratory bird populations.***

SOILS

Map Unit Name (Series and Phase): *140 Chino silty clay loam, drained*				Drainage Class: hello	
Taxonomy (Subgroup): *f-1,m,t, Aquic Haploxeroll*				Field Observations Confirm Mapped Type? Yes__ No_X_	
Profile Description					
Depth (inches)	**Horizon**	**Matrix Color (Munsell Moist)**	**Mottle Colors (Munsell Moist)**	**Mottle Abundance/Contrast**	**Texture, Concretions, Structure, etc.**
0-10	*A*	*10YR3/2*	*10YR4/4 Gley 3/10B*	*strong, few*	*clay loam?*

Hydric Soil Indicators:

__Histosol
__Histic Epipedon
__Sulfidic Odor
X Aquic Moisture Regime
__Reducing Conditions
X Gleyed or Low-Chroma Colors
__Concretions
__High Organic Content in Surface Layer in Sandy Soils
__Organic Streaking in Sandy Soils
__Listed on Local Hydric Soils List
__Listed on National Hydric Soils List
__Other (Explain in Remarks)

Remarks: *Not on hydric soils list. Clay accumulation much higher than typical of soil type.*

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No__			
Wetland Hydrology Present?	Yes X	No__	Is this Sampling Point Within a Wetland?	Yes X	No__
Hydric Soils Present?	Yes X	No__			

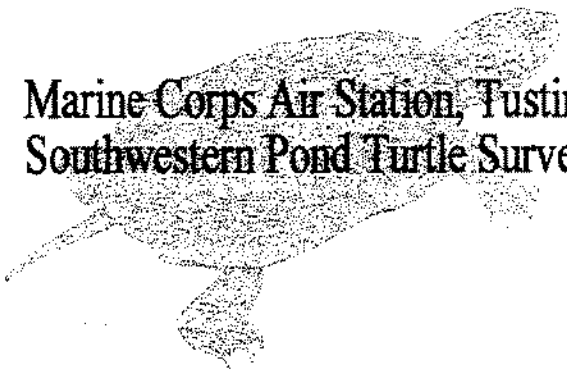
Remarks:

Drainage is connected to Peters Canyon Channel which supports migratory birds.



Site 7

Marine Corps Air Station, Tustin
Southwestern Pond Turtle Survey



Prepared For:

Cotton/Beland/Associates
747 East Green, Suite 300
Pasadena, CA 91101-2119

Prepared By:

Tierra Madre Consultants, Inc.
1159 Iowa Avenue, Suite "D"
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Contacts: Michael D. Wilcox
Lawrence F. LaPre

June 1999

RECEIVED
JUN 23 1999
COTTON/BELAND

Illustration from Stebbins, R.L. 1956 Reptiles and Amphibians of Western North America

MARINE CORPS AIR STATION, TUSTIN

Summary Report on Focused Surveys for the
Southwestern Pond Turtle (*Clemmys marmorata pallida*)

Introduction

This report summarizes the findings of a series of focused surveys for the Southwestern Pond Turtle (*Clemmys marmorata pallida*; SWPT) conducted by Tierra Madre Consultants, Inc. (TMC) on the Marine Corps Air Station (MCAS) in Tustin, Orange County, California (See Map 1). In addition to the field surveys, TMC also reviewed pertinent literature and contacted specialists and agency biologists for information regarding potential viable SWPT populations and localities located in the general vicinity of the project site. The focused surveys followed general biological assessments of the base.

The City of Tustin is preparing an Environmental Impact Statement (EIS) / Environmental Impact Report (EIR) for a reuse plan for MCAS Tustin. Cotton/Beland/Associates, Inc. (CBA) prepared the Environmental Assessment/Initial Study for the Specific Plan/Reuse Plan and Base Disposal for MCAS, Tustin (June 1994) and procured the services of TMC to perform biological studies for the EIS/EIR. CBA and the City of Tustin requested the preparation of this document, which compiles the results of all TMC biological studies into one combined report on the pond turtle.

In the baseline biological study, at least one SWPT was observed in a drainage ditch commonly referred to as the San Joaquin Channel. TMC concluded that under California Environmental Quality Act (CEQA) guidelines, impacts to the SWPT were significant and that appropriate mitigation should be required. Recommended mitigation measures included live trapping and relocation of individual turtle(s) to a suitable viable SWPT population located within the same watershed, preferably the closest in relation to the project site.

Methods

Literature review

In March 1993, TMC conducted a biological assessment of MCAS for CBA. The literature review included location records for protected species in the California Natural Diversity Data Base (CNDDB), and the *Inventory of Rare and Endangered Vascular Plants of California* (Smith and Berg 1988), as well as unpublished biological reports on nearby sites. We also reviewed the *Soil Survey of Orange County and western part of Riverside County* (Wachtell 1978). Additional work between 1993 and 1999 involved obtaining updated versions of these sources, including the California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (Fourth edition; Skinner and Pavlik 1994) and the records through 1998 from the CNDDB.

Persons contacted

TMC also contacted specialists working with the Southwestern pond turtle regarding the status of known localities and populations in Orange County. These contacts included Dr. Robert Fisher of San Diego State University and Mr. Robert Goodman with Cal State University Pomona. Betsy Bolster, Ray Ally, and Alex Vejar with the California Department of Fish and Game were contacted for information pertinent to the base reuse plan and potential mitigation measures for the SWPT. Art Homrighausen at LSA Associates, who removed pond turtles from the same drainage for a road improvement project, provided information on the disposition of those turtles.

Mr. Leon Bucago, Environmental Services Officer for MCAS Tustin, was contacted during field visits in 1998 for information on his sigbtings of pond turtles in the San Joaquin channel.

Field surveys

Field surveys were performed on 22 January 1993; 5, 8, 9, and 10 March 1993 by TMC biologists Michael A. Patten, Scott White, and Stephen J. Myers for the general biological assessment. Field surveys for vernal pool obligate plant species and evidence of peregrine falcon nesting activity were conducted on 28 April and 30 June 1993 by TMC biologists Scott White, John R. Easton, and Kent R. Beaman. Wetland and streambed studies were performed on 30 March and 7 July 1994. On 9 September 1998 and again on 16 October 1998, the site was surveyed by TMC biologist Michael D. Wilcox and field assistant Rick L. Norton. All potentially suitable habitat along the San Joaquin Channel was visually inspected for turtles between 8:00 a.m. and 4:00 p.m. These surveys totaled 11 days over a six year period.

Previous reports

The following biological reports have been prepared for the MCAS Tustin EIR/EIR:

March 1993 - A general biological survey of the base.

