Draft South Coast Resource Management Plan Amendment And Draft Environmental Impact Statement (EIS) for the Santa Ana River Wash Land Exchange

Prepared for:

Bureau of Land Management

San Bernardino Valley Water Conservation District

July 2009

URS

3500 Porsche Way, Suite 300

Ontario, California 91764

United States Department of the Interior

Bureau of Land Management

Draft South Coast Resource Management Plan Amendment
And
Draft Environmental Impact Statement (EIS) for the Santa Ana River Wash Land Exchange

DOI-BLM-CA-D060-2009-0005-EIS

OPEC Control No. DES 09-12

BLM/CA/ES-2009-022+8300

For the

Palm Springs – South Coast Field Office

Palm Springs, California

John R. Kalish, Field Manager

July 2009

Abstract

This Environmental Impact Statement (EIS) evaluates the following: 1) the potential environmental effects of the proposed land exchange on a maximum of 400 acres of Bureau of Land Management (BLM) Selected Lands with a maximum of 380 acres of San Bernardino Valley Water Conservation District (District) Offered Lands; and 2) the amendment to the South Coast Resource Management Plan (SCRMP) to support this land exchange. The land exchange and SCRMP Amendment are referred to as the Proposed Action throughout this EIS.

The BLM proposes to exchange lands located within the Upper Santa Ana River Wash, in southwestern San Bernardino County, California for lands owned by the District in that same area. The Federal lead agency responsible for implementing the National Environmental Policy Act (NEPA) review is the BLM, Palm Springs-South Coast Field Office. The Proposed Action would allow BLM to dispose of fragmented lands and consolidate high-quality habitat to improve the management of the Santa Ana River Wash Area of Critical Environmental Concern (ACEC) and the planned multi-jurisdictional, multi-species Habitat Conservation Plan. The Proposed Action would also allow facilitation and implementation of the 2008 Santa Ana River Wash Land Management Plan (Wash Plan) and development of multiple resource areas to achieve a balance for ground-disturbing activities with the goals of habitat preservation and water conservation.

This EIS analyzes two alternatives: A) the No Action Alternative; and B) the Proposed Action Alternative. Under the No Action Alternative, the proposed land exchange would not occur and the SCRMP Amendment would not be necessary. Habitat preservation, mining, and water conservation activities, under current land-use management practices, would continue to be fragmented throughout the Wash area.

The Proposed Action would allow the BLM to exchange public lands located within the Santa Ana River Wash ACEC for District-owned lands in San Bernardino County, California, and would amend existing Santa Ana River Wash ACEC management prescriptions outlined in the SCRMP. Environmental consequences of the Proposed Action include an increase in lands designated for managed habitat protection, improved connectivity to wildlife movement, linkage for the San Bernardino kangaroo rat (SBKR), slender-horned spineflower, and Santa Ana River woolly-star habitats, and minor loss of lands for water conservation. Mitigation measures include use of landscaping devices to shield mining activity from passing motorists and targeted water conservation activities to enhance the lands for protection of special status species and wildlife habitat.

Forward comments to:

Mike Bennett
Bureau of Land Management
Palm Springs - South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262
Phone: (760) 833-7140
E-mail address: Michael_Bennett@ca. blm.gov

TABLE OF CONTENTS

SECTION **PAGE**

EXECUTIVE SUMMARY 1

INTRODUCTION 1
NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE 1
PURPOSE AND NEED 2
PROPOSED ACTION AND ALTERNATIVES 2
PUBLIC SCOPING 3
SUMMARY OF IMPACTS 3

1.0 INTRODUCTION 1-1

1.1 OVERVIEW OF THE PROPOSED ACTION 1-1
1.2 PURPOSE 1-1
1.3 NEED 1-2
1.3.1 Preservation of Unique Habitats 1-2
1.3.2 Consolidation of Aggregate Mining Resources 1-3
1.4 PROJECT SETTING 1-3
1.5 HISTORY OF THE PROPOSED PROJECT 1-6
1.6 EIS PROCESS 1-7
1.7 DECISION FRAMEWORK 1-8
1.7.1 Public Scoping 1-8
1.7.2 Planning Issues 1-8
1.8 RELATIONSHIP TO OTHER POLICIES, PROGRAMS, AND PLANS 1-10
1.9 COMPLIANCE WITH RELEVANT FEDERAL AND STATE LAWS 1-11

2.0 PROPOSED ACTION AND ALTERNATIVES 2-1

2.1 PROPOSED ACTION 2-1
2.1.1 Project Location 2-1
2.1.2 Description of the Proposed Action 2-1
2.2 ALTERNATIVES DEVELOPMENT 2-10
2.2.1 Alternatives Considered but Not Carried Forward 2-10
2.2.1.1 Exchange of Other or Increased Amounts of BLM Lands 2-10
2.2.1.2 Reduced Land Exchange Area 2-11
2.2.2 Alternatives Carried Forward for Analysis 2-13
2.2.2.1 Alternative A: No Action 2-13
2.2.2.2 Alternative B: Proposed Action 2-13
2.2.3 Agency Preferred Alternative 2-15

3.0 AFFECTED ENVIRONMENT 3-1

3.1 AIR QUALITY 3-1
3.1.1 Regulatory Setting 3-1
3.1.2 Environmental Setting 3-2
3.1.3 Regional Air Quality 3-3
3.1.4 Local Air Quality 3-3
3.1.5 Toxic Air Contaminants 3-4
3.1.6 Global Climate Change 3-4
3.1.7 Existing Emission Sources 3-6
3.2 GEOLOGY AND MINERAL RESOURCES 3-7
3.2.1 Environmental Setting 3-7
3.2.2 Geologic Hazards 3-8
3.2.3 Soil Resources 3-14
3.2.4 Mineral Resources 3-14

3.3 HYDROLOGY & WATER QUALITY 3-17
3.3.1 Regulatory Setting 3-17
3.3.2 Environmental Setting – Hydrology 3-17
3.3.3 Environmental Setting – Water Quality 3-18
3.4 BIOLOGICAL ENVIRONMENT 3-19
3.4.1 Regulatory Setting 3-19
3.4.2 Environmental Setting 3-20
3.4.2.1 Vegetation Communities and Land Cover Types 3-23
3.4.2.2 Wildlife 3-28
3.4.2.3 Special Status Plant Species 3-28
3.4.2.4 Special Status Wildlife Species 3-28
3.4.2.5 Wildlife Corridors 3-29
3.5 LAND USE PLANNING AND RECREATION 3-44
3.5.1 Land Use Regulatory Setting 3-44
3.5.2 Existing Land Uses before the Exchange 3-52
3.5.3 Planned Land Uses 3-57
3.5.4 Recreation Regulatory Setting 3-58
3.5.5 Trails 3-59
3.6 SOCIOECONOMICS 3-61
3.6.1 Regional Setting 3-61
3.6.2 Environmental Setting 3-61
3.7 TRANSPORTATION SYSTEMS AND TRAFFIC 3-66
3.7.1 Existing Roadways 3-66
3.7.2 Level of Service Standards 3-66
3.8 VISUAL RESOURCES 3-68
3.8.1 Regulatory Setting 3-68
3.8.2 Environmental Setting 3-68
3.8.3 Methodology 3-69
3.9 CULTURAL RESOURCES 3-73
3.9.1 Regulatory Setting 3-73
3.9.2 Environmental Setting 3-74
3.9.3 Summary of Research and Survey Results 3-78

4.0 ENVIRONMENTAL CONSEQUENCES 4-1

4.1 ANALYSIS METHODS 4-1
4.2 AIR QUALITY 4-2
4.2.1 Impacts Common to All Alternatives 4-2
4.2.2 Alternative A: No Action 4-8
4.2.3 Alternative B: Proposed Action 4-9
4.3 GEOLOGY AND MINERAL RESOURCES 4-10
4.3.1 Impacts Common to All Alternatives 4-10
4.3.2 Alternative A: No Action 4-10
4.3.3 Alternative B: Proposed Action 4-11
4.4 HYDROLOGY AND WATER QUALITY 4-12
4.4.1 Impacts Common to All Alternatives 4-12
4.4.2 Alternative A: No Action 4-12
4.4.3 Alternative B: Proposed Action 4-12
4.5 BIOLOGICAL ENVIRONMENT 4-15
4.5.1 Impacts Common to All Alternatives 4-15
4.5.2 Alternative A: No Action 4-15
4.5.3 Alternative B: Proposed Action 4-15
4.5.4 Mitigation 4-16

4.6 LAND USE PLANNING AND RECREATION 4-17
4.6.1 Impacts on Land Use 4-18
4.6.1.1 Impacts Common to All Alternatives 4-18
4.6.1.2 Alternative A: No Action 4-18
4.6.1.3 Alternative B: Proposed Action 4-18
4.6.2 Impacts on Recreation 4-25
4.6.2.1 Impacts Common to All Alternatives 4-25
4.6.2.2 Alternative A: No Action 4-25
4.6.2.3 Alternative B: Proposed Action 4-25
4.7 SOCIOECONOMICS 4-28
4.7.1 Impacts Common to All Alternatives 4-28
4.7.2 Alternative A: No Action 4-28
4.7.3 Alternative B: Proposed Action 4-29
4.8 TRANSPORTATION SYSTEMS AND TRAFFIC 4-29
4.8.1 Impacts Common to All Alternatives 4-29
4.8.2 Alternative A: No Action 4-30
4.8.3 Alternative B: Proposed Action 4-30
4.9 VISUAL RESOURCES 4-31
4.9.1 Impacts Common to All Alternatives 4-31
4.9.2 Alternative A: No Action 4-31
4.9.3 Alternative B: Proposed Action 4-31
4.10 CULTURAL RESOURCES 4-37
4.10.1 Impacts Common to All Alternatives 4-38
4.10.2 Alternative A: No Action 4-39
4.10.3 Alternative B: Proposed Action 4-39
4.11 CUMULATIVE EFFECTS 4-40
4.11.1 Introduction 4-40
4.11.2 Past, Present, and Reasonably Foreseeable Actions 4-40
4.11.2.1 Aggregate Mining (Cemex & Robertson's) 4-41
4.11.2.2 Upper Santa Ana River Wash Land Management Plan Trail Plan 4-41
4.11.2.3 Orange Street/Boulder Avenue Street Widening 4-41
4.11.2.4 Phase III of the District's Water Conservation Area 4-41
4.11.3 Cumulative Effects by Resource 4-42
4.11.3.1 Air Quality 4-42
4.11.3.2 Geology and Mineral Resources 4-43
4.11.3.3 Hydrology and Water Quality 4-44
4.11.3.4 Biological Environment 4-44
4.11.3.5 Land Use Planning and Recreation 4-44
4.11.3.6 Socioeconomics 4-45
4.11.3.7 Transportation Systems and Facilities 4-45
4.11.3.8 Visual Resources 4-45
4.11.3.9 Cultural Resources 4-45
4.12 IRREVERSIBLE EFFECTS 4-46
4.12.1 Vegetation 4-46
4.12.2 Wildlife 4-46
4.12.3 Visual Resources 4-46
4.13 SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT 4-47

5.0 CONSULTATION AND COORDINATION 5-1

5.1 PUBLIC INVOLVEMENT AND SCOPING 5-2
5.2 LIST OF PREPARERS 5-4
5.3 LIST OF RECIPIENTS OF THE EIS 5-6

List of Appendices

APPENDIX A: BIBLIOGRAPHY
APPENDIX B: GLOSSARY
APPENDIX C: INDEX
APPENDIX D: SCOPING COMMENTS
APPENDIX E: CURRENT ACEC DESIGNATION UNDER SCRMP
APPENDIX F: BLM LAND EXCHANGE PROCEDURE
APPENDIX G: BIOLOGICAL TECHNICAL REPORT

List of Figures

FIGURE 1.1 REGIONAL VICINITY MAP 1-5
FIGURE 2.1 PROJECT LOCATION MAP 2-3
FIGURE 2.2 DISTRICT CONSERVATION EASEMENT 2-4
FIGURE 2.3 ASSESSORS PARCEL MAP & EXISTING OWNERSHIP MAP 2-8
FIGURE 2.4 PROPOSED OWNERSHIP MAP 2-9
FIGURE 2.5 BLM PARCELS IN WASH PLAN AREA 2-12
FIGURE 2.6 PROPOSED SCRMP AMENDMENT LAND USE DESIGNATION 2-16
FIGURE 3.1 ALQUIST-PRIOLO FAULT ZONES 3-11
FIGURE 3.2 LIQUEFACTION ZONE MAP 3-13
FIGURE 3.3 SOILS MAP 3-15
FIGURE 3.4 MINERAL RESOURCE ZONE (MRZ) MAP 3-16
FIGURE 3.5 SPECIES OCCURANCES & SPECIAL DESIGNATIONS 3-22
FIGURE 3.6 VEGETATION COMMUNITIES 3-27
FIGURE 3.7 SPECIES OCCURANCES & SPECIAL DESIGNATIONS 3-31
FIGURE 3.8 EXISTING SCRMP LAND USE DESIGNATION 3-46
FIGURE 3.9 WASH PLAN LAND USE MAP 3-49
FIGURE 3.10 EXISTING LAND USE CONDITIONS 3-54
FIGURE 3.11 EXISTING MINING & FUTURE QUARRIES 3-56
FIGURE 3.12 CENSUS TRACT & BLOCK GROUPS 3-65
FIGURE 3.13 VIEWPOINT & SIMULATION LOCATION 3-72
FIGURE 3.14 UPDATED & NEWLY IDENTIFIED CULTURAL RESOURCES 3-85
FIGURE 4.1 SENSITIVE RECEPTOR MAP 4-4
FIGURE 4.2 FLOOD ZONE MAP 4-14
FIGURE 4.3 FUTURE MANAGED HABITAT & ACEC DESIGNATION 4-21
FIGURE 4.4 FUTURE LAND USE MAP 4-24
FIGURE 4.5 PROPOSED WASH PLAN TRAIL MAP 4-27
VIEWPOINT 1 4-33
SIMULATION 1 4-33
VIEWPOINT 2 4-34
SIMULATION 2 4-34
VIEWPOINT 3 4-35
VIEWPOINT 4 4-35
VIEWPOINT 5 4-36
SIMULATION 5 4-36