July 1993 - A focused study addressing a potential vernal pool site and the potential for nesting of the endangered peregrine falcon was prepared.

July 1994 - A report delineating the wetlands, streambeds, and jurisdictional waters of the United States.

March 1995 - A report on the biological impacts and mitigation for MCAS, Tustin.

November 1998 - Letter to CBA describing the findings of the pond turtle studies and recommended mitigation measures.

February 1999 -An updated letter report to CBA on the turtle surveys incorporating new information regarding potential mitigation locations.

April 1999 - Letter to CBA addressing specific questions from the Department of the Navy.

Results

The literature review identified several CNDDB records of the SWPT from the the vicinity of the project site. The Soil Conservation Service (1992) observed the SWPT on MCAS, Tustin. Additionally, LSA Associates captured and removed 26 SWPTs during the realignment of Jamboree Road project in 1991 (R. Fisher, Art Homrighausen, pers. com.). These turtles were placed in the care of Dr. Bayard Brattstom with Cal State University, Fullerton.

During the March 1993 study, a turtle was observed by TMC biologists in the San Joaquin Channel, however, the identity of the turtle could not be conclusively determined. The follow-up survey in July 1993 detected one SWPT in the on-site portions of the San Joaquin Channel. One SWPT was observed on 9 September 1998 and at least one (possibly two) SWPT(s) was/were observed on 16 October 1998. These observations consisted of two separate sightings of average sized (approximately 4 inches carapace length) adults. The first (9 September) was made on the earthen banks of a pool near a bridge crossing over the channel, while the second (16 October) may have consisted of two individuals basking together on the muddy banks of a small pool located near the southern end of the on-site reach of the San Joaquin Channel. Both sightings were brief, with the turtles slipping into the water within a second after detection.

Mr. Goodman and Mr. Fisher were involved in visual surveys conducted along the San Joaquin channel in the summer months of 1997. Two SWPTs were observed on-site during that study. Sightings of one or more turtles were also reported in 1998 by Mr. Leon Bucago, Environmental Services Officer for MCAS Tustin.

The March 1995 report that identified biological impacts and mitigation recommended that the San Joaquin Channel be entirely avoided by the proposed project. Avoidance would require the building and maintenance of a fence to limit human disturbance to the area. If impacts could not be avoided, TMC recommended that the turtles be captured and relocated to a suitable mitigation site.

This recommendation was researched further in 1998 and 1999. The final recommendation was that if the pond turtles were determined to be isolated from other populations and could not reproduce on the site, they should be captured and relocated. If the on-site SWPT(s) were determined to be part of a larger breeding population, then impacts to the habitat itself would need to be fully mitigated or avoided altogether. TMC concluded that although the SWPT has been reported to nest in agricultural fields, the MCAS site was unlikely to support a breeding population and therefore recommended the live trapping/relocation alternative.

Although they are at least 19 locations in Orange County currently containing relatively small numbers of approximately 6 to 36 SWPTs, these locations are not viable for the long-term survival of the turtle. All of these locations are increasingly threatened by encroaching development and other related factors (i.e., invasion of non-native species). None of these populations are expected to persist into foreseeable future. MCAS Tustin is included as one of these populations.

Research into the availability of an off-site mitigation site to release the turtles after capture ended with no available mitigation/release sites identified. However, one potential mitigation site located in upper Shady Canyon within the Orange County Nature Preserve could support pond turtles with some restoration and habitat enhancement. This will require discussions and negotiation with The Irvine Company, owner of the site, and the California Department of Fish and Game. The CDFG representative is Alex Vejar from the San Diego office of CDFG.

Conclusions

The SWPTs should be removed from MCAS Tustin and relocated to an off-site location that is or will be sustainable and maintained in perpetuity. The location of a suitable off-site mitigation location suitable for SWPT habitation needs to be determined. Two potential sites exist that may be available for this and other SWPT mitigation occurring in the area. These include Upper Shady Canyon located in the Orange County Nature Preserve. This location will likely require some habitat enhancement/restoration in order to make it suitable for SWPT habitation. This land is currently owned by the Irvine Company who are attempting to transfer ownership to the City of Irvine. The other potential location is the San Joaquin Marsh, which is managed by the University of California, Irvine, the Irvine Ranch, and the Orange County Water District. The Irvine Company may also be seeking suitable mitigation areas for SWPTs on one or more of their projects and may be interested in combining efforts with the City of Tustin on this matter.

The turtles removed from the former San Joaquin stream channel were marked and temporarily released into a pond (or two) in the arboretum at California State University at Fullerton. This location was/is not a mitigation site for these or any other turtles, but a temporary holding location until a suitable mitigation site can be attained. Cal State Fullerton would likely be interested in joining the City of Tustin's efforts to seek suitable mitigation bank(s) for all the turtles involved.

The turtle mitigation for the Jamboree Boulevard project was instructive in another way. Visual surveys of the San Joaquin Channel prior to construction revealed two or three SWPTs. Subsequent trapping of the SWPTs was required and performed. In addition to trapping, all suitable habitat was also systematically inspected by hand, physically searching through the mud in search of turtles. A total of 26 SWPTs were trapped or otherwise captured during that project. A similar situation could occur with the proposed relocation of turtles from MCAS; i.e. a much larger number of turtles could be present. This would be of greater benefit to the re-established population than the introduction of only one or two individuals.

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Tierra Madre Consultants. 1999. Marine Corps Air Station Tustin: Survey for the Southwestern Pond Turtle (*Clemmys marmorata pallida*). Unpub. letter dated 23 Apr 1999 prepared for Cotton/Beland/Associates.

Persons contacted

Ally, Ray, 1999. (Calif. Dept. of Fish and Game) Telephone conversation with L. LaPre.

Bolster, Betsy 1998. (Calif. Dept.of Fish and Game) Discussion with Mike Wilcox regarding agency recommended survey protocol and with Lawrence LaPre regarding mitigation measures.

Bucago, L. 1998. On-site consultation with R. Norton on 9 Sept 98.

Bucago, L. 1998. On-site consultation with M. Wilcox on 16 Oct 98.

Fisher, R. 1999. Telephone consultation with M. Wilcox on 3 Feb 99.