List of Tables

TABLE ES -1 SUMMARY OF EFFECTS FROM PROPOSED ACTION AND NO ACTION....3
TABLE 1.1 PLANNING ISSUES.... 1-9
TABLE 2.1 BLM LANDS PROPOSED FOR EXCHANGE (SELECTED LANDS) 2-6
TABLE 2.2 DISTRICT LANDS PROPOSED FOR EXCHANGE (OFFERED LANDS) 2-7
TABLE 2.3 BLM LANDS CONSIDERED FOR EXCHANGE 2-10
TABLE 2.4 ALTERNATIVES ACREAGE MATRIX 2-15
TABLE 3.1 SPECIAL DESIGNATIONS FOR EXISTING AND PROPOSED LAND OWNERSHIP 3-20
TABLE 3.2 VEGETATION COMMUNITIES AND LAND COVER TYPES 3-25
TABLE 3.3 SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA 3-32
TABLE 3.5 CITY OF HIGHLAND ALLOWABLE LAND USES WITHIN THE PROJECT AREA 3-50
TABLE 3.6 CITY OF REDLANDS ALLOWABLE LAND USES WITHIN THE PROJECT AREA 3-51
TABLE 3.7 EXISTING CONDITION (NO ACTION).... 3-52
TABLE 3.8 EXISTING MINING OPERATIONS WITHIN THE UPPER SANTA ANA RIVER WASH 3-55
TABLE 3.9 FUTURE LAND USE (PROPOSED ACTION) 3-58
TABLE 3.10 POPULATION AND POPULATION CHANGE 3-62
TABLE 3.11 ECONOMIC PROFILE 3-63
TABLE 3.12 TRAFFIC LEVEL OF SERVICE (LOS) DEFINITIONS 3-67
TABLE 3.14 SCENIC QUALITY OF VIEWPOINTS, SCORE QUALITY RATING 3-71
TABLE 3.16 CULTURAL RESOURCES SITES WITHIN THE DISTRICT CULTURAL RESOURCES APE 3-80
TABLE 4.1 FUGITIVE DUST EMISSIONS FROM CONTINUING MINING ACTIVITY 4-5
TABLE 4.2 CRITERIA POLLUTANT CONCENTRATIONS AT NEAREST RESIDENCES 4-5
TABLE 4.3 CARBON DIOXIDE EMISSIONS 4-7
TABLE 4.5 EXISTING AND FUTURE ACTIVITIES UNDER THE PROPOSED ACTION (ACRES) 4-23
TABLE 5.2 SCOPING MEETINGS 5-2
TABLE 5.3 INDEX OF COMMENTS 5-3
TABLE 5.4 LIST OF PREPARERS 5-4

ACRONYMS AND ABBREVIATIONS

AAQS	Ambient Air Quality Standards
ACEC	Area of Critical Environmental Concern
ADT	Average Daily Trips
APE	Area of Potential Effect
Basin	South Coast Air Basin
BLM	U.S. Bureau of Land Management
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAT	Climate Action Team
CCAA	California Clean Air Act
CEC	California Energy Commission
CDFG	California Department of Fish and Game
CDWR	California Department of Water Resources
Cemex	Cemex Construction Materials Limited Partnership
CESA	California Endangered Species Act
CFC	Chlorofluorocarbons
the County	County of San Bernardino
CRPP	Cultural Resource Project Plans
CUP	Conditional Use Permit
CWA	Clean Water Act
DCH	Designated Critical Habitat
the District	San Bernardino Valley Water Conservation District
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
EVWD	East Valley Water District
FESA	Federal Endangered Species Act
FLPMA	Federal Land Policy Management Act
GHG	Greenhouse Gases
GIS	Geographic Information System
HCA	Habitat Conservation Area
HFC	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
LSA	LSA Associates, Inc.
MRZ	Mineral Resource Zone
MTPY	Million tons per year
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
NFIP	National Flood Insurance Program
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OEHHA	Office of Environmental Health Hazard Assessment

OS	Open Space
PCT	Paleo-Coastal Tradition
PFC	Perfluorocarbons
PM	Particulate Matter
RAFSS	Riversidean Alluvial Fan Sage Scrub
RMUD	City of Redlands Municipal Utilities Department
Robertson‘s	Robertson‘s Ready Mix, Ltd
ROD	Record of Decision
SANBAG	San Bernardino Association of Governments
SBCFCD	San Bernardino County Flood Control District
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLERP	Spineflower Enhancement and Relocation Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
Task Force	Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Task Force
TMDL	Total Maximum Daily Loads
UCFCC	United Nations Framework Convention on Climate Change
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management
VSOI	Visual Sphere of Influence
Wash Plan	Upper Santa Ana River Wash Land Management and Habitat Conservation Plan
WPLT	Western Pluvial Lakes Tradition
WQMP	Water Quality Management Plan
WSPA	Santa Ana River Woolly-star Preservation Area

EXECUTIVE SUMMARY

INTRODUCTION

The Proposed Action described in this document is the exchange of ownership of approximately 315 acres of Bureau of Land Management (BLM) land with approximately 320 acres of land owned by the San Bernardino Valley Water Conservation District (District), and the amendment of the South Coast Resource Management Plan (SCRMP) to support this exchange. Additional lands, including up to 85 acres of BLM lands (federal lands managed by the BLM) and up to 60 acres of District land, will be exchanged if necessary to equalize values. The lands proposed for exchange are located within the Santa Ana River Wash in southwestern San Bernardino County, California. This Environmental Impact Statement (EIS) analyzes the proposed land exchange and SCRMP Amendment, and serves as the environmental document addressing the Proposed Action.

For purposes of this Environmental Impact Statement (EIS), BLM lands proposed for disposal through exchange (federal lands selected for acquisition by the District) are called "Selected Lands." Lands offered by the District to the BLM in exchange for the Selected Lands are called ―Offered Lands." Selected and Offered Lands contain both ―core exchange" parcels and ―equalization" parcels. Core exchange parcels are lands minimally necessary to implement the Wash Plan. Equalization parcels are additional lands that may be exchanged, if necessary, to balance the appraised value difference between the BLM and District lands offered for exchange. The BLM's Selected Lands include 315 acres of core parcels and 85 acres of equalization parcels. The District's Offered Lands include 320 acres of core parcels and 60 acres of equalization parcels. In this EIS, the ―Project Area" refers to all BLM land within the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan boundary (Wash Plan Area), and District Offered Lands, including both core and equalization parcels of the Selected and Offered Lands.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE

This EIS has been prepared in compliance with NEPA (42 U.S. Code § 4331[1969]). Under NEPA, all federal agencies must conduct an environmental review for major federal actions significantly affecting the quality of the human environment (42 U.S. Code Section 4332). Since the BLM is the federal Lead Agency for the preparation of this EIS, this EIS follows BLM's NEPA documentation requirements and procedures for environmental clearances that conform to the Council on Environmental Quality (CEQ) regulations governing NEPA (40 Code of Federal Regulations [CFR] 1500-1508). This EIS is intended to provide decision-makers, federal officials, responsible agencies, and the public with sufficient information to assess the potential environmental impacts that may be associated with the proposed land exchange and SCRMP Amendment, and all reasonable alternatives. The EIS also provides measures to avoid, minimize, and mitigate these potential impacts pursuant to 40 CFR 1502.14(f) and 1502.16(h).

PURPOSE AND NEED

Under CEQ guidance (40 CFR 1502.13), the purpose and need statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the Proposed Action.

A primary purpose of the exchange is for the BLM to dispose of isolated lands which have been previously degraded by mining activities within the Santa Ana River Wash ACEC, and in exchange, to acquire District lands with high habitat value adjacent to an existing ACEC parcel.

The exchange will allow the BLM to consolidate fragmented parcels with high-quality habitat, resulting in improved management of the ACEC. Lands acquired by the BLM through the proposed exchange would be given the ACEC land use designation. These lands would also become part of the planned multi-jurisdictional, multi-species Habitat Conservation Area (HCA) described in the 2008 Upper Santa Ana River Wash Land Management and Habitat Conservation Plan (Wash Plan).

Another primary purpose of the proposed land exchange between the BLM and the District is to assist in the implementation of the Wash Plan. Specific areas have been designated for habitat conservation, public services, recreation, transportation, utilities, and aggregate mining in the Wash Plan in order to balance ground-disturbing activities with habitat preservation and water conservation. The exchange would facilitate implementation of the Wash Plan and would allow the coordinated development of multiple resource uses within the Wash Plan Area. Lands acquired by the District would be managed in accordance with the Wash Plan. Of the 315 acres of acquired lands, approximately 259 acres would be leased for mining and approximately 56 acres would be set aside for habitat conservation. As a result of the exchange, the District would be required to seek a conservation easement for acquired properties that are located within areas designated for habitat conservation under the Wash Plan.

In summary, the Proposed Action would fulfill the need for a comprehensive solution to competitive land uses within the Wash Plan Area by preserving unique habitats under the BLM ACEC while allowing mineral development and other uses to occur in a responsible and coordinated manner.

PROPOSED ACTION AND ALTERNATIVES

This EIS analyzes two alternatives: (1) the No Action Alternative and (2) the Proposed Action. The Proposed Action would allow the BLM to exchange up to 400 acres of public lands located within the Santa Ana River Wash ACEC for up to 380 acres of District-owned lands in San Bernardino County, California, and would amend existing Santa Ana River Wash ACEC management prescriptions outlined in the SCRMP.

If no action is taken, the proposed land exchange would not occur and the SCRMP Amendment would not be necessary. Habitat preservation, mining, and water conservation activities, under current land use management practices, would continue to be fragmented throughout the Wash Plan Area.

Exchanging other BLM lands and reducing the size of exchanged lands were considered as alternatives to the Proposed Action, but were eliminated from further analysis for the reasons described in Section 2.2.1, *Alternatives Considered but Not Carried Forward*.

PUBLIC SCOPING

The Notice of Intent (NOI) to initiate the public scoping process was published in the *Federal Register* on April 26, 2004. In May 2004, two public scoping meetings were held to provide information and gather public opinion about the Wash Plan. The scoping process lasted 46 days and ended on June 11, 2004. Issues identified during public scoping included concerns related to threatened, endangered, and other special status species, mineral resources, water resources, recreation, noise, visual resources, cultural resources, land management, and traffic management.

SUMMARY OF IMPACTS

This EIS addresses potential environmental consequences, or impacts, that could result from the Proposed Action. The impact analysis and the conclusions made in this EIS are based on the review of information gathered from site reconnaissance, existing literature and studies, and from close coordination with the BLM and the District.

Table ES-1, *Summary of Effects from Proposed Action and No Action,* provides a summary of environmental elements that are evaluated in this EIS. These resource areas are further discussed in Chapter 3, *Affected Environment,* and Chapter 4, *Environmental Consequences,* of this document. Cumulative effects are addressed in Section 4.11*, Cumulative Effects*.

Table ES -1 Summary of Effects from Proposed Action and No Action

Environmental Element	Proposed Action	No Action Alternative
Air Quality	Some impacts would occur. Mining emissions would continue but would not result in direct violation of the federal, state, and local air quality standards. Following the exchange, in order for mining to occur on District-acquired properties, a discretionary process with state and local agencies is required. Further, implementation of standard SCAQMD regulations is expected to mitigate and minimize impacts from on-site and off-site air emissions. Impacts are detailed in Section 4.2.	Some impacts would occur. Mining operations would continue to comply with existing applicable permits and approvals, as well as SCAQMD regulations to mitigate and minimize impacts from on-site and off-site air emissions. Any mining expansion would be subject to a discretionary process with state and local agencies, with impact analysis, public review, and mitigation. Impacts are detailed in Section 4.2.
Geology and Mineral Resources	Some impacts would occur. No direct impacts are anticipated as a result of the land exchange. Should mining occur on Selected Lands following the exchange, mining would change the existing soil profile and would alter the physical, chemical, and biological characteristics of the native soils.	Some impacts would occur. Effects of fault rupture and ground shaking would be similar to the Proposed Action. There are potential impacts to mining operations due to landslides within the Offered Lands.

Table ES -1 Summary of Effects from Proposed Action and No Action		
Environmental Element	**Proposed Action**	**No Action Alternative**
	However, existing mining activities have already disturbed the Selected Lands with mining haul roads and activities. Individual mining reclamation plans would subsequently be required to assess and mitigate potential site specific environmental effects. Impacts are detailed in Section 4.3	Current aggregate mining activities are reaching the end of available mineral reserves. The No Action Alternative does not allow for expanded mining activities. Loss of mineral resources may result from of the No Action Alternative. Impacts are detailed in Section 4.3.
Hydrology	Some impacts would occur. Existing hydrological conditions are such that there is the potential for flooding, which may have some beneficial effects for habitat stabilization but may have negative effects to subsequent use of the Selected Lands. Should mining operation continue on the lands which are within the 100-years FEMA Flood Zone Map, it is anticipated that there would be two areas where storm flows would overflow or break out of their normal channel courses. These flows may overtop the banks just west of Orange Street-Boulder Avenue and may inundate the mining area. Placement of structures within a 100-year flood hazard area that would impede or reduce flood flows would reduce the effects to the downstream peak flow/floodplain. Hydrological impacts may remain if potential indirect effects to peak flow/floodplain cannot be overcome by reasonable mitigation or design, construction, and maintenance practices. Impacts are detailed in Section 4.4.	Some impacts would occur. The ability of the District to maximize groundwater recharge would be limited. The BLM ACEC land (Section 10) is susceptible to inundation during occurrence of a flood event because the area is located within FEMA's 100-years Floodplain Zone. Impacts are detailed in Section 4.4.
Biological Environment	Some impacts would occur. Some impacts to biological resources would continue, but would not adversely affect protected species. By consolidating mining activities and prohibiting mining activities within the bulk of the Wash Plan area, the Proposed Action is anticipated to increase habitat and species protection and the preservation of natural habitat resources. Impacts are detailed in Section 4.5.	Some impacts would occur. The viability of protected species would continue to degrade due to continued and increased fragmentation of the managed habitat Wash Plan Area. Impacts are detailed in Section 4.5.
Land Use Planning / Recreation	Some impacts would occur. The Proposed Action would result in a change of land use pattern. Undeveloped open land designated for water recharge would be offered to BLM for habitat conservation. Undeveloped natural habitat	Some impacts would occur. Incompatible land uses would remain fragmented, including water conservation and habitat preservation. Surface mining land uses would be restricted to

Table ES -1 Summary of Effects from Proposed Action and No Action		
Environmental Element	**Proposed Action**	**No Action Alternative**
	would be acquired by the BLM to be managed under the ACEC. Selected Lands to be disposed of to the District will be converted from habitat preservation lands to mining on Section 10. The Wash Plan would provide linkages between the planned trails for the cities of Redlands and Highland. Impacts are detailed in Section 4.6.	permitted areas. Impacts are detailed in Section 4.6.
Socio-economics	Some beneficial impacts would occur. Additional aggregate resources, currently on BLM lands, would become available for mining as those lands become privately-owned. Beneficial impacts would occur as mining operations would persist over a longer period of time. Impacts are detailed in Section 4.7.	Some impacts would occur. Potential economic gains from development of mineral or energy resources would be: (1) limited by the reduced access to, or other restrictions on, valid existing rights; or (2) not realized, as development of acquired mineral rights would be precluded in accordance with the terms of the BLM SCRMP. Impacts are detailed in Section 4.7.
Transportation Systems and Traffic	Some impacts would occur. This alternative would result in indirect changes to the existing transportation environment. There would be increased traffic activity from the proposed expanded mining operation, the land exchange however would not directly result in increased traffic. The traffic effects from the Proposed Action would not be greater than without the implementation of the Proposed Action. Impacts are detailed in Section 4.8.	No impacts are anticipated. Traffic volume would fluctuate with mining operations, but would likely remain below established standards. Impacts are detailed in Section 4.8.
Visual Resources	Some impacts would occur. Because the land exchange would not result in a change in visual resource management (VRM) classification, it is not anticipated that impacts to visual resources or aesthetics would be impacted. Class III landscape (under the VRM classifications) allows changes to the landscape character that may begin to attract attention but should not dominate the visual setting. Selected Lands are located adjacent to the existing mining operations. The land exchange would consolidate disturbed land in one area, which would reduce adverse visual effects. Impacts are detailed in Section 4.9.	Some impacts would occur. Current mining operations will continue to change the landscape. There would be no change to existing visual resources. There would not be an opportunity for the potential positive visual impacts associated with consolidating the less disturbed BLM-administered public land. Impacts are detailed in Section 4.9.
Cultural	Some impacts would occur.	Some impacts would occur.

Table ES -1 Summary of Effects from Proposed Action and No Action		
Environmental Element	**Proposed Action**	**No Action Alternative**
Resources	Direct impacts to resources related to the exchange are not anticipated; however, such resources may exist and future projects involving ground clearing activity would require monitoring and characterization of potential subsurface resources found. Impacts are detailed in Section 4.10.	Archaeological, historical, or traditional cultural resources listed in or eligible for the National Register of Historic Places (NRHP) would not be affected. Subsequent activities would be responsible for characterizing and mitigating as appropriate. Impacts are detailed in Section 4.10.

1.0 INTRODUCTION

1.1 OVERVIEW OF THE PROPOSED ACTION

The Proposed Action of the Palm Springs South Coast Field Office of the U.S. Department of the Interior, Bureau of Land Management (BLM) is to:

1. Exchange up to 400 acres of public lands located within the Santa Ana River Wash Area of Critical Environmental Concern (ACEC) for up to 380 acres of land owned by the San Bernardino Valley Water Conservation District (District) in San Bernardino County, California, and;

2. To amend the South Coast Resource Management Plan (SCRMP).

The land exchange and SCRMP Amendment are actions that would assist with implementation of the 2008 Upper Santa Ana River Wash Land Management and Habitat Conservation Plan (Wash Plan). The Wash Plan is a multi-jurisdictional land management strategy involving publicly and privately owned land within the Wash Plan area.

The proposed exchange and SCRMP Amendment would occur under the authority of the Federal Land Policy and Management Act (FLPMA) of 1976, as amended by the Federal Land Exchange Facilitation Act (FLEFA) of 1988, and 43 CFR 1610.

For purposes of this Environmental Impact Statement (EIS), BLM lands proposed for disposal through exchange (federal lands selected for acquisition by the District) are called "Selected Lands". Lands offered by the District to the BLM in exchange for the Selected Lands are called "Offered Lands". The proposed land exchange is further explained in Chapter 2, *Proposed Action and Alternatives*. In addition, there will be legislation introduced to clarify that earlier 1909 congressional withdraw of portions of both the Selected Land and the Offered Lands does not preclude the proposed exchange.

Under the SCRMP, public lands in the Santa Ana River Wash ACEC are not available for exchange or mineral material mining and processing; therefore, the Proposed Action requires an amendment to the SCRMP. As a result of this land exchange, Offered Lands acquired by the BLM would be added to the Santa Ana River Wash ACEC, in order to protect and enhance habitat for federally listed species, and for water conservation. Selected Lands would be allocated by the District for mining and mineral processing, habitat conservation, and water conservation in accordance with the Wash Plan. This EIS analyzes the proposed land exchange and SCRMP Amendment, and serves as the environmental document addressing the potential effects caused by the Proposed Action.

1.2 PURPOSE

A primary purpose of the exchange is for the BLM to dispose of isolated lands which have been previously degraded by mining activities within the Santa Ana River Wash ACEC, and in exchange, to acquire District lands with high habitat value adjacent to existing ACEC parcels. The exchange will allow the BLM to consolidate fragmented parcels with high-quality habitat, resulting in improved management of the ACEC. Lands acquired by the

BLM through the proposed exchange would be added to the Santa Ana River Wash ACEC. These lands would also become part of the planned multi-jurisdictional, multi-species Habitat Conservation Area (HCA) described in the Wash Plan.

Another primary purpose of the proposed land exchange between the BLM and the District is to assist in the implementation of the Wash Plan. The exchange would facilitate implementation of the Wash Plan and would allow the coordinated development of multiple resource uses within the Upper Santa Ana River Wash Plan Area (Wash Plan Area). Specific areas have been designated for habitat conservation, water conservation, recreation, transportation, utilities, and aggregate mining in the Wash Plan in order to balance ground-disturbing activities with habitat preservation.

The land exchange would result in a change of ownership and uses of the identified lands. BLM lands received as a result of the exchange would be designated as part of the existing Santa Ana River Wash ACEC and would also become part of the proposed multi-jurisdictional multi-species HCA which is identified in the Wash Plan. A parcel of BLM land currently in the ACEC would be transferred to the District and a portion of that land will be made available for the expansion of mining operations through lease by the District to mining companies.

1.3 NEED

Past mining and urban encroachment (i.e. roads, utilities and flood control facilities) have degraded suitable habitat within some of the existing Santa Ana River Wash ACEC. The portions of the ACEC that have experienced some level of disturbance in the past possess aggregate reserves that are suitable for future mining. A need exists to reconfigure the ownership of lands that are best suited for preserving unique habitat and to separate these lands from areas that are more suitable for mining. The land exchange would meet this need. BLM would dispose of disturbed, degraded, and land that is generally not well suited for habitat management, and acquire high quality, manageable habitat. The exchange of land would allow mining uses to occur on degraded habitat, and would allow the BLM to preserve and consolidate sensitive habitat areas for the improvement of the ACEC. These two needs are described in more detail below.

1.3.1 Preservation of Unique Habitats

Southern California‘s biodiversity has diminished as urban growth has caused wildlife habitat to become more fragmented, forming isolated small blocks of land and causing endangered species conflicts. There is an urgent need to preserve remaining biodiversity without halting urban development, aggregate mining, water conservation and other land uses. The federally listed endangered San Bernardino kangaroo rat (SBKR) is known to occur within the Wash Plan Area. The United States Fish and Wildlife Service (USFWS) has designated portions of the Wash Plan Area as critical habitat for the SBKR.

The BLM‘s Santa Ana River Wash ACEC was designated to protect habitat for two federally listed plants, the Santa Ana River woolly-star and the slender-horned spineflower. The existing ACEC contains 760 acres on three separate parcels. The BLM has identified the western-most ACEC parcel for exchange because it is generally degraded, contains limited

habitat, is rich in aggregate resources, and is located adjacent to existing mining operations. The BLM would, in turn, acquire District lands with high quality habitat values located adjacent to other ACEC lands and managed habitat. Thus, the proposed land exchange would consolidate various habitat parcels into one large contiguous area that would provide enhanced movement connectivity, and protection for the preservation of the Santa Ana River woolly-star, the slender-horned spineflower, and the SBKR.

1.3.2 Consolidation of Aggregate Mining Resources

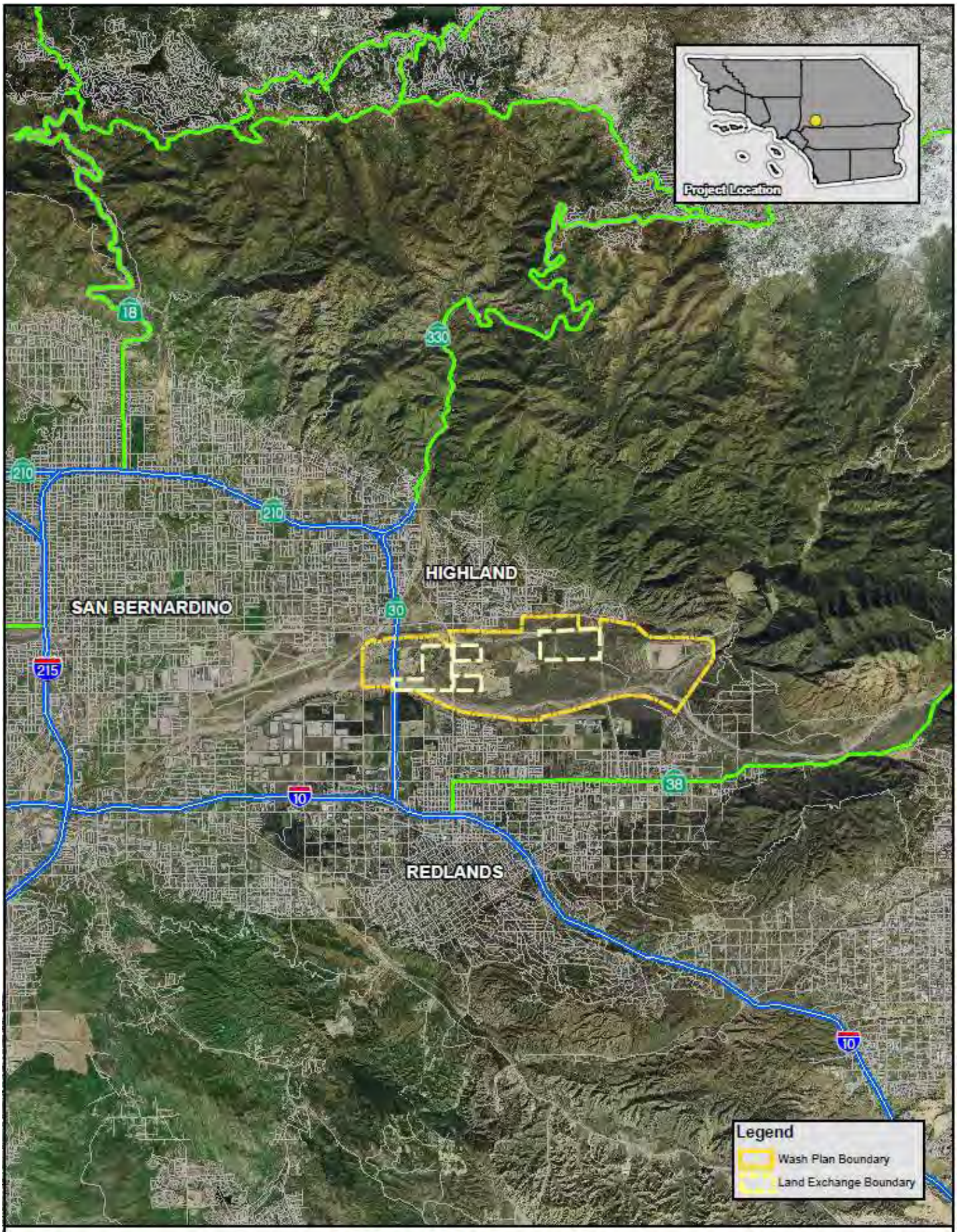
Aggregate mining has occurred within the Wash Plan Area for several decades. Mining within the Wash Plan Area generally occurs on private land owned by Robertson‘s Ready Mix (Robertson‘s) mining company and on land leased from the District; however, unpermitted mining encroachment has occurred on some of the BLM Selected Lands. The Selected Lands are bordered on three sides by existing mining on private lands, and contain aggregate resources that could be mined. The land exchange would allow consolidation of aggregate mining in areas of existing disturbance adjacent to current mining operations and away from neighboring residential areas.

Consolidation of mining activities would reduce the habitat fragmentation that currently exists due to the scattered ownership pattern of federal and private lands within the Wash Plan Area. The Wash Plan Area contains land managed for the protection of the Santa Ana River woolly-star and the slender-horned spineflower in an area designated as the Woolly Star Preserve Area (WSPA). The WSPA, in conjunction with flood control lands and other BLM ACEC lands, creates continuity for habitat protection, critical mass of area for species survival, and connectivity for wildlife movement. The land exchange would also consolidate federal ownership, improve administration efficiency and increase habitat preservation by combining the Offered Lands with an existing ACEC parcel.

Mining surrounding the Selected Lands currently provides a limitation to the long-term effectiveness of habitat management on Selected Lands. This limiting factor makes these BLM lands more appropriate for mining use as indicated in the Wash Plan. Offered Lands are more suitable for habitat preservation and would allow for better, more comprehensive, long-term habitat management. In addition, the consolidation of habitats would contribute to the elimination of current habitat fragmentation.

1.4 PROJECT SETTING

The Selected and Offered lands are located in the Wash Plan Area which is located in San Bernardino County, California (refer to Figure 1.1, *Regional Vicinity Map*). The Wash Plan Area contains both public and private lands supporting a variety of functions. The principal landowners in the area are the District, the San Bernardino County Flood Control District, the BLM, the City of Highland, the City of Redlands, and Robertson‘s Ready Mix. The Wash Plan Area in which the parcels proposed for exchange are located generally begins at the mouth of the Santa Ana River Canyon at Greenspot Road and extends westward for approximately six miles to Alabama Street. Greenspot Road forms the northern and eastern boundary of the Wash Plan Area and the south bluffs of the Santa Ana River Wash generally form the southern boundary.



0 1 2 Miles
Scale 1:135,000

SBVWCD/BLM LAND EXCHANGE
REGIONAL VICINITY MAP

Figure 1.1

URS

1.5 HISTORY OF THE PROPOSED PROJECT

Competing land uses within the Wash Plan Area have been a concern for many years. The geology of the area provides superb percolation for recharging the groundwater basin with native Santa Ana River and Mill Creek water. The same geologic condition provides sand and gravel deposits that are defined by the State of California as being regionally significant for economic sustainability. The Wash Plan Area is also home to federally and state listed threatened and endangered species. Proposals for mining and excavation for water recharge basins potentially affect the habitats of protected species.

In 1993, mining companies submitted applications to local jurisdictions to mine on lands in the Wash Plan Area leased from the District. Several environmental issues caused delays in proceeding with the mining applications. In 1997, the mining company representatives and District were joined by the California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) in addressing important wildlife habitat concerns resulting from proposals for aggregate mining. Furthermore, there was concern that the land to be mined would disturb or eliminate the District's existing groundwater recharge basins and could impact the San Bernardino County Flood Control District (SBCFCD) facilities. Additionally, the Cities of Highland and Redlands wanted to improve roads and bridges in the Wash Plan Area and provide outdoor recreation opportunities for local and regional residents. A Wash Plan Task Force Committee (Task Force) was formed to devise a plan to balance the competition for land uses within the Wash Plan Area. The Task Force consisted of representatives from the two cities, the County of San Bernardino, the District, the BLM, mining companies, the SBCFCD, and other water and wildlife agencies.