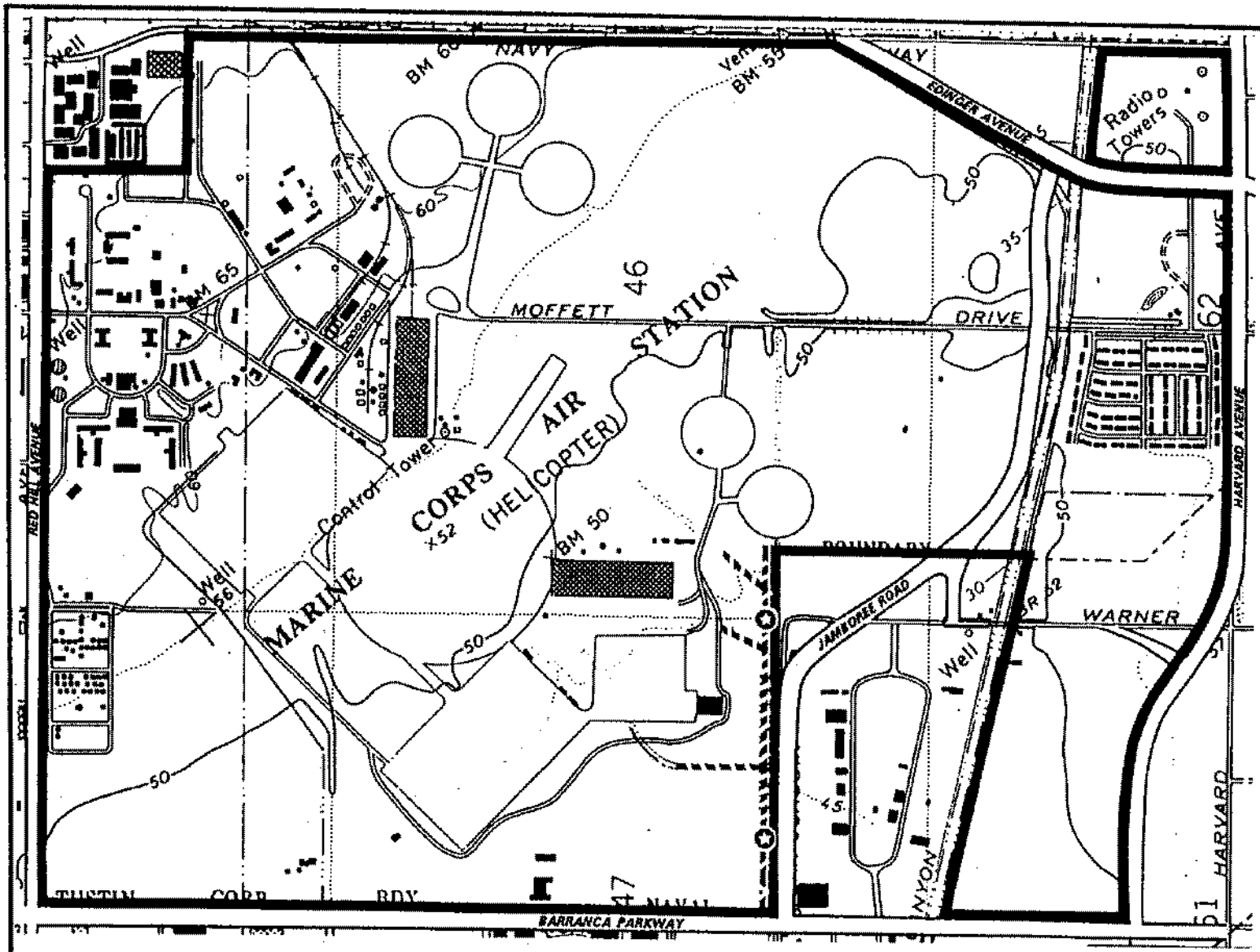
Goodman, R. 1998. Telephone consultation with M. Wilcox on 27 Nov 98.

Homrighausen, Art, 1999. (LSA Associates) Telephone consultation regarding relocation of pond turtles from San Joaquin channel.

Smith, T. 1999. (The Nature Conservancy) Telephone consultation with M. Wilcox on 21 Apr 99.

Vejar, Alex, 1999. (Calif. Dept. of Fish and Game) Telephone consultation with L. LaPre.

TMC #92-103



MAP 1. MCAS Tustin: Southwestern Pond Turtle Observations.

● Southwestern Pond Turtle(s) — Survey Area

MAP SOURCE: USGS 7.5' Tustin Quad.

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Tierra Madre Consultants

APPENDIX H
MEMORANDUM OF AGREEMENT REGARDING HISTORIC RESOURCES

Memorandum of Agreement
Among the
Department of the Navy, the
California State Historic Preservation Officer,
and the
Advisory Council on Historic Preservation
for the Disposal and Reuse of
Marine Corps Air Station, Tustin, Orange County, California

WHEREAS, the Department of the Navy (DoN), has determined that the disposal and reuse of Marine Corps Air Station Tustin (MCAS Tustin), pursuant to the Defense Base Closure and Realignment Act of 1990, will have an adverse effect upon Hangars 28 and 29 which were included on the National Register of Historic Places in 1975, and other elements that, when combined with Hangars 28 and 29, were determined eligible for inclusion in the National Register of Historic Places as part of a discontiguous historic district in 1996. The eligible elements include buildings 28A and 29A, mooring mats 1, 2, 3, 4, and 5, and the roads that connect these elements with Hangars 28 and 29. The district is depicted on Appendix A; and

WHEREAS, no archeological sites or deposits remain at MCAS Tustin, as documented in several surveys; and

WHEREAS, DoN received no expressions of interest from any of the approximately 100 Native American Tribes that were provided an opportunity to request excess federal property at MCAS Tustin in 1992 and 1993; and

WHEREAS, DoN consulted with the California State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (Act); and

WHEREAS, the City of Tustin, California (City), recognized by the Department of Defense as the local redevelopment authority (LRA) for MCAS Tustin, has developed a reuse plan for MCAS Tustin which may preserve Hangars 28 and 29 and buildings 28A and 29A, has participated in the consultation, has been invited to be a signatory to this Memorandum of Agreement (MOA), and has agreed to assume certain responsibilities and obligations under this Memorandum of Agreement; and

WHEREAS, the reuse plan for MCAS Tustin necessitates the demolition of the remainder of the historic district, which include mooring mats 1, 2, 3, 4, and 5, and the roads that connect these elements with Hangars 28 and 29; and

WHEREAS, the County of Orange (County) proposes to reuse Hangar 28 and building 28A for recreation and ancillary entertainment, retail, and special event uses as part of a regional park for which a public benefit conveyance through the Department of Interior, National Park Service (NPS) is proposed, and has participated in the consultation, has been invited to be a signatory to this MOA, and has agreed to assume certain responsibilities and obligations under this Memorandum of Agreement; and

WHEREAS, the Department of Interior, National Park Service (NPS), acting as the federal agency sponsoring the proposed public benefit conveyance of Hangar 28 and building 28A to

the County of Orange pursuant to 40 U.S.C. 484(k) has been invited to be a signatory to this MOA; and

WHEREAS, the California Preservation Foundation (CPF), Tustin Area Historical Society, Irvine Historical Society, Orange County Historical Society, and Heritage Orange County, Inc. were invited to participate in this consultation and have been kept informed of all consultation efforts for this MOA;

NOW, THEREFORE, DoN, the SHPO, and the Council agree that the lease, disposal and reuse of MCAS Tustin shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

In the event that disposal of MCAS Tustin is selected by the appropriate decisionmaker and memorialized in the appropriate National Environmental Policy Act (NEPA) document, DoN will ensure that the following measures are carried out:

I. HANGARS 28 AND 29 AND HISTORIC DISTRICT

A. Historic American Building Survey (HABS)

The National Park Service (NPS) has advised DoN pursuant to Section 110(b) of the Act regarding the level of HABS recordation appropriate for Hangars 28 and 29 and the discontiguous historic district. DoN shall complete the recordation prior to conveyance of any property within the discontiguous historic district and shall ensure that copies of the recordation are made available to the SHPO, the City, and to any local or other archive facilities designated by the SHPO.

B. Curation of Architectural Drawings, Photographs, and Archival Materials

Within 90 days from execution of this MOA, DoN shall donate original or reproducible copies of plans and architectural drawings and other archival materials and records, as available, concerning the layout and the buildings and structures that made up the original Navy lighter-than-air blimp facility to a local curation facility that meets the requirements of 36 CFR part 79. The City or its designee will also be provided with copies of these materials.

C. Other Measures

With the exception of Hangars 28 and 29 and buildings 28A and 29A, which are addressed in Stipulation II, upon completion of the tasks described in I.A and I.B above, no other measures will be required to mitigate adverse effects to the eligible discontiguous historic district.

II. BUILDINGS 28 AND 28A (HANGAR 28 COMPLEX) AND BUILDINGS 29 AND 29A (HANGAR 29 COMPLEX)

NPS involvement under this MOA shall be with respect to the Hangar 28 Complex only. If the Hangar 28 Complex is not conveyed to the County of Orange by NPS, NPS shall have no further responsibilities or obligation under this MOA.

As described in the LRA reuse plan for MCAS Tustin, preservation of the Hangar 28 Complex is dependent upon its marketability for economically viable adaptive uses. The County, the most likely initial transferee of the Hangar 28 Complex, does not propose to expend general fund revenues for the preservation of the Hangar 28 Complex. The County seeks to have the 85 acres surrounding, and including, the Hangar 28 Complex, be used in a manner consistent with the land uses specified in the MCAS Tustin Specific Plan/Reuse Plan and Errata, dtd October 1996, and dtd September 1998. For either a Federal Lands to Parks or Historic Monument program use, the County will seek to have part or the entire Hanger 28 Complex adaptively used by the private sector through a concession agreement.

As described in the LRA reuse plan for MCAS Tustin, preservation of the Hangar 29 Complex is dependent upon an economically viable adaptive use being identified. The City does not propose to expend local tax dollars for the preservation of the Hangar 29 Complex. The City seeks to have the parcel that includes the Hangar 29 Complex and the surrounding parcels, all defined as the Community Core (Neighborhood D), developed by private developers in accordance with the land uses specified in the MCAS Tustin Specific Plan/Reuse Plan and Errata, dtd October 1996, and dtd September 1998.

A substantive effort must be made to determine whether there is an economically viable adaptive use of the Hangar 28 Complex and the Hangar 29 Complex. DoN, SHPO, and the Council agree that this shall be accomplished through a comprehensive marketing effort for each complex that is carried out in accordance with the guidelines contained in Appendix C.

A. Marketing Efforts for Adaptive Use

1. The City/County may initiate the comprehensive marketing effort for the complexes at any time after the NEPA Record of Decision.

2. During the marketing period, the City/County and its designated representatives shall keep DoN, NPS, and SHPO apprised of the status of the marketing efforts and shall provide any written information requested by those agencies.

3. Notwithstanding the provisions of Stipulation XIV, DoN, NPS, and SHPO shall be afforded 45 days from receipt of the report required pursuant to Appendix C to determine if the marketing effort has been in compliance with the terms of this MOA or other measures agreed upon by the City/County, DoN, NPS, and SHPO.

4. If DoN, NPS and SHPO determine that the marketing effort has not complied with the terms of this MOA or other measures agreed upon by the City/County, DoN, NPS, and SHPO, DoN shall consolidate all comments and obtain agreement on a consolidated written determination. DoN shall forward this determination, including a description of the actions required to complete the marketing effort, to the City/County. If the parties cannot resolve any issue regarding the marketing effort, any party may invoke the provisions of Stipulation XI.

B. Historic Preservation Measures

1. If the marketing effort identifies an economically viable adaptive use of either of the complexes, that complex will be encumbered by a historic preservation covenant consistent with Appendix B or by other preservation restrictions acceptable to NPS and/or SHPO. In the case of the Hangar 28 Complex, these measures shall balance the needs of the adaptive use and the needs for effective operation of the Federal Lands to Parks or Historic Monument programs.

2. If NPS and/or SHPO determine that, despite a marketing effort which complies with the terms of this MOA or as agreed to by the City/County, NPS, and/or SHPO, an economically viable adaptive use of the Hangar 28 Complex and/or the Hangar 29 Complex was not identified, NPS and/or SHPO shall promptly advise DoN and notify the City/County that the mitigation measures in Stipulation III are required.

III. MITIGATION MEASURES

The County shall be responsible for completing the following mitigation measures in the event the Hangar 28 Complex is conveyed without a historic preservation covenant or restriction. The City shall be responsible for completing the following mitigation measures in the event the Hangar 29 Complex is conveyed without a historic preservation covenant or restriction. Notwithstanding these obligations, the County and City may agree to collaborate to complete a single history, exhibit and video. These measures shall be completed before any modifications to the affected hangar complex(es) may commence or the complex(es) is transferred without a covenant. If modifications conform to the items listed in Appendix D, no mitigation is required.

A. Written History –

The City/County will prepare an illustrated history report on the MCAS Tustin, with emphasis on the initial construction of the air station and its World War II Navy lighter-than-air operations. The City/County shall provide a scope of work for this report and draft reports to the DoN, SHPO, the Council, and the consulting parties for review and comment as provided in Stipulation XIV. A professional quality reproducible copy of the report will be distributed to the SHPO, DoN, County, and City.