After several meetings, the Task Force began preparation of a comprehensive land management plan to address competing land uses and provide for the protection of state and federally listed species. The plan concluded that mining expansion would best be consolidated into one area and that the portions of the BLM ACEC, which were previously disturbed or fragmented by adjacent mining activities, would be best suited for consolidation of mining activities. The Task Force also determined that some of the most intact, viable habitat areas were contained within lands owned by the District currently used for water conservation and leased for future mining. It was determined that these lands would be better suited for habitat conservation.

On November 12, 2008, the District adopted the Upper Santa Ana River Wash Land Management Plan and certified the Environmental Impact Report (EIR) that was prepared for the Wash Plan to comply with State environmental review procedures. The EIR analyzed the environmental impacts of the Wash Plan and the proposed management of mining, habitat conservation, flood control, water recharge and conservation, traffic and infrastructure improvements, and public recreation. The proposed land exchange between the BLM and the District is an implementation action of the Wash Plan. The environmental consequences of the land exchange and the associated SCRMP Amendment are analyzed in this EIS.

The EIR can be reviewed, in its entirety at www.sbvwcd.com, under the heading –Upper Santa Ana River Was Land Management Plan Environmental Impact Report (EIR), or at any

time during normal business hours at the San Bernardino Valley Water Conservation District offices, at 1630 West Redlands Boulevard, Suite A, Redlands, CA 92373.

1.6 EIS PROCESS

The objective of this EIS is to inform the BLM and the District decision-makers, representatives of other affected/responsible agencies, the public, and other interested parties of the potential environmental consequences that may be associated with the approval and implementation of the Proposed Action. This EIS will examine the viability of the No Action Alternative and the Proposed Action Alternative and describes potential impacts relating to a variety of environmental issues and methods in which these impacts can be mitigated or avoided. This EIS has been prepared in accordance with National Environmental Policy Act (NEPA), 40 CFR Part 1500, the guidelines and regulations for NEPA as administered by the Council on Environmental Quality (CEQ).

The BLM is the federal Lead Agency for the preparation of this EIS in compliance with the requirements of NEPA, the CEQ regulation for implementing NEPA (40 C.F.R. 1500-1508), and the BLM NEPA handbook (H-1790-1). NEPA mandates that federal agencies consider the environmental consequences of its actions. When a federal agency determines that a Proposed Action may ―significantly affect the quality of human environment," preparation of an EIS is required (42 U.S.C. 4332 (2) (c)).

The EIS preparation process consists of a series of procedural steps to ensure an adequate and open analysis of environmental issues. The BLM NEPA Handbook specifically notes that when analyzing impacts, effects on future generations and on long-term productivity of resources and the irreversible and irretrievable commitment of resources should be considered as well as direct physical impacts to existing populations and resources. Impacts of all reasonable and feasible alternatives must also be analyzed since BLM must select a preferred alternative. The process provides and encourages opportunities for interagency coordination and public involvement.

A Notice of Intent (NOI) to prepare an EIS for the Proposed Action was published in the *Federal Register* on April 26, 2004 (Volume 69, Number 80). The NOI announced the preparation of an EIS to assess the land exchange between BLM and the District and the amendment of the SCRMP. Following the NOI, public scoping was conducted to solicit comments and identify issues to be addressed by the EIS (refer to Section 1.7.1, *Public Scoping* for additional information about the public scoping process).

This Draft EIS has been filed with the United States Environmental Protection Agency (EPA), and issued for public review and comment. Since the Proposed Action contains a land use plan amendment, following BLM's procedures, the public review period for the Draft EIS will last at least 90 days from the date the Draft EIS is transmitted to the EPA. Depending on the amount of comments received and any additional analysis required, the BLM will either select or revise the preferred alternative, if necessary. The BLM will then issue the Final EIS. After the Final EIS is released, the BLM will circulate the Final EIS for at least 30 days prior to making a decision on the Proposed Action. The 30-day time period for public review of a Final EIS is measured from the date of the publication in the *Federal Register*. The BLM may adopt an EIS only after it determines that the EIS meets the

standards for EIS adequacy under NEPA. After the EIS has been adopted, the BLM will make a decision on the Proposed Action, which will not be made until 30 days after EPA has published the notice that the Final EIS has been filed.

After preparing and adopting the EIS, and after making a decision on the Proposed Action, the BLM will issue a Record of Decision (ROD) explaining why the agency has taken a particular course of action.

1.7 DECISION FRAMEWORK

1.7.1 Public Scoping

An NOI for the BLM to prepare an amendment to the SCRMP for modifications to the Santa Ana River Wash ACEC and to execute a land exchange with the District was published on April 26, 2004 in the *Federal Register*. The NOI initiated the public scoping process and announced public scoping meetings for the EIS that were held during April and May of 2004. Additionally, the NOI provided supplementary project information, BLM contact information for commenting, and a list of the predominant issues.

The public scoping process was used to actively obtain input from the public and interested federal, state, tribal, and local agencies regarding the Proposed Action. Information received during scoping assisted the BLM and the District in identifying potential environmental issues, impacts, project alternatives, and mitigation measures associated with the Proposed Action. The process provided a mechanism for focusing and clarifying the issues to address in the Draft EIS.

Predominant issue areas identified during public scoping included: threatened, endangered, and other special status species; mineral resources; water resources; recreation; visual resources; cultural resources; land management; and traffic management.

Comments from the scoping period are compiled in Appendix D, *Scoping Comments,* of the Draft EIS and in the Wash Plan EIR, and are part of the official Administrative Record for this Proposed Action. The comments generated during this scoping period are summarized in Section 5.1, *Public Involvement and Scoping*. Furthermore, Table 5.3, *Index of Comments* identifies the primary issues of concern and refers to the corresponding section where the issues are addressed in the EIS.

1.7.2 Planning Issues

A wide range of issues were identified and evaluated during project development and the public scoping period. Issues relating to the following environmental elements identified to have potential direct and indirect effects from the Proposed Action are evaluated in Chapters 3 and 4 of this document (refer to Table ES-1, *Summary of Effects from Proposed Action and No Action* for a summary of the potential impacts to these resources).

- Air Quality
- Geology and Mineral Resources
- Socioeconomics
- Transportation Systems and Traffic

- Hydrology and Water Quality
- Biological Resources
- Visual Resources
- Cultural Resources

Planning issues relating to other environmental elements were also evaluated in the planning process, but were assessed to have minor or no direct effects from the Proposed Action. These environmental elements are identified below in Table 1.1, *Planning Issues,* and are not analyzed further in this EIS.

Table 1.1 Planning Issues

Environmental Element	Proposed Action	No Action Alternative
Hazards and Hazardous Materials	No impacts are anticipated. No on-site conditions exist that may create an effect as a result of changing property ownership. Any subsequent clearing and grubbing of land would require appropriate characterization and disposal of any finds according to applicable state and federal regulations. No further analysis is included in this EIS.	No impacts are anticipated. No excavation would occur and historical debris within the Wash Plan Area would be left in place. No further analysis is included in this EIS.
Paleontological Resources	No impacts are anticipated. Due to the nature of alluvial soils in the Wash Plan Area it is unlikely that paleontological resources would be encountered from activities permitted in the ACEC or the Wash Plan. No further analysis is included in this EIS.	No impacts are anticipated. Due to the nature of alluvial soils in the Wash Plan Area it is unlikely that paleontological resources would be encountered from activities permitted in the ACEC or the Wash Plan. No further analysis is included in this EIS.
Noise and Vibration	No impacts are anticipated. The land exchange itself will not generate any noise effects. Future mining activities will be subject to separate state and local permitting. No further analysis is included in this EIS.	No impacts are anticipated. Mining operations would continue and new, expanded mining activities may occur. Existing noise levels in the area range from 45.4 dBA to 69.2 dBA, and are generated by aggregate mining activities and traffic. Noise levels are below established local and regional standards. No further analysis is included in this EIS.
Environmental Justice	No impacts are anticipated. The land exchange would not create disproportionate adverse impacts to minority and/or low income populations. No further analysis is included in this EIS.	No impacts are anticipated. Implementation of the No Action alternative would not create disproportionate adverse impacts to minority and/or low income populations. No further analysis is included in this EIS.

Table 1.1 Planning Issues		
Environmental Element	**Proposed Action**	**No Action Alternative**
Utilities and Public Services	No impacts are anticipated. Current local programs and policies for public safety would remain in place. Existing levels of public services, such as fire and police, which serve the area, would be adequate to serve any additional mining activities in the Wash Plan Area that could indirectly result from the land exchange. No further analysis is included in this EIS.	No impacts are anticipated. There is no planned development that would include residential uses or employment generating uses, therefore additional public services are not needed. No further analysis is included in this EIS.
Water Quality	No impacts are anticipated. The land exchange would not affect or be affected by the current surface or groundwater quality. The land exchange will benefit the current groundwater recharge plans by maintaining available open land for future use and consolidating mining activities in the Wash Plan Area. Future mining operations will comply with local and state regulations regarding water quality, storm water pollution prevention, and runoff. No further analysis is included in this EIS	No impacts are anticipated. Mining operations would continue to comply with local and state regulations regarding water quality, storm water pollution prevention and runoff. No further analysis is included in this EIS.

1.8 RELATIONSHIP TO OTHER POLICIES, PROGRAMS, AND PLANS

This section evaluates the consistency of the Proposed Action and the No Action Alternative with several relevant policies, programs and plans, including state, county and local documents. In general, the Proposed Action would be consistent with applicable federal, state and local plans, policies and regulations. Key plans that have been evaluated in this Draft EIS which are applicable to the activities on the exchanged lands include the following:

- South Coast Resource Management Plan (SCRMP) – The Proposed Action is subject to the BLM SCRMP (approved June 1994). The SCRMP provides policy guidance to manage the resource values and multiple uses of BLM-administered public lands. The plan provides direction for the management of sensitive resources and open space, and balances the protection of these resources with potential uses such as recreation and mineral development. See Appendix E, Current ACEC Designation Under SCRMP for further information. The SCRMP will be amended to allow the exchange of existing ACEC lands currently designated for retention and to establish land use planning priorities and management prescriptions for the parcels to be acquired by the BLM Palm Springs Field Office through the proposed land exchange.
- Upper Santa Ana River Wash Land Management and Habitat Conservation Plan (Wash Plan) – The Wash Plan is a multi-agency, multi-property owner project that allows for the continued use of land and mineral resources while maintaining the biological and hydrological resources within the Wash Plan Area in an

environmentally sensitive manner. The following objectives established in the Wash Plan ensure an acceptable balance between aggregate mining activities, recreational opportunities, water conservation, habitat conservation, and other public services within the Wash Plan Area:

- Ensure the continued ability of the District to replenish the Bunker Hill Groundwater Basin with native Santa Ana River water using existing and potential future water recharge facilities in the Wash Plan Area;
- Ensure the continued ability of the SBCFCD to protect land and property by managing the floodwaters of the Santa Ana River and its local tributaries;
- Set aside and maintain habitat for sensitive, threatened, or endangered species populations in the Wash Plan Area, and prevent colonization by non-native plants and animals, as mitigation for impacts from mining, designation of areas for future roadways or water spreading facilities;
- Accommodate the relocation and expansion of aggregate mining quarries, to help ensure long-term availability of high quality aggregate reserves located within the Wash Plan Area for local and regional use, consistent with the Mineral Resource Zone-2 (MRZ-2) designation of reserves in this area, and do so on land adjacent to existing quarries, that have mostly been disturbed;
- Accommodate arterial roads and highways to provide safe modes of travel; and
- Provide trails for public enjoyment of the existing environment.

The Wash Plan contains nine major components designed to achieve the above-stated objectives. The proposed land exchange between the District and the BLM is one of the nine major components.

1.9 COMPLIANCE WITH RELEVANT FEDERAL AND STATE LAWS

This section evaluates the consistency of the Proposed Action and the No Action Alternative with several relevant federal and state laws. In general, the Proposed Action would be consistent with federal and state laws. Key laws that have been evaluated in this Draft EIS which are applicable to Proposed Action include the following:

- Multiple Use Mining Act of 1955 – The Multiple Use Mining Act of 1955 directs that any mining claim located after July 23,1955, shall not be used, prior to issuance of patent, for any purposes other than prospecting, mining or processing operations and uses reasonably incident thereto, and that such claims shall be subject to the right of the United States to manage and dispose of vegetative surface resources and to manage other surface resources, and the right of the United States, its permittees, and licensees, to use so much of the surface as may be necessary for such purposes or for access to adjacent land.
- Mining and Mineral Policy Act of 1970 – The Mining and Mineral Policy Act of 1970 directs the Federal Government to foster and encourage private enterprise in the development of economically sound and stable industries, and in the orderly and economic development of domestic resources to help assure satisfaction of industrial, security, and environmental needs.

- Federal Endangered Species Act (ESA) of 1973 – Through federal action and by encouraging the establishment of state programs, the 1973 ESA provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. The ESA authorizes the determination and listing of species as endangered and threatened; prohibits unauthorized taking, possession, sale, and transport of endangered species; provides authority to acquire land for the conservation of listed species, using land and water conservation funds; authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain active and adequate programs for endangered and threatened wildlife and plants; authorizes the assessment of civil and criminal penalties for violating the ESA or regulations; and authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the ESA or any regulation issued there under.

  Section 7 of the ESA requires federal agencies to ensure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or cause adverse modification their critical habitat.

- California Endangered Species Act (CESA) – The CESA (Fish & Game Code §§2050, et seq.) generally parallels the main provisions of the Federal Endangered Species Act and is administered by the DFG. Under CESA the term "endangered species" is defined as a species of plant, fish, or wildlife which is "in serious danger of becoming extinct throughout all, or a significant portion of its range" and is limited to species or subspecies native to California. CESA establishes a petitioning process for the listing of threatened or endangered species. The California Fish and Game Commission is required to adopt regulations for this process and establish criteria for determining whether a species is endangered or threatened. The California Code of Regulations, Title 14 §670.1(a) sets forth the required contents for such a petition. CESA prohibits the "taking"[1] of listed species except as otherwise provided in State law. Unlike its Federal counterpart, CESA applies the take prohibitions to species petitioned for listing (state candidates).