B. Exhibit –

The City/County will prepare a professional quality illustrated interpretive exhibit with emphasis on the initial construction of the air station and its Word War II Navy lighter-than-air operations. The exhibit will be displayed in a location that will allow viewing by the public. The City/County shall develop the plans for the exhibit and provide them to the DoN, SHPO, the Council, and consulting parties for review and comment as provided in Stipulation XIV.

C. Interpretive Video –

1. The City/County shall prepare a professional quality documentary video that shall not exceed 30 minutes in length and combine still photographs, any available historic film footage, current film or video footage, oral interviews, narration, and appropriate music documenting each hangar. The City/County shall provide a concept plan for this documentary video to the DoN, SHPO, the Council, and the consulting parties for review and comment as provided in Stipulation XIV.

2. The City/County shall undertake a one-time distribution and outreach program for the documentary video. This effort will include producing, packaging, and distributing tapes for broadcast and to local public libraries, schools, and interested organizations.

IV. CARETAKER MAINTENANCE

Until the Hanger 28 and/or Hanger 29 Complexes are conveyed or leased, DoN shall protect and maintain these properties at minimum levels recommended in the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (Standards). Such activities will not require further consultation.

V. LEASING AND LICENSING ACTIVITIES

A. In order to reduce caretaker costs and/or to further the redevelopment of the installation, DoN may enter into leases and licensing agreements for properties at MCAS Tustin. All real estate leases and licensing agreements shall include provisions that the lessee or licensee shall not undertake any activity, including, but not limited to, construction, demolition, alteration or repairs (collactively "work") to the hanger complexes, except in acoordance with paragraph V.B.

B. DoN shall require all lessees to submit to DoN for review and approval any proposal for work on the Hangar Complexes. Work may proceed upon written approval from DoN that the work scope conforms to the Standards. No further consultation with the SHPO or ACHP shall be required unless DoN determines that the work scope cannot be modified to conform to the Standards. If DoN detarmines that the work scope cannot be modified to conform to the Standards or completed work does not conform to the Standards; DoN shall immediately comply with 36 CFR §§ 800.5(d)(2) and 800.6. Any raquasted documentation shall be completad to the satisfaction of DoN, SHPO, and/or the Council at the expense of the lessee. It is agreed that the following will not require further consultation with the SHPO and/or ACHP, if approved by DoN: painting interior and exterior surfaces that have been previously painted in non-traditional colors for temporary uses, if there is a bonded agreement that the property will be restored to its original color scheme when the temporary use is complete.

VI. PERSONNEL QUALIFICATIONS

DoN, in cooperation with the signatories, as applicable, shall ensure that all historic preservation work pursuant to this MOA and involving the planning for and physical

rehabilitation of historic structures is carried out by or under the direct supervision of a person or persons meeting, at a minimum, the Secretary of the Interior's Professional Qualification Standards (48 FR 44738).

VII. REPORTING

DoN, in cooperation with the City and County, shall provide bi-annual status reports to all signatories and consulting parties in compliance with the MOA. DoN will notify all parties when all the terms of the MOA have been satisfied.

VIII. OISCOVERIES

The City and County shall notify the DoN as soon as practicable if it appears that redevelopment of MCAS Tustin will affect a previously unidentified property that may be eligible for inclusion in the National Register or affect a known historic property in an unanticipated manner. The City and County shall stop construction in the vicinity of the discovery and will take all reasonable measures to avoid or minimize harm to the property until the DoN concludes consultation with the SHPO. If the newly discovered property has not previously been included in or determined eligible for inclusion in the National Register, the DoN may assume that the property is eligible for purposes of this MOA. The DoN will notify the SHPO at the earliest possible time and consult to develop actions that will take into account the effects of the undertaking. The DoN will notify the SHPO of any time constraints, and DoN, the City or County, and the SHPO will mutually agree upon time frames for this consultation. The DoN will provide the SHPO with written recommendation that take the effects of the undertaking into account. If the SHPO does not object to DoN's recommendations within the agreed upon time frame, DoN will modify the scope of work as necessary to implement its recommendations.

IX. OURATION OF MOA

This MOA shall remain in effect until all stipulations have been fulfilled as determined by DoN.

X. OEFINITION OF SIGNATORIES

DoN, SHPO, and the Council are the signatories to this MOA. These agencies have sole authority to execute, amend or terminate this agreement.

The City of Tustin, the County of Orange, and the National Park Service are "invited signatories. These agencies have assumed responsibilities in this MOA.

XI. RESOLUTION OF OBJECTIONS

Should any signatory or invited signatory object within 30 days to any action(s) provided for review pursuant to this MOA, DoN shall consult with the objecting party to resolve the objection. If DoN determines that the objection cannot be resolved, DoN shall notify the remaining parties as to the nature of the dispute and request Council participation. Within thirty

(30) calendar days after receipt of all pertinent documentation, the Council will either: (a) provide the DoN with recommendations, which the DoN shall take into account in reaching a final determination regarding the dispute; or (b) notify the DoN that it will comment pursuant to 36 CFR 800.7 with reference to the subject of the dispute. Any Council comment in response to such a request will be taken into account by DoN in accordance with 36 CFR §800.7(c)(4) with reference to the subject of the dispute. Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; the DoN's, the City's or the County's responsibility to carry out all actions under this MOA that are not the subject of the dispute will remain unchanged.

XII. PUBLIC OBJECTIONS

At any time during the implementation of the measures stipulated in this MOA should an objection be raised by a member of the public regarding the lack of compliance or violation by any party of the terms of this MOA, DoN shall take the objection into account, notify SHPO and the Council of the objection, and consult as needed with the objecting party.

XIII. AMENDMENTS TO THE MOA

Any signatory, including invited signatories, to this MOA may request that it be amended, whereupon the signatories and the consulting parties will consult in accordance with 36 CFR §800.6(c)(7) to consider such amendment. Such a request shall be supported by adequate documentation.

XIV. REVIEW AND COMMENT PROCEDURES

Whenever a Stipulation in the MOA provides for review and comment by SHPO, the Council, or consulting parties, the SHPO and consulting parties will be allowed 30 days after receipt of all pertinent documentation, and the Council will be allowed 40 days after receipt of all pertinent documentation to provide comments to the requesting party. The requesting party shall immediately forward copies of all comments received to facilitate review. The failure of any signatory or consulting party to comment within the timeframes shall not prevent the requesting party from finalizing the document provided for review. Any objections to the submitted documents or actions provided for review shall be resolved pursuant to Stipulation XIV.

XV. FAILURE TO CARRY OUT THE TERMS OF THIS MOA.

In the event that the terms of this MOA are not carried out, DoN shall notify the signatories and the consulting parties and request further comments of the Council pursuant to 36 CFR part 800. If DoN cannot carry out the terms of the MOA, neither DoN, NPS, the County, nor the City will take or sanction any action or make an irreversible commitment that would result in an adverse effect to the historic properties covered by this MOA, or that would foreclose the Council's consideration of modification or alternatives that could avoid or mitigate the adverse effect on historic properties until the commenting process has been completed.

EXECUTION OF THIS MEMORANDUM OF AGREEMENT by DoN, the SHPO, and the Council and implementation of its terms, is evidence that DoN has afforded the Council an opportunity to comment on the disposal and reuse of MCAS Tustin and its affects on historic properties and that DoN has taken into account the effects of the undertaking on historic properties.

DEPARTMENT OF THE NAVY

BY _____ Date: 11/18/99
W.G. Bowdon
Major General, U. S. Marine Corps
Commender, Merine Corps Air Bases Western Area

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 12-6-99
Daniel Abeyta, Acting
State Historic Preservation Officer

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY _____ Date: 12/13/99
John Fowler
Executive Director

INVITED SIGNATORIES

CITY OF TUSTIN

Approved as to Form:

_____
Lois Jeffrey
City Attorney

"City"
City of Tustin

By: _____
Christine Shingleton
Assistant City Manager

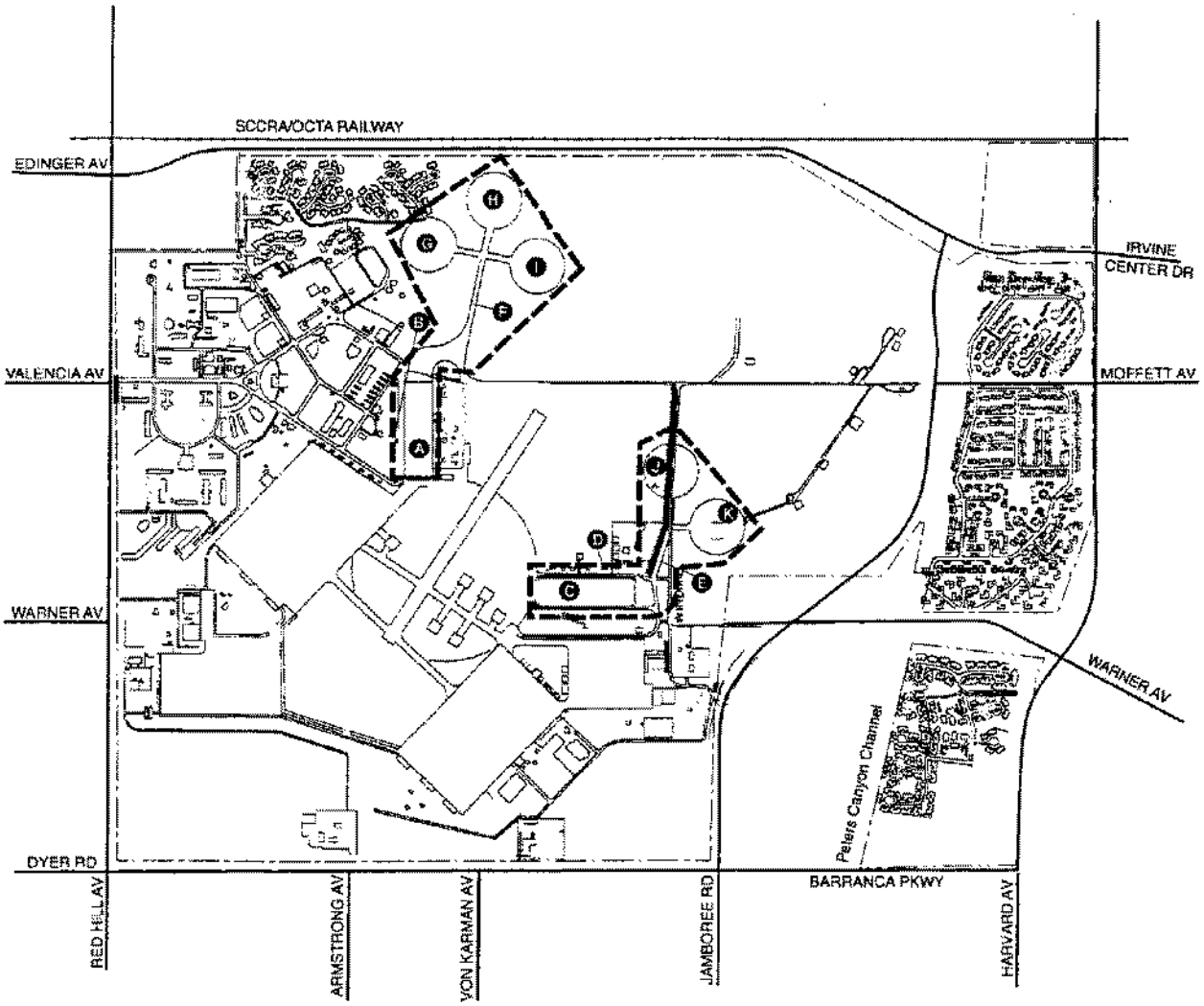
COUNTY OF ORANGE

By: _____ Date: 11/24/99

APPROVED AS TO FORM
Laurens H. Watson, County Counsel
ORANGE COUNTY, CALIFORNIA
By _____ Deputy
Date: 11/24/99

DEPARTMENT OF INTERIOR, NATIONAL PARK SERVICE

By: _____ Date: 11/29/99
Ray Murray
Planning and Partnership Team Leader
Pacific Great Basin Support Office
National Park Service



	REUSE PLAN BOUNDARY
	DISCONTIGUOUS HISTORIC DISTRICT
A	HANGAR #1 (BUILDING #28)
B	HELIUM TANK BUILDING (BUILDING #28A)
C	HANGAR #2 (BUILDING #29)
D	HELIUM TANK BUILDING (BUILDING #29A)
E	CONNECTION ROAD FOR MOORING MATS #4-#6
F	CONNECTION ROAD FOR MOORING MATS #1-#3
G	MOORING MAT #1
H	MOORING MAT #2
I	MOORING MAT #3
J	MOORING MAT #4
K	MOORING MAT #5
L	MOORING MAT #6 (PREVIOUSLY DEMOLISHED)

0 2000 Feet

Discontiguous Historic District

APPENDIX B
Architectural Preservation Covenant

Grantee hereby covenants on behalf of itself, its successors and assigns, to the United States of America, acting by and through the Department of the ____, to preserve and maintain Hanger ___ and Building ___A, (hereinafter referred to as "the Buildings") located in the City of Tustin, County of Orange, State of Califomia, more particularly described in the legal description attached hereto as Exhibit ___, in a manner that preserves and maintains the attributes that contribute to the eligibility of the Property for the National Register of Historic Places. Such attributes include exterior features (such as facades and fenestration, scale, color, materials and mass) and interior features (including the heavy timber trusses and connecting systems).