- Federal Land Policy and Management Act (FLPMA) of 1976 – The FLPMA governs the way in which the BLM manages public lands. In the FPLMA, Congress recognized the value of the public lands, declaring that these lands would remain in public ownership. Congress used the term "multiple use" management, defined as "management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people." The BLM is granted the ability to determine the distribution and use of public lands and is responsible for maintaining the upkeep of the land.

- Surface Mining and Reclamation Act (SMARA) of 1975 – Under the SMARA, the State Mining and Geology Board is required to classify land into mineral resource zones (MRZs) and designate for future use those areas that contain aggregate deposits that are of prime importance in meeting the region‘s future needs for construction

[1] According to the Summary of California Endangered Species Act, *available at* http://ceres.ca.gov/wetlands/permitting/cesa_summary.html, ~~"t~~ake" is defined as ~~"h~~unt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

quality aggregates. To obtain the authority to mine in a specific area, the SMARA requires that three main conditions are met by a surface mining entity prior to the initiation of mining. The three conditions include 1) obtaining a permit; 2) obtaining an approved reclamation plan; and 3) obtaining approval of the financial assurances for reclamation from the Lead Agency for the area to be mined. The primary objective of the SMARA is for each jurisdiction to develop policies that will conserve important mineral resources, where feasible, that might otherwise be unavailable when needed. Two Mining and Reclamation Plans have been prepared for the Selected Lands (one by Robertson's and one by Cemex). Both plans were updated in January 2008. The reclamation of mining activities on the Selected Lands would be in compliance with reclamation standards recommended by the SMARA regulations (Public Resources Code § 2710 et seq.) which is designed to address the need for a continuing supply of mineral resources and to prevent or minimize the negative impacts of surface mining to public health, property and the environment.

The Proposed Action is consistent with the Wash Plan, and therefore is also in conformance with the land use goals of local jurisdictions, which have been involved with the preparation of the Wash Plan.

Although the Cities of Redlands and Highland and County of San Bernardino do not have direct land-use jurisdiction over BLM lands, the proposed land exchange was evaluated for consistency with General Plan and zoning regulations (conformance with local land use plans was also evaluated in the 2008 Wash Plan EIR) since the Selected Lands, once they are in District ownership, will be subject to local land use control, except for direct water-related facilities and uses. Each of these agencies have been engaged in the Wash Plan effort, and have agreed to amend applicable provisions of their respective General Plans to coincide with the Wash Plan. Therefore, after the local plans are modified, they are anticipated to be consistent with the Wash Plan and the Proposed Action. For additional information on plans and policies affected by the land exchange and the SCRMP Amendment, refer to Section 3.6, *Land Use Planning and Recreation*.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

This section describes the Proposed Action to execute a land exchange between the BLM and the District and to amend the SCRMP regarding the Santa Ana River Wash ACEC.

2.1.1 Project Location

BLM Selected Lands proposed for exchange are located at Section 10, Township 1 South, Range 3 West, of the San Bernardino Base & Meridian (SBBM). District-owned core Offered Lands proposed for exchange are located at Section 12, Township 1 South, Range 3 West. The District's equalization parcel is located at Section 9, Township 1 South, Range 3 West, also within SBBM (see Figure 2.1, *Project Location Map*).

BLM Selected Lands are located east of State Route 30 (SR-30), south of Greenspot Road and north of the Santa Ana River and are bisected by Orange Street/Boulder Avenue. The District-owned Offered Lands are generally located in the eastern portion of the Wash Plan Area, south of Plunge Creek, with Greenspot Road to the north, and Cone Camp Road to the east.

2.1.2 Description of the Proposed Action

The BLM proposes to amend the 1994 SCRMP and to exchange fee title with the District to a maximum of 400 acres of BLM Selected Lands and a maximum of 380 acres of District Offered Lands in San Bernardino County California, subject to final appraisals. Section 206(b) of FLPMA requires that "the values of the lands exchanged […] shall be equal" (Appendix F, *BLM Land Exchange Procedure*). The Proposed Action would authorize the transfer of land ownership and management authority between the parties. The land exchange would be completed using an equal value approach based on the results of land value appraisal. The intent of the BLM and the District is to limit the exchange to 315 acres of BLM land for 320 acres of District property, subject to the results of the land appraisal. However, additional parcels are also considered in this EIS in the event that additional land may be required to equalize values between the two parties.

Selected and Offered Lands contain both "core exchange" parcels and "equalization" parcels. Core exchange parcels are lands minimally necessary to implement the Wash Plan. Equalization parcels are additional lands that may be exchanged, if necessary, to balance the appraised value difference between the BLM and District lands offered for exchange. For the purpose of this document, the term "Project Area" refers to all Selected and Offered Lands, which includes both core and equalization parcels. The Proposed Action would allow transfer of ownership of core exchange parcels and equalization parcels. The BLM would dispose of approximately 315 acres of core exchange Selected Lands to the District and would acquire approximately 320 acres of the core exchange Offered Lands. If the value of the BLM lands exceeds the value of the District lands in the core exchange, the District may offer all, or a portion of, 60 acres of additional equalization parcels to the BLM. Conversely, if the value of the BLM lands is less than the value of the District lands, the District may

acquire all, or a portion of, the 85 acres of BLM equalization parcels (see Figure 2.1, *Project Location Map*).

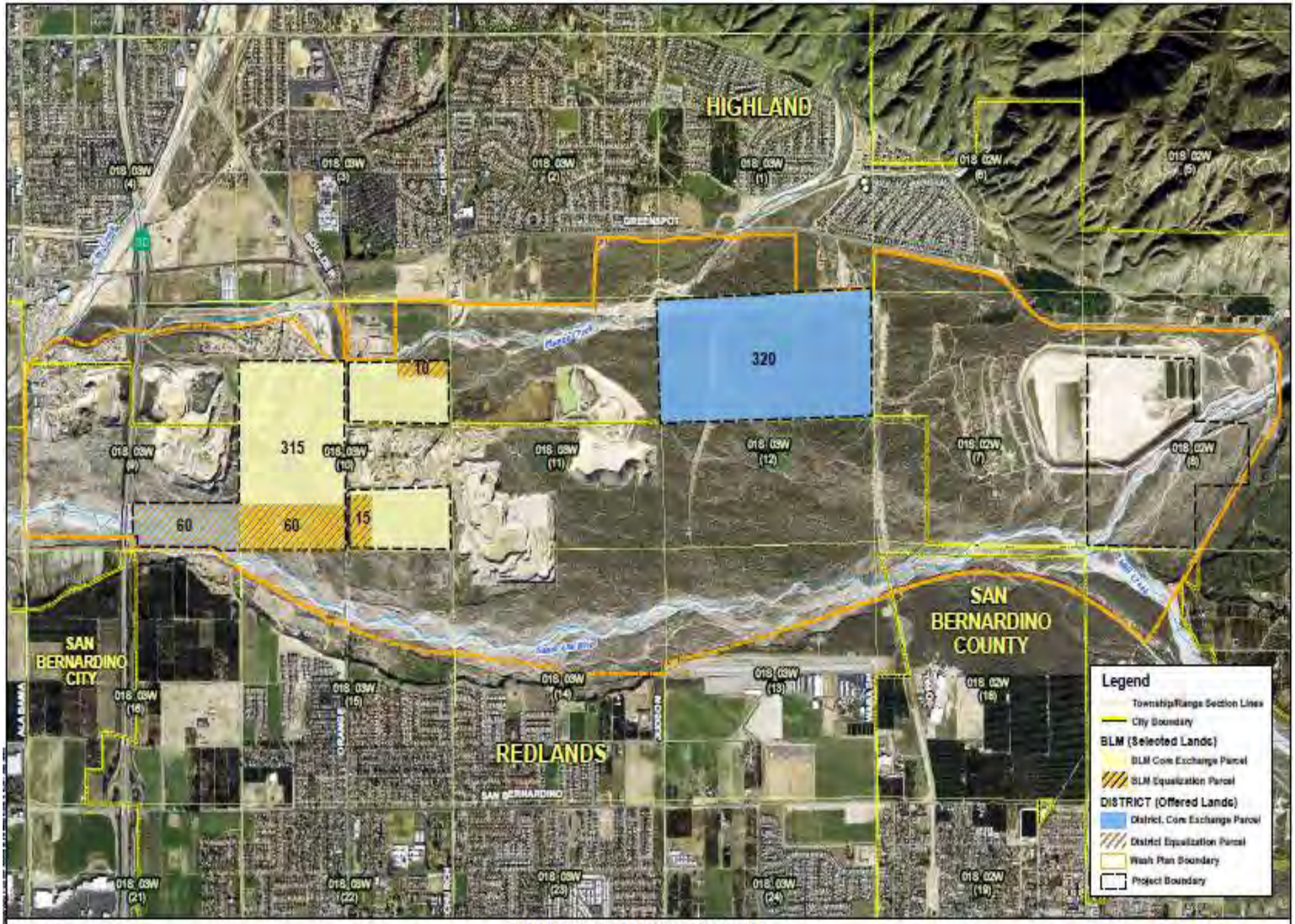
As such, a maximum of 400 acres of Selected Lands could be disposed of and the BLM could acquire a maximum 380 acres of Offered Lands through the Proposed Action. All core and equalization parcels will be analyzed as if they will be fully exchanged, however it is unlikely they will be exchanged in total.

Offered Lands acquired by the BLM through this land exchange will be added to the existing Santa Ana River Wash Area ACEC. Under existing District management policy, the Offered Lands are, for the most part, undeveloped and intended for future water conservation activities per the 1909 Act. A recharge basin, constructed in the early 1970s, known as "D Dike" exists in the westerly portion of the Offered Lands. The Offered Lands are currently leased to allow aggregate mining provided appropriate local, state, and federal permits are obtained. The lease would be reassigned to portions of the Selected Lands with completion of the land exchange. The proposed SCRMP Amendment would formally incorporate the Offered Lands acquired by the BLM into the Santa Ana River Wash ACEC. The SCRMP Amendment would also remove the Selected Lands acquired by the District from the BLM ACEC. This would allow expanded mining operations to occur on designated areas within the Selected Lands. In addition, the District will adopt a conservation easement on acquired Selected Lands located within areas proposed for habitat conservation by the Wash Plan (see Figure 2.2, *District Conservation Easement*).

As part of the Proposed Action, but an isolated action from the land exchange, the proposed SCRMP Amendment would designate the southern portion of Parcel 108-081[2] as part of the Santa Ana River Wash Area ACEC and remove the ACEC designation on 40 acres of BLM land occupied by the Inland Fish and Game Club for a shooting range (Parcel 108-081 is shown on the far right of Figure 2.1, *Project Location Map*). Designation of the southern portion of Parcel 108-081 will add management consistent with DHC along the Santa Ana River to protect the SBKR and Santa Ana woolly-star. Designation of the southern portion of Parcel 108-081 as part of the Santa Ana River Wash Area ACEC is intended to ensure that BLM management activities are provide protection for endangered species. Removal of ACEC designation on the 40 acres occupied by the shooting range will correct an oversight in the 1994 SCRMP that inadvertently assigned ACEC to this parcel in error.

The Proposed Action would allow the continued use of land and mineral resources while maintaining the biological and hydrological resources in the Wash Area. This would create a balance between aggregate mining activities, water conservation, and natural habitat for endangered, threatened, and sensitive species.

[2] The BLM utilizes a unique numbering system to number their parcels, as outlined in Appendix A of the SCRMP. The BLM parcel designation consists of a three digit prefix and three digit suffix. The prefix corresponds to a township and range coordinate. The first two digits of the suffix refer to the section in which the parcel is located. The last digit of the suffix will always be one unless there is more than one parcel within the section.



DISTRICT/BLM LAND EXCHANGE
PROJECT LOCATION MAP

Figure 2.1

URS

DISTRICT/BLM LAND EXCHANGE
DISTRICT CONSERVATION EASEMENT

Figure 2.2

URS

Under the 1994 SCRMP, three BLM parcels currently designated as the Santa Ana River Wash ACEC (Parcel 107-021, Parcel 107-101, and Parcel 107-121)[3] are managed for the protection of two plants federally listed as endangered species: the Santa Ana River woolly-star (*Eriastrum densiflorum ssp. sanctorum*) and the slender-horned spineflower (*Dodecahema leptoceras*). As currently managed under the SCRMP: 1) the ACEC is unavailable for mineral material sales, is closed to motorized vehicle use, and is unavailable for livestock grazing; and 2) the ACEC is a right-of-way avoidance area.

The Proposed Action would amend the SCRMP to allow the land exchange between the BLM and the District and would modify the existing Santa Ana River Wash ACEC management prescriptions to implement the Wash Plan. In addition, the Proposed Action would amend the SCRMP to execute BLM-desired management actions that are unrelated to the land exchange. Aspects of the Proposed Action that are unrelated to the land exchange include modifications to management of two parcels located within the Wash Plan Area: BLM will assign specific management prescriptions to Parcel 108-081 and will incorporate a portion of the parcel into the Santa Ana River Wash ACEC; and 40 acres of Parcel 107-101, originally inappropriately labeled as ACEC but used as a recreational gun range under a continuing long term lease, will be removed from the Santa Ana River Wash ACEC (Parcel 108-081 and Parcel 107-101 are shown on Figure 2.5, *BLM Parcels in Wash Plan Area* in Section 2.2.1).

In total, the proposed amendment to the SCRMP would:

1. Make up to 400 acres of BLM ACEC Parcel 107-101, currently designated for retention, available for disposal to the District.

2. Incorporate approximately 320 acres and potentially 60 additional acres, depending on appraisal values and the potential need for use of equalization properties, of Offered Lands acquired through the proposed land exchange into the Palm Springs-South Coast Resource Area and designate these acquired lands as part of the Santa Ana River Wash ACEC. The Offered Lands adjoin BLM ACEC Parcel 107-121.

3. Manage the entire Santa Ana River Wash ACEC according to the following management prescriptions:

    - The ACEC is unavailable for mineral material sales, is closed to motorized vehicle use, and is unavailable for livestock grazing.
    - The ACEC is a right-of-way avoidance area, excepting pre-existing rights-of-way that have been duly authorized and/or legally established.
    - The ACEC is available for existing water conservation facilities (a recharge basin known as ―Ð Dike" and its associated water conveyance facilities) pursuant to the Act of October 21, 1976 on Parcel 107-121, in the W1/2, Section 12. The ACEC is available for future water conservation facilities pursuant to FLPMA and/or S.8048 Act of Congress passed on February 20, 1909, as applicable, on Parcel 107-121, in the NE1/4, Section 12.

[3] BLM designated parcel numbers for the property per the SCRMP.