(1) The Buildings will be preserved and maintained in accordance with The Secretary of Interior's Standards for the Treatment of Historic Properties and Guidelines (National Park Service). No construction, alteration, rehabilitation, remodeling, demolition, disturbance of the ground surface or other action shall be undertaken or permitted to be undertaken on said property that would materially affect the integrity or appearance of the attributes described above without the prior written permission of the_____, and signed by a fully authorized representative thereof.

(2) Upon acquisition of the property, the Grantee will take prompt action secure the property from the elements, vandalism and arson, and will undertake any stabilization that may be required to prevent deterioration. Grantee will make every effort to retain or use, to the extent practicable, the Buildings.

(3) In the event that archeological materials are encountered during construction or ground-disturbance activities, work shall cease in the immediate area until the _____ is consulted and provides written permission to recommence work. Should the _____ require, as a condition of the granting of such permission, that the Grantee conduct archeological survey data recovery operations or other activities designed to mitigate the potential adverse effect of the proposed activity on the *archeological resources* the Grantee shall at his/her/its expense conduct such activities in accordance with the Secretary of the Interior's Standards and Guidelines for Archeological Documentation (48 FR 447344-37) and such standards and guidelines as the _____may specify, including, but not limited to, standards and guidelines for research design, field work, analysis, preparation and dissemination of reports, disposition of artifacts and other materials, consultation with Native American or other organizations, and reinterment of human remains.

(4) The Grantee will allow the_____, the City of Tustin, or their designees, at all reasonable times and upon reasonable advance notice to Grantee, to inspect the property in order to ascertain whether Grantee is complying with the conditions of this preservation covenant.

(5) The Grantee will provide the _____ with a written summary of actions taken to implement the provisions of this preservation covenant within one (1) year after the effective date of the transfer of the property.

(6) Failure of the _____ to exercise any right or remedy granted under this covenant shall not have the effect of waiving or limiting the exercise by the _____ or any other right or remedy or the invocation of such right or remedy at any other time.

This covenant shall be a binding on Grantee, its successors and assigns, and shall be deemed to run with the land. The restrictions, stipulations and covenants contained herein shall be inserted by Grantee, his/her/its successors and assigns, verbatim or by express reference in any deed or other legal instrument by which it divests itself of either the fee simple title or any lesser estate in the Buildings, or any part thereof.

APPENDIX C
Marketing Plan Guidelines

Preface

Generally, the purpose of the marketing plan is to provide a structured approach to the development of sufficient market information from which it can be determined whether an economically viable adaptive use for each complex exists. The term 'economically viable adaptive use' means a proposed use that maintains the historic and architectural integrity of the structure and that generates sufficient income so as not to require the infusion of local tax dollars or local public funds and provides for required "fair share" infrastructure contributions and development costs, including land acquisition at fair market value of the Hangar 29 Complex.

The marketing plan will clearly present the property and encourage an economically viable adaptive use in a manner that preserves its historic and architectural integrity. Each proposal received will be graded and ranked according to a predetermined set of criteria to ensure selection of the proposal that offers the best preservation measures for the property.

The marketing plan will be based on a two-step process. The first step (Phase 1) will involve the issuance of a Request for Expressions of Interest (REI) in a format consistent with the provisions of the plan. Those persons submitting an Expression of Interest containing the information required by the REI may be invited to participate in the second step of the process (Phase 2) and to submit a proposal in accordance with the Request for Proposals (RFP). The merketing plan will identify the criteria and rating factors that will be used by the City (Hangar 29 Complex) or County (Hangar 28 Complex) to evaluate and rank proposals received in connection with the RFP.

The City/County will submit a proposed marketing plan for said buildings to the NPS (for the Hangar 28 Complex only), DoN, SHPO and the Council for review and comment in accordance with Stipulation XIV. The marketing plan submittal shall demonstrate how the timing of the marketing effort will not inhibit the identification and implementation of an economically viable adaptive use for the complex(es).

After the City and/or County has evaluated and ranked proposals, if any, and before it takes any action thereon, the City and/or County shall submit a report to DoN, SHPO, NPS, as appropriate, and the Council for their review and comment describing the results of its marketing efforts under the plan, pursuant to Stipulation II.A.3. If the marketing efforts have not resulted in the submission of an economically viable adaptive use proposal consistent with the MCAS Tustin Specific Plan/Reuse Plan, the City and/or County submission shall include a plan of action and milestones for completion of the mitigation measures required by Stipulation III.

GUIDELINES

The Marketing Plan shall include the following:

1. An information package about the property, which shall include but not be limited to:
    - Photographs of the property.
    - A map and area description.

- Anticipated date the property will be available for redevelopment.

- MCAS Tustin Specific Plan/Reuse Plan land use designations, zoning designations, and the LRA's goals and objectives for the property. Information on how to obtain the complete document shall be included.

- Information on the historic/architectural significance of the hangar complexes. This information shall include a thorough description of the improvements and the land area available, identifying elements and character defining features of the historic properties, which should be given special consideration in the redevelopment.

- Excerpts from the Marine Corps Condition Assessment and Economic Analysis for Reuse of the Historic Blimp Hangars that discuss the condition of the buildings. Information on how to obtain the complete document shall be included.

- For the Hangar 29 Complex only, provided that an adaptive use for the Hangar 28 Complex has been selected, sufficient information concerning that use to enable recipients to design proposals which will not unduly conflict with the redevelopment of the Hanger 28 Complex.

- Information on available financial incentives for rehabilitating historic structures, including but not limited to, the Federal Rehabilitation Tax Credit for Historic Properties, funding sources seeking participation in federal rehabilitation, tax credit projects, Mills Act, etc.

- Information on the existing infrastructure, including utility connections and services, and proposed infrastructure improvements as outlined in the MCAS Tustin Specific Plan/Reuse Plan and required 'fair share' developer infrastructure contributions.