4. Add protection of the SBKR to the management goals for the Santa Ana River Wash ACEC.

5. Designate approximately 178 acres of undeveloped open space within the southern portion of Parcel 108-081 that has not been historically impacted by mineral extraction activities as part of the Santa Ana River Wash ACEC. [Note that this parcel is not part of the land exchange, but is addressed in the proposed SCRMP Amendment]

6. Manage the northerly portion of Parcel 108-081, consisting of approximately 102 acres within what is known as the Seven Oaks Dam Borrow Pit, as unavailable for mineral material sales and live-stock grazing. [Note that this parcel is not part of the land exchange, but is addressed in the proposed SCRMP Amendment]

7. Remove approximately 40 acres leased for a shooting range on Parcel 107-101 from the Santa Ana River Wash ACEC.[4] This portion of the parcel is leased under the Recreation and Public Purpose Act to the Inland Fish and Game Club. [Note that this land is not part of the land exchange, but is addressed in the proposed SCRMP Amendment]

Selected and Offered Lands are shown in Figure 2.3, *Assessor Parcel and Existing Ownership Map*. Proposed ownership after the exchange is displayed on Figure 2.4, *Proposed Ownership Map*. The legal descriptions of the BLM lands and the District's lands in the proposed exchange are shown in Table 2.1, *BLM Lands Proposed for Exchange (Selected Lands)* and Table 2.2, *District Lands Proposed for Exchange (Offered Lands)*. The final selection of parcels to be exchanged depends on the appraised values of the parcels.

Table 2.1 BLM Lands Proposed for Exchange (Selected Lands)

	BLM SCRMP Parcel #	APNs	Legal Description	Acres
Core Exchange Parcels	107-101	0291-111-03, 0291-121-01, 0291-112-03, 0291-122-02	S 1/2 NW 1/4 Sec. 10, T1S, R3W SW 1/4 Sec. 10, T1S, R3W S 1/2 NE 1/4 Sec. 10, T1S, R3W NE 1/4 NE 1/4 Sec. 10, T1S R3W	315
Equalization Parcels	107-101	0291-112-03, 0291-121-01, 0291-122-05, 0291-122-04, 0291-122-03	S 1/2 NE 1/4 Sec. 10, T1S, R3W SW 1/4 Sec. 10, T1S, R3W N 1/2 W 20 AC S 1/2 SE 1/4 Sec. 10, T1S, R3W N 1/2 S 1/2 W 20 AC S 1/2 SE 1/4 Sec. 10, T1S, R3W S 5 AC W 20 AC S 1/2 SE 1/4 Sec. 10,	85

[4] The BLM has included the removal of the ACEC designation from approximately 40 acres leased for a gun range on Parcel 107-101 as part of the Proposed Action in order to correct an oversight in the 1994 SCRMP designation. No environmental consequences are expected from this aspect of the Proposed Action because the gun range was in existence prior to the 1994 SCRMP; therefore, the removal of ACEC designation from this parcel is not evaluated any further in this EIS.

Table 2.1 BLM Lands Proposed for Exchange (Selected Lands)				
	BLM SCRMP Parcel #	APNs	Legal Description	Acres
			T1S, R3W	

Source: San Bernardino County Assessor 2008.

Table 2.2 District Lands Proposed for Exchange (Offered Lands)				
	BLM SCRMP Parcel No.	Assessor's Parcel No. (APNs)	Legal Description	Acres
Core Exchange Parcels	Not applicable	0291-151-01, 0291-151-02, 0291-151-05	NW 1/4 Sec. 12, T1S, R3W NE 1/4 Sec. 12, T1S, R3W Sec. 12, T1S, R3W	320
Equalization Parcels	Not applicable	0290-271-03	SE 1/4 Sec. 9, T1S, R3W	60

Source: San Bernardino County Assessor 2008.

The land exchange would be completed pursuant to the authority of Section 206 of FLPMA and regulations contained in 43 Code of Federal Regulations 2200. FLPMA requires that the values of lands to be exchanged be equal or made equal by a cash payment. Additionally, any cash equalization payment cannot exceed 25 percent of the value of the lands being transferred out of federal ownership and should be reduced to the smallest amount possible.

SBVWCD/BLM Land Exchange Accessor Parcel Map	
	APN
BLM Core Exchange Parcels	
1	0291-112-03
2	0291-111-03
3	0291-121-01
4	0291-122-02
BLM Equalization Parcels	
5	0291-121-01
6	0291-122-03
7	0291-122-04
8	0291-122-05
9	0291-112-03
District Core Exchange Parcels	
10	0291-151-00/01
11	0291-151-02/05
District Equalization Parcel	
12	0290-271-03

0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
ASSESSOR PARCEL AND EXISTING OWNERSHIP MAP

Figure 2.3

URS

0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
PROPOSED OWNERSHIP MAP

Figure 2.4

URS

2.2 ALTERNATIVES DEVELOPMENT

The CEQ NEPA Regulations (40 C.F.R. 1502.14) state that an EIS must consider a reasonable range of alternatives that could accomplish some or all of the objectives established for the Proposed Action. ―Reasonable" alternatives are those that could be carried out based on technical, economic, environmental, and other factors. Alternatives that do not meet some or all of the objectives or do not satisfy the Lead Agency's ―reasonableness" criteria need not be evaluated in the Draft EIS. Alternatives to the Proposed Action were developed utilizing an interdisciplinary team that included the District, BLM staff and cooperating agencies.

2.2.1 Alternatives Considered but Not Carried Forward

Alternatives involving the BLM's acquisition of other lands, increased acreage, or disposal of reduced acreage were not considered for analysis because they do not meet the purpose and need described in Section 1.2, *Purpose* and Section 1.3, *Need*. Alternatives that were eliminated from further analysis are summarized below.

2.2.1.1 Exchange of Other or Increased Amounts of BLM Lands

During the land selection process, BLM lands within the Wash Plan Area were considered as alternatives for the proposed land exchange (see Figure 2.5, *BLM Parcels in Wash Plan Area*). BLM coordinated with the District to identify parcels available that would help meet the goals of the Wash Plan. All parcels within the Wash Plan Area were evaluated for possible exchange. Table 2.3, *BLM Lands Considered for Exchange* outlines the issues encountered for each BLM parcel considered and evaluated for the land exchange.

Table 2.3 BLM Lands Considered for Exchange

BLM SCRMP Parcel No. *	Acres	Issues with Possible Exchange of Parcel
107-101	400	Existing ACEC parcel has been disturbed by mining activities and is surrounded by current mining activity. Exchange of this parcel would allow the consolidation of mining activities on already disturbed land.
107-021	40	Existing ACEC parcel is too small to meet the purpose and need. Parcel is isolated and would not provide opportunities for mining expansion/consolidation.
107-121	240	Existing ACEC parcel contains a large amount of undisturbed habitat. Exchange of this parcel would not maintain maximum continuity of habitat in the Wash area.
108-081	280	The northern portion of the parcel, approximately 102 acres, is located partly within the Borrow Pit used for the Seven Oaks Dam construction, and partly within the main course of the Santa Ana River. Parcel would not provide adequate area for mining expansion/consolidation

* BLM designated parcel numbers for the property per the SCRMP.

As described in the land use allocations in the SCRMP, the BLM has designated three parcels (107-021, 107-101, 107-121), totaling 760 acres in the Wash Plan Area, as the Santa Ana River Wash ACEC for protection of the Santa Ana River woolly-star and slender-horned spineflower.

Through the evaluation of BLM lands, it was determined that the exchange of other BLM Parcels 107-021, 107-121, and 108-081 would not achieve an acceptable balance between the mining and conservation uses. As described on Table 2.3, *BLM Lands Considered for Exchange*, Parcel 107-021, a 40-acre parcel located on the north central portion of the Wash Plan Area, would not satisfy the purpose and need because the parcel is too small and isolated from current mining operations to allow the consolidation and expansion of mining uses. Parcel 107-121, 240 acres located in the central portion of the Wash Plan Area, would not achieve the purpose and need due to the large amount of undisturbed and valuable habitats. Allowing mining operations to be located within Parcel 107-121 would further fragment the existing habitats and prevent habitat continuity for the Santa Ana River woolly-star, slender-horned spineflower, and the SBKR. Parcel 108-081 is isolated from current mining operations and would not contribute to the goal of consolidating current mining activities. In addition, the northern portion of the parcel is land that was used as a borrow pit during the construction of the Seven Oaks Dam, and would not provide adequate depth of materials for additional mining. Thus, Parcel 108-081 would not satisfy the purpose and need of the Proposed Action.

In short, the alternate parcels considered for the land exchange would not satisfy the specific goals of the Wash Plan for the reasons stated above. The use of these alternate parcels in the proposed land exchange would result in further fragmentation and loss of important Santa Ana River woolly-star, slender-horned spineflower, and SBKR habitats, and would inhibit the consolidation of mining activities within existing areas of disturbance adjacent to current mining operations within the Wash Plan Area.

2.2.1.2 Reduced Land Exchange Area

The BLM considered reducing the acreage of BLM Selected Lands as an alternative to the Proposed Action. This alternative, however, would not have met the goals of the Wash Plan because the reduced acreage would not be able to accommodate the consolidation and expansion of aggregate mining quarries in the Wash Plan Area. Furthermore, the reduced acreage of District Offered Lands would not be large enough consolidate managed habitat into one contiguous parcel to provide enhanced protection of unique habitat for the Santa Ana River woolly-star, slender-horned spineflower, and SBKR.

This alternative would not satisfy the goal of creating a balance between aggregate mining activities, water conservation, and habitat preservation for endangered, threatened, and sensitive species within the Wash Plan Area.

0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
BLM PARCELS IN WASH PLAN AREA

Figure 2.5

URS

2.2.2 Alternatives Carried Forward for Analysis

Two alternatives have been carried forward to be analyzed in this EIS. Alternative A, the No Action Alternative would allow the continuation of current, existing management on the Selected and Offered Lands. CEQ regulations require a no-action/–current management" alternative to be considered in every document prepared in satisfaction of NEPA.

Alternative B, the Proposed Action, would allow the exchange of lands minimally necessary to implement the Wash Plan, as well as additional lands that may be exchanged, if necessary to equalize values between the BLM and District land exchange. Also included as part of this alternative is an Amendment to the 1994 SCRMP.

2.2.2.1 Alternative A: No Action

Alternative A, also called the No Action Alternative, represents the continuation of current management practices and involves no land exchange. This alternative assumes that the Proposed Action would not occur and the Project Area would remain in its present condition. The BLM would not dispose of Selected Lands to the District nor acquire Offered Lands from the District. The BLM would not amend the 1994 SCRMP to allow the disposal of ACEC-designated lands. Current mining and water conservation occurring on Offered Lands would continue. Mining and water conservation activities would continue to be disjoined and separated throughout the Wash Plan Area and may conflict with habitat conservation.

Under the No Action Alternative, habitat conservation would continue on 339 acres of land owned by the BLM. Approximately 60 acres of District Offered Lands in Section 9 would remain undeveloped natural habitat. In addition, 320 acres of undeveloped District Offered Lands in Section 12 would be set aside for water recharge and conservation. Portions of the Offered Lands is currently under a long term lease for mining, although no active mining operations have occurred or are presently imminent, for such property. Given questions regarding the potential for permitting such property for actual mining, it is presumed that the Offered Lands would remain in their present state.

The No Action Alternative would not alter the activities that are currently taking place within the Selected and Offered Lands. Aggregate mining operations would continue producing an average of 4.5 million tons per year (MTPY) of aggregate materials. The total average MTPY is the average production numbers of both Cemex and Robertson's operations within the Wash Plan Area. Mining operators would be presumed to mine to completion the existing permitted mining, but no additional mining permitting is presumed. For the remainder of this EIS, the existing production tonnage of 4.5 MTPY is the environmental baseline condition and will be used for discussion and analysis.

2.2.2.2 Alternative B: Proposed Action

The Proposed Action consists of core exchange parcels minimally necessary to implement the Wash Plan and equalization parcels to equalize the monetary values of exchange lands, if necessary. Through the exchange, the BLM would dispose of fragmented, degraded, and unmanaged lands, and acquire and consolidate high quality manageable habitat.

The BLM would dispose of Selected Lands to the District and would acquire Offered Lands from the District. This exchange would allow the future expansion of mining activities on BLM Selected Lands which, in their current state, are partially disturbed by mining haul roads and are located adjacent to existing mining operations. The District would adopt a conservation easement or other similar land management tool on certain acquired Selected Lands identified in the Wash Plan for habitat conservation. District Offered Lands transferred to BLM ownership would be designated as part of the Santa Ana River Wash ACEC, providing protection of quality habitat for endangered species, and allowing water spreading operations in non-sensitive habitat areas (see Figure 2.6, *Proposed SCRMP Amendment Land Use Designation*).

Alternative B would not directly alter the activities that are currently taking place within the Selected and Offered Lands, although it would contribute to future implementation of the Wash Plan. As such, a reasonable foreseeable effect of the land exchange would be that aggregate mining operations would expand and could increase production up to 6.0 million tons per year (MTPY) of aggregate materials. The total estimated tonnage is the combined production numbers of both Cemex and Robertson‘s operations within the Wash Plan Area.

The BLM would convey ownership of approximately 315 acres of partially disturbed and fragmented BLM lands to the District. In return, the BLM would acquire approximately 320 acres of higher quality habitat, which would create a contiguous habitat linkage between existing BLM parcels located south and north of the Offered Lands in Section 12. If necessary, the 60 acres of District equalization parcels and the 85 acres of BLM equalization parcels may be used to equalize the values of the core exchange parcels. Refer to Table 3.7, *Existing Conditions* and Table 3.9, *Future Land Uses* in Section 3.6, *Land Use Planning and Recreation* for a comparison of land use between the No Action Alternative and the Proposed Action.

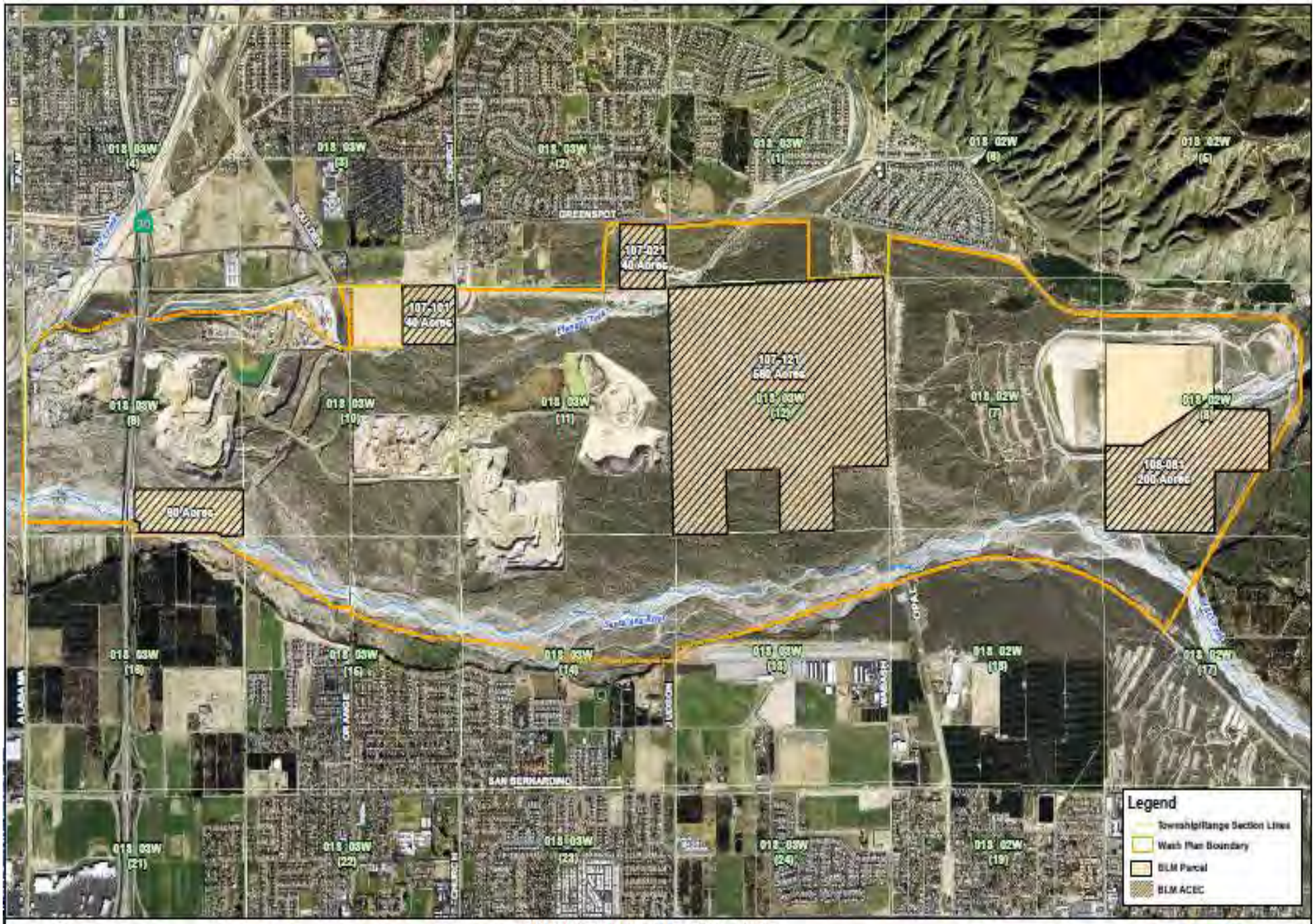
Alternative B includes a SCRMP Amendment that allows the land exchange to proceed and assigns appropriate use designations and management prescriptions to newly acquired land that would be administered by the BLM. The amendment would also designate the southern portion of Parcel 108-081 as part of the Santa Ana River Wash Area ACEC and remove the ACEC designation on 40 acres of BLM land occupied by the Inland Fish and Game Club for a shooting range.

Table 2.4 Alternatives Acreage Matrix		
Component	Alternative A	Alternative B
	No Action/Existing Conditions (acres)[1]	Proposed Action Future Land Uses (acres)
Water Recharge and Conservation	320	60
Undeveloped Natural Habitat	60[2]	0
Habitat Conservation[3]	339	461
Aggregate Mining and Processing	61	259

Source: Wash Plan EIR 2008.
Notes: Please refer to Table 3.7, Existing Conditions and Table 3.9, Future Land Use for these acreages under the No Action and Proposed Action Alternatives. The SCRMP is not included in the matrix as it only applies to federal land managed by the BLM and the matrix includes both federal and non-federal land in the comparison of uses.
1. Per Wash Plan EIR land use breakdown
2. District Land in Santa Ana River channel.
3. Habitat Conservation includes land in BLM ACEC, or conservation easement for habitat protection.

2.2.3 Agency Preferred Alternative

The BLM has identified Alternative B, the Proposed Action Alternative, as the ―Agency Preferred Alternative". The Proposed Action Alternative would allow the exchange of up to 400 acres of federal land administered by the BLM for up to 380 acres of non-federal land owned by the San Bernardino Valley Water Conservation District to assist in the implementation of the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan. The Proposed Action Alternative would allow the BLM to dispose of isolated lands which have been previously degraded by mining activities within the Santa Ana River Wash ACEC, and in exchange, to acquire District lands with higher habitat value adjacent to existing ACEC parcels. This would be accomplished through SCRMP Plan Amendment included as a component of the Proposed Action. The exchange will consolidate fragmented parcels with high-quality habitat, resulting in improved management of the ACEC. Lands acquired by the BLM through the proposed exchange would be added to the Santa Ana River Wash ACEC. These lands would also become part of the planned multi-jurisdictional, multi-species HCA described in the Wash Plan.



DISTRICT/BLM LAND EXCHANGE
PROPOSED SCRMP AMENDMENT LAND USE DESIGNATION

Figure 2.6

URS

3.0 AFFECTED ENVIRONMENT

This chapter describes the current environmental conditions of the proposed land exchange.

3.1 AIR QUALITY

This section has been prepared to evaluate the potential air quality impacts and mitigation measures for the Proposed Action. The following air quality analysis is based on information contained in the Wash Plan EIR. Detailed calculations used in the analysis can be found in Appendix D of the Wash Plan EIR.

3.1.1 Regulatory Setting

Federal Regulations/Standards

Pursuant to the Federal Clean Air Act (CAA) of 1970, the EPA established National Ambient Air Quality Standards (NAAQS). The NAAQS were established for six major pollutants, termed ~~"c~~riteria" pollutants. Criteria pollutants are defined as those pollutants for which federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health, and include: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2) ozone (O_3), fine particulate matter ($PM_{2.5}$), respirable particulate matter (PM_{10}), and sulfur dioxide (SO_2). In 1997, the EPA established a new 8-hour standard for O_3 of 0.08 parts per million (ppm) and subsequently strengthened this standard to 0.075 ppm in March 2008. The EPA revoked the one-hour O_3 standard on June 15, 2005. The EPA also established new standards for $PM_{2.5}$ in 1997. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 µg/m3 and revoked the annual standard PM_{10} on December 17, 2006.

State Regulations/Standards

The Mulford-Carrell Act of 1969 set the California Ambient Air Quality Standards (CAAQS), which are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards can be found in the air quality section of the Wash Plan EIR. In addition to the existing 1-hour O_3 state standard of 0.09 ppm, the state adopted an 8-hour O_3 standard of 0.070 ppm on May 17, 2006. Originally, there were no attainment deadlines for CAAQS; however, the California Clean Air Act (CCAA) of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the state to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all. The attainment plans are required to achieve a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the South Coast Air Basin (Basin).

Regional Standards Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established South Coast Air Quality Management District (SCAQMD) and other air districts throughout the state. The CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution-control measures to attain the federal standards in nonattainment areas of the state. The California Air Resources Board (CARB) is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan

The SCAQMD and SCAG are responsible for formulating and implementing the regional Air Quality Management Plan (AQMP) for the Basin. Every three years, the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The SCAQMD adopted the 2003 AQMP, which updates the attainment demonstration for the federal standards for O_3 and $PM_{2.5}$; replaces the 1997 attainment demonstration for the federal carbon monoxide (CO) standard, and provides a basis for a maintenance plan for CO for the future; and updates the maintenance plan for the federal nitrogen dioxide (NO_2) standard that the Basin has met since 1992. The 2003 AQMP proposes policies and measures to achieve federal and state standards for healthful air quality in the Basin. The SCAQMD adopted the 2007 AQMP on June 1, 2007, which it describes as a regional and multiagency effort (the SCAQMD Governing Board, CARB, SCAG, and EPA). State and federal planning requirements will include developing control strategies, attainment demonstration, reasonable further progress, and maintenance plans. The 2007 AQMP also incorporates significant new scientific data, primarily in the form of updated emission inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

Local General Plans

The related air quality goals and implementing policies contained within the San Bernardino County General Plan, the City of Highland General Plan, and the City of Redlands General Plan are applicable to the Proposed Action and can be found in the Wash Plan EIR.

3.1.2 Environmental Setting

The Project Area is located in the non-desert portion of the Basin, a geographic area that includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin encompasses the coastal plain and connects broad inland valleys and low hills. The SCAQMD administers air quality regulations in the Basin.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of a subtropical high-pressure system which holds air contaminants near the ground. During the summer, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino counties. The long daylight hours and sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen (NO_x) to form photochemical smog.

In the winter, strong, dry north or northeasterly winds known as the Santa Ana winds occur, dispersing air contaminants. The greatest pollution problems during this time are CO and NO_x, because of extremely low inversions and air stagnation during the night and early morning hours.

Winds in the Basin are predominantly of relatively low velocities, averaging about 4.0 miles per hour (mph). These low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin.

3.1.3 Regional Air Quality

Topographical features that affect the transport and diffusion of pollutants in the Project Area include mountain ranges to the northeast that prevent the transportation of pollutants. Air quality in the Basin generally ranges from fair to poor and is similar to air quality in most of Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

The Project Area is subject to the rules and regulations imposed by the SCAQMD. Since the SCAQMD reports to CARB, all emissions are governed by the CAAQS as well as the NAAQS. As discussed in Section 3.1.1, there are has established health-based AAQS for six criteria air pollutants: CO, Pb, NO_2, O_3, PM2.5, PM_{10}, and SO_2. Detailed descriptions of the six criteria pollutants can be found in the Wash Plan EIR.

For each of these pollutants, there is a primary standard (set to protect public health) and a secondary standard (set to protect the environment). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

3.1.4 Local Air Quality

The CARB coordinates and oversees federal and state air pollution control programs in California, oversees activities of local air quality management agencies, incorporates the AQMP for local air basins into a State Implementation Plan for EPA approval, and maintains air quality monitoring stations throughout the state in conjunction with the EPA and local air districts. The CARB has divided the state into 15 air basins based on meteorological and topographical factors of air pollution. Based on air quality data for the most recent three calendar years compared with the AAQS, data collected at these stations are used by the CARB and EPA to classify air basins using the following four classifications:

- Attainment: A pollutant is designated attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period;
- Nonattainment: A pollutant is designated nonattainment if there was at least one violation of an AAQS for that pollutant in the area;
- Nonattainment-transition: This is a subcategory of the nonattainment designation. An area is designated nonattainment-transitional to signify that the area is close to attaining the standard for that pollutant; and
- Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

The air quality data are also used to monitor progress in attaining air quality standards. The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the Project Area is in the City of Redlands, but only monitors O_3 and PM_{10}. The closest station that monitors most of the criteria pollutants is located in the City of San Bernardino. SO_2 is not monitored at most stations because there has been no exceedance of the federal standards in the past 10 years. However, the Fontana station monitors SO_2.

To summarize, the existing ambient air quality levels in the Project Area can be sorted into three categories:

1. Consistently below the relevant federal and state standards for NO2, SO2, and CO;
2. Regularly exceed state standards for O3 and PM10 and PM2.5; and
3. Regularly exceed federal standards for O3 and PM2.5.

3.1.5 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are another group of pollutants of concern. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome-plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important, in terms of health risk, are diesel particulate matter, benzene, formaldehyde, acrolein, 1, 3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death. The CARB has developed recommendations regarding the siting of new land uses with sensitive receptors near sources of TACs, such as freeways with heavy diesel truck traffic. The recommendations identify minimum separations between sources and receptors (CARB, 2005).

Determining how hazardous a substance is depends on many factors, including the amount of the substance in the air, how it enters the body, and how long the exposure lasts. One major way these substances enter the body is through inhalation of either gas or particulate. While many gases are harmful, very small particles penetrate deep into the lungs, contributing to a range of health problems. Exhaust from diesel engines is a major source of these airborne particles. The Office of Environmental Health Hazard Assessment (OEHHA) has determined that long-term exposure to diesel exhaust particulates (PM) poses the highest cancer risk of any TAC it has evaluated. Fortunately, improvements to diesel fuel and diesel engines have already reduced emissions of some contaminants, which, when fully implemented, will result in a 75 percent reduction in particle emissions from diesel-powered trucks and other equipment by 2010 (compared to 2000 levels), and an 85 percent reduction by 2020.

3.1.6 Global Climate Change

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change from increased levels of atmospheric greenhouse

gases (GHG) as a result of human activities, most notably the burning of fossil fuels for transportation and electricity generation. In 1992, the U.S. joined other countries around the world in signing the United Nations Framework Convention on Climate Change (UCFCCC) Agreement with the goal of controlling GHG emissions, which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, chlorofluorocarbons (CFC), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). As a result, the Climate Change Action Plan was developed to address the reduction of GHG in the U.S.

Currently, the EPA does not regulate GHG emissions resulting from motor vehicle emissions those pollutants that could contribute significantly to global warming. However, recently, in the case of *Massachusetts v. The Environmental Protection Agency,* the U.S. Supreme Court held that the EPA had a mandatory duty to enact rules regulating mobile emissions of GHG pursuant to the Federal Clean Air Act. The Court held that GHG do fit the definition of an air pollutant which causes and contributes to air pollution which may reasonably be anticipated to endanger public health or welfare. Accordingly, it appears that in the near future, the U.S. Federal Government through the EPA will promulgate regulations pertaining to emissions of GHG under the authority of the Federal Clean Air Act.

Although the federal government has not regulated emissions of GHG, the State of California has been proactive in the study of impacts of climate change. According to the California Energy Commission (CEC) California is a substantial contributor of global GHG as it is the second largest contributor in the U.S. and the sixteenth largest in the world (CEC 2006). During 1990 to 2003, California‘s gross state product grew 83 percent, while GHG emissions grew 12 percent. Although California has a high amount of GHG emissions, it has low emissions per capita.

The major source of GHG in California is transportation, contributing 41 percent of the state‘s total GHG emissions (CEC 2006). Electricity generation is the second largest generator, contributing 22 percent of the state‘s GHG emissions. Emissions from fuel use in the commercial and residential sectors in California decreased 9.7 percent over the 1990 to 2004 period (CEC 2006). The decrease in GHG could demonstrate the effectiveness of energy conservation in buildings (Title 24 requirements) and appliances.

The following California legislation dealing with the global climate change provides an overview of current regulatory environment in the state. Detailed summaries of this legislation can be found in the Wash Plan EIR.

- Assembly Bill 32 (AB 32)
- Assembly Bill 1493 (AB 1493)
- Assembly Bill 4420 (AB 4420)
- Senate Bill 375 (SB 375)

There are currently no direct federal rules or legislation pertaining to GHG emissions under the CAA. While state regulations have no direct bearing, they provide some reference to the evolvement of dealing with GHG emissions in California.