- Information on environmental and soil conditions on the property and the presence of any hazardous materials in the vicinity of the historic property, time frame for remediation, and anticipated impacts of those remediation activities on the use of the property and buildings.

- An advertising plan and schedule, including a list of local, regional and national publications and electronic communication tools where the availability of the property will be publicized, including but not limited to, the National Association of Installation Developers.

- Information to enable parties to tour the property.

- A distribution list of entities to which the request for Expressions of Interest will be sent.

2. Expression of Interest Guidelines –

Respondents shall be required to submit the following information for consideration:

- Respondent's name, address, e-mail, telephone and fax number, type of legal entity, and resumes of all principals of the firm.

- A description, in narrative form of no more than five pages, of the site development concept and approach for use of the historic property in relation to the required land use designations in the MCAS Tustin Specific Plan/Reuse Plan, and a description of tha expected effect on the integrity or appearance of the historic properties.

- For the Hangar 29 Complex only, if appropriate, a description of how the project would be compatible with the proposed use of the Hangar 28 Complex, so that it will not adversely effect its economic viability.

- A description of any additional infrastructure requirements abova existing systems or identified in the MCAS Tustin Specific Plan/Reuse Plan, including utility connections and sarvices, that would be required to operate and maintain the property in accordance with applicable codes.

- A description, including references, of previous ralevant experience in ownership, development, and operation of similar projects to that being proposed.

- A list of potential funding vehicles being considered or proposed and, if available, evidance of committed resources.

- A copy of the most recent audited year-end financial statement of the respondent. This shall be submittad as 'confidential' under separate cover.

- A statement as to whathar the respondent has evar filled for bankruptcy or had projects that have been foreclosed or served a notice of default. If so, provide an explanation of the circumstance when they occurred.

3. Evaluation criteria shall be developed and used to evaluate the Expressions of Interest. These criteria shall be based upon tha required Expression of Interest submittal information. In addition to complying with the requirements of the REI in terms of providing information, the following list of criteria are provided for consideration:

    - Does the respondent or firm appear to have the professional experience and organization for this type of project?

    - Is the development concept compatible with the MCAS Tustin Specific Plan/Reuse Plan?

    - Does the project appear to be economically viable?

    - In the case of the Hangar 29 Complex, does the project appear to adversely effect the economic viability of reuse of the Hangar 28 Complex?

    - Can any unique infrastructure needs of the project be met?

    - Does the respondent appear to have experience in developing and operating the type of project being proposed?

    - Does tha respondent appear to have axperiance in management operation and ownership of similar type facilities being proposed?

    - Does the respondent appear to have the financial capability to carry out the project?

4. Based upon evaluation of the Expression of Interest submittals, a short list of qualified respondents shall be provided the opportunity to submit a proposal (Phase 2). As a result of Phase 1, it may also be determined that no economically viable proposal has been presented. The marketing plan shall include the guidelines for submitting the proposals. These guidelines shall include:

   a. Identification of the complete development team, including each member's role and qualifications.

   b. A complete description of the development concept and program, including a detailed description of the type of improvement and changes to the property. Any changes to the integrity or appearance of the historic property shall be discussed, as well as whether the development concept and program are compatible with the lend use designations in the Specific Plan/Reuse Plan.

   c. Description of how the proposal is consistent with the Secretary of Interior's Standerds for the Treatment of Historic Properties (36 CFR Part 68).

   d. Site plans, circulation plans, utility plans, and others that may be needed to describe the proposal.

   e. A deteiled stetement of development costs, including the following:

      - In the case of the Hangar 29 Complex, estimated land acquisition cost;
      - A breakdown of hard costs for construction, on-site improvements, off-site improvements and other similar costs;
      - A breakdown of soft costs, including professional fees, permit fees, insurance, legal fees, overhead, project management, and similar costs;
      - A breakdown of financing costs, including points, fees, construction loen rates, terms, and schedule;
      - Identification of sources of money for construction and permanent loans, together with a description of proposed loan terms and related security devices. The discussion should include a description of the financiel incentives for rehebilitating historic structures that are proposed to be utilized.

   f. A detailed development schedule for all program components. If the development is to be phased, a development proforma for each phase shall be provided as well as a combined development program for the total project.

   g. In the format to be provided at a pre-proposal conference, a complete operating financial proforma will be required for the first five years of the project, and the tenth year, identifying the values and assumptions for:

      - Lease rates, both gross and triple net, where applicable;
      - Other potentiel income, such as common area maintenance assessments, common marketing assessment, etc.;

- Estimated vacancy factor;
- Estimated operating expenses, including common area maintenance costs, marketing costs, leasing commissions, utility costs (if applicable), property taxes (if applicable), as well as any reserve funds to be established.
- Debt service;
- Proposed distribution, if any, of net income among the partners and the developer;
- Committed dates to start construction expressed in elapsed time;
- All contingencies spelled out, i.e. occupancy timeshares; specific market or financing conditions which could delay the project;
- Average rates of return anticipated.

h. Letters of interest by financial institutions for providing construction and/or permanent financing. In the event a proposal includes in the income stream for the project funds from other types of sources, such as grants from government or non-profit institutions, the proposal must include statements from such sources that the requisite funds will be made available if the proposal is accepted.

i. A statement of the type of tenants envisioned for the project, any interest by primary anchor tenants and any letter of interest.

j. A statement describing the marketing strategy and leasing approach for the project. Describe the on-going management structure that will be implemented to ensure a high quality of operations and maintenance for the project.

k. A list of at least five (5) references that have knowledge of the respondent's ability to manage, operate, and develop the projects similar to the one proposed.

5. The marketing plan shall also identify the criteria that will be used to evaluate the proposals. These criteria shall be based on the information requested in the RFP requirements. These criteria should include:

- Does the proposal display adequate financial evidence that the proposed project is economically viable?
- Does the proposal present adequate evidence that the proposer has the requisite personnel who have the necessary experience and expertise to manage the project described in the proposal?
- Does the proposal present adequate evidence that the project will be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR part 68)?

- Does the proposal contain adequate evidence that the proposed project is compatible with the land use designations in the MCAS Tustin Specific Plan/Reuse Plan?

- Does the proposal present adequate evidence that the proposer has the financial capacity and means to carry out the project and provides for required "fair share" infrastructure contributions and development costs, including, in the case of the Hangar 29 Complex, land acquisition costs at fair market value?

- Does the proposal present adequate evidence that the development of all program components will be implemented in an orderly and timely manner?