3.1.7 Existing Emission Sources

Existing emissions are generated by the following categories:

- **Off-Site Mobile Emissions**: Vehicle emissions resulting from traffic traveling to and from the northwest corner of the BLM Selected Land to the processing facilities outside the Project Area;
- **On-Site Mobile Emissions**: Vehicle and heavy-duty mobile equipment exhaust emissions; and
- **On-Site Fugitive Emissions**: Dust from heavy-duty mobile equipment used on site for quarry and loading operations, and wind erosion of disturbed areas, including topsoil stockpiles. Cemex, Robertson's, and the District implement policies to reduce the amount of emissions emitted from their respective activities within the Project Area in accordance with the many air quality policies contained in the general plans of the City of Highland and City of Redlands.

To combat the emission of PM_{10} into the air, the District and mining companies have implemented the following policies to reduce the amount of emissions within the parameters of the Wash Plan Area:

- Enforced speed limits of 15 miles per hour for service vehicles;
- Watering of road surfaces on a regular basis;
- Maintaining a smooth roadbed through grading and filling any potholes to reduce spillage;
- Shutdown of plant and quarry operations in winds over 25 mph;
- Shifts at non-peak traffic hours;
- Reduced power usage during peak consumption hours, when applicable (summer); and
- Spraying of water in active mining areas during removal and loading of haul trucks.

In addition, the following SCAQMD policies are recommended to control emissions and to meet the standards of Rules 403 and 1157:

- Paved entrances (driveways), scales, washing areas, and front office areas.
- Water-wash racks to wash truck sides and wheels and to moisten load;
- Rumble grates to reduce track-out;
- Loading of trucks per California Vehicle Code 23114 including covering of load or maintaining a 6-inch freeboard;
- Loading of some trucks from bins with drop chutes to reduce dust;
- Wet sweeping paved plant areas and surrounding paved public streets as needed to remove track-out every 8-hour shift or two times per day;

- Application of dust suppressants on other heavily used internal roads;
- Restricting unauthorized traffic on internal roads;
- Water spraying of stockpiles;
- Operate stationary plant equipment per SCAQMD permit conditions, including controlling dust with baghouses, water sprays, enclosures, and production limits; and
- Maintenance of the 20-foot-high landscaped berm on the west side of the Orange Street plant to reduce blowing dust.

3.2 GEOLOGY AND MINERAL RESOURCES

Geologic, mineral resources, soil conditions, and geologic hazards reviews were completed for the Project Area to assess the potential impacts associated with the proposed land exchange between the BLM and the District. The following sections summarize the geologic conditions of the Project Area.

3.2.1 Environmental Setting

The Project Area lies at the northeastern edge of the Peninsular Ranges Geomorphic Province, in the San Bernardino Valley. The geomorphology of the Peninsular Ranges is characterized by northwest/southwest-trending mountain ridges, valleys, and faults which run parallel and sub-parallel to the San Andreas Fault. As a result of the active tectonism of the area, the surficial geology of this province is typified by gently to moderately sloping igneous and metamorphic rocks of the Peninsular Ranges (SBVWCD 2008).

Geologic Features

The Project Area is bounded by the San Andreas Fault to the northeast and the San Jacinto Fault to the southwest. Both are part of an active fault system. Consequently, the area is distinguished by a series of horsts and grabens, characterized by high- and low-ground flanked by faults, respectively. These features are actively subsiding and filling up the basin with alluvial and colluvial material derived from the San Bernardino Mountains to the north and the San Timoteo Badlands to the south. These deposits form the alluvial plain, known as the Santa Ana River Wash, where the Project Area is located.

The Santa Ana River Wash is comprised of recent and older washes deposited by several stream channels and drainages that are derived from the San Bernardino Mountains to the north, several of which impact the Project Area. These channels include Santa Ana River, Mill Creek, City Creek, and Plunge Creek. Due to the irregular surface of the basin floor, the alluvial deposits vary in thickness and depth. Artificial fill associated with man-made earthen berms, roadways, and unprocessed stockpiles at mining sites, is found within the limits of the Project Area (SBVWCD 2008).

Tectonic Setting

The Project Area is located on the San Bernardino Block, which is a northwest-trending, wedge-shaped down-dropped crustal block situated between the San Andreas Fault and the San Jacinto Fault. This bedrock fault block extends from the Cajon Pass, approximately 20

miles northwest of the Project Area, where the San Andreas Fault and the San Jacinto Fault diverge to the Gorgonio Pass, and 40 miles to the east of the Project Area.

The San Bernardino Block has been downthrown several thousand feet on the southern side of the San Andreas Fault creating the escarpment of the San Bernardino Mountains. The Block is similarly downthrown on the northern side of the San Jacinto.

Major movement on the San Jacinto Fault predated the deposition of the younger alluvium, so the trace of the fault is not expressed at the surface.

Historical Seismicity

The core Project Area is located in a seismically active region between the San Andreas and San Jacinto Fault zones. Motion on both the San Andreas and San Jacinto faults is transferred laterally from one fault to another and then back again. This movement within the transfer zone may transfer on to other faults in the zone. The Alquist-Priolo Earthquake Fault zone for the San Andreas Fault encroaches on the northeastern corner of the Wash Plan Area. In addition to the San Andreas Fault zone, there are several unnamed faults near the Project Area (SBVWCD 2008).

3.2.2 Geologic Hazards

Fault Rupture

The San Andreas Fault is the major surface expression of the tectonic boundary between the Pacific and North American plates. The San Andreas Fault zone near the Project Area is composed of numerous en echelon fault strands that traverse the base of the San Bernardino Mountains (Figure 3.1, *Alquist-Priolo Fault Zones*). The San Bernardino Mountains segment of the San Andreas Fault consists of three paleotectonic strands (the Wilson Creek, Mission Creek, and Mill Creek Faults). These strands separate the San Bernardino Mountains Block, which is being actively pushed upward and over the San Bernardino Block. The Wilson Creek Fault is the oldest of the three strands and has generated about 40 kilometers of displacement.

In the San Bernardino area, the toe of the mountain delineates the present active expression of the San Andreas Fault. The Working Group on California Earthquake Probabilities has assigned a 28 percent probability that a major earthquake could occur on the San Bernardino Mountain segment of the San Andreas Fault between 1994 and 2024 (SBVWCD 2008).

The main expression of the San Jacinto Fault is approximately seven miles southwest of the Project Area. The San Jacinto Fault zone is a system of northwest-trending, right-lateral, strike-slip faults. The Working Group on California Earthquake Probabilities assigned a 37 percent probability that a major earthquake would occur on the San Bernardino Valley segment of the San Jacinto Fault between 1994 and 2024 (SBVWCD 2008).

Fault rupture is not a major hazard in the Project Area. The Project Area is located between the San Andreas and San Jacinto Fault zones. The Selected and Offered Lands are not within the San Andreas Fault zone. Only the northeast corner of the Wash Plan Area, outside of the Project Area, is crossed by the San Andreas Fault zone.

Surface Rupture

Surface rupture occurs when displacement or fissuring develops adjacent to a fault. Significant structural damage may result when a structure is located close to a surface rupture. Reduction of the potential damage due to surface rupture is difficult to achieve through structural design. The primary way to avoid surface rupture hazard is to set structures and facilities away from active faults, or avoid their construction in close relation to an active fault.

Ground Shaking

There is a very high potential for large ground motions to be felt within the Project Area, given its location within the seismically active area. The San Andreas Fault dominates the ground motion hazard for the Project Area. There are no major differences between the anticipated ground shaking within the Selected and Offered Lands. Peak levels of ground shaking could reach accelerations in excess of 1g (gravitational acceleration) in the event of an earthquake in the area. Probabilistic evaluations of ground shaking with a 10 percent probability of exceedance in 50 years are estimated between 0.82g and 1.1g, based on information obtained from the California Geological Survey‘s regional seismic hazard model (California Geological Survey, 2003; and CHJ, Inc., 2005). Such levels of ground shaking are generally similar to those experienced during the Northridge earthquake in 1994, where significant damage was incurred by older structures, while more recently designed structures fared much better, and commuter rail lines experience little or no disruption. Little to no damage is expected to occur within the Selected and Offered Lands because there are few, if any, structures other than those associated with the unpermitted and inactive mining operations on site.

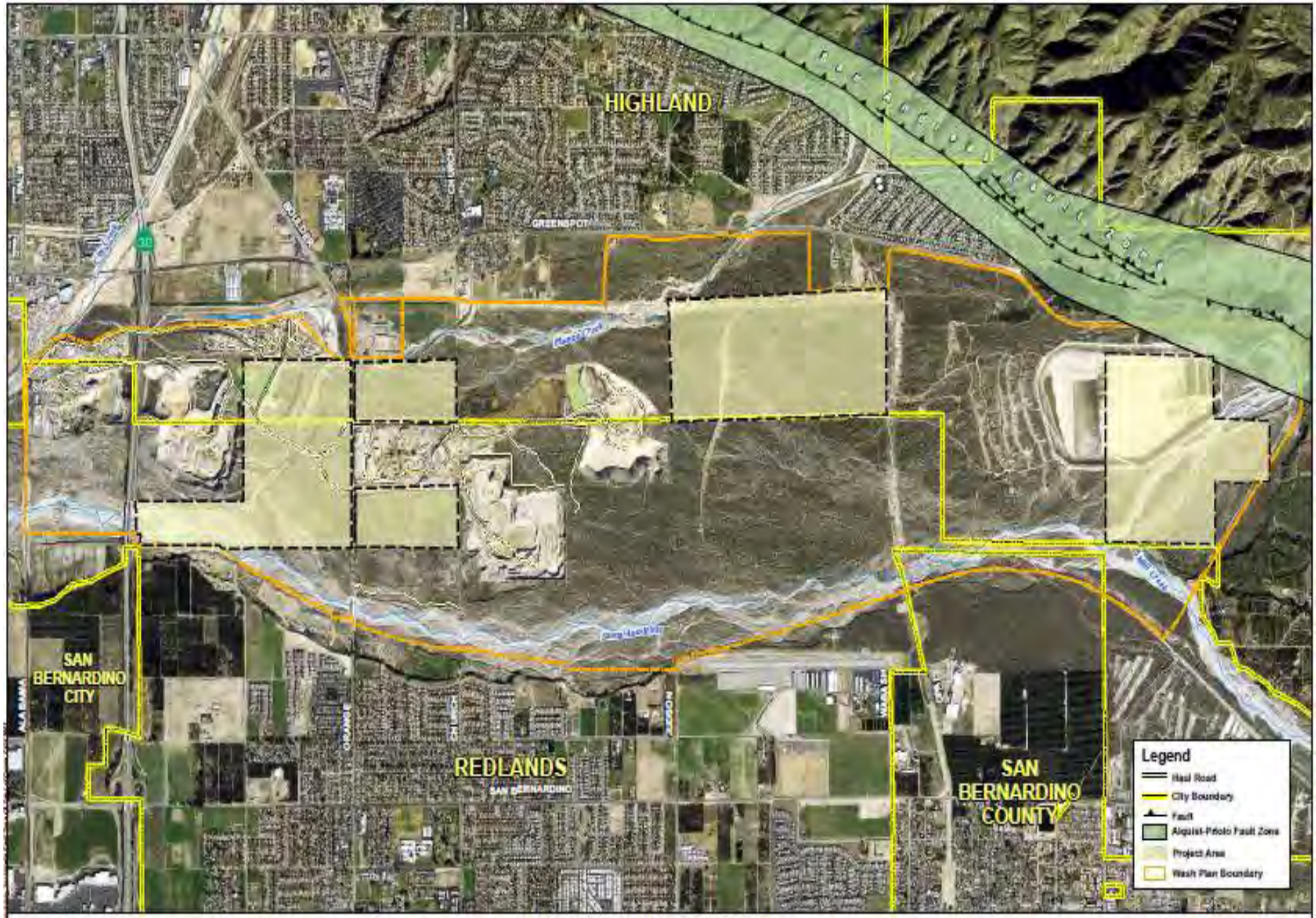
Seismically-Induced Settlements and Liquefaction

Seismically induced settlement in alluvial materials is the result of contractive volumetric strains in unsaturated soil (Stewart, 2000). Based on the presence of dry sandy alluvium and the potential for strong ground shaking at the site, seismically induced settlements could occur within the young deposits located within the Project Area. The settlements will likely be limited to the upper 10 to 20 feet (3.0 to 6.1 m) of alluvial soil at the site, and are expected to occur with relative uniformity in the alluvial areas (SBVWCD 2008).

Liquefaction occurs in saturated, poorly consolidated, fine-to-medium-grained soils in areas where the groundwater table is within 50 feet of the surface. Ground shaking can cause soil to suddenly lose strength and behave as a liquid. During such an event, an increase in interstitial pore-water pressure causes the resulting liquid mass to move upward through fissures in the soil. This can cause a water-soil slurry mixture to bubble onto the ground surface. The resulting features are commonly identified as ―sand boils," or ―sand blows." Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, or slumping.

The Project Area is located within the Santa Ana River Wash, an area of relatively shallow historical groundwater levels. Groundwater levels in the Project Area fluctuate as a result of changes in surface flows and regional changes in the extraction and recharge of groundwater. Based on information obtained from the California Department of Water Resources and

Western Municipal Water District, earlier groundwater levels were generally shallower than current levels. Current groundwater depths range from approximately 130 feet below ground level in the western portion of the Project Area, to approximately 100 feet below ground level in the center portion of the Project Area. Historic groundwater levels have been recorded as shallow as 30 feet below ground level.



DISTRICT/BLM LAND EXCHANGE
ALQUIST-PRIOLO FAULT ZONES

Figure 3.1

URS

Due to a combination of very excessively to excessively draining soils coupled with historically shallow groundwater for the Santa Ana River Wash, the San Bernardino County General Plan, as well as the General Plans of the cities of Redlands and Highland, show the exchange parcels as areas susceptible to liquefaction (see Figure 3.2, *Liquefaction Zone Map*).

Subsidence

Ground subsidence is the gradual settling or sinking of the ground surface, with little or no lateral displacement. Fissures, a common feature of subsidence, may develop in the form of cracks or separations. Ground subsidence may occur as a result of dewatering of peat or organic soils, dissolution of limestone aquifers, hydrocompaction, natural compaction, liquefaction, crustal deformation, subterranean mining, or withdrawal of fluids such as groundwater, petroleum, and geothermal vapor.

Due to decades of groundwater withdrawal, portions of southwestern San Bernardino County have subsided considerably in certain areas. This phenomenon has not been recognized to have occurred within the cities of Redlands and Highland. As a result, ground subsidence has not been recorded for the area within and near the limits of the Project Area (SBVWCD 2008).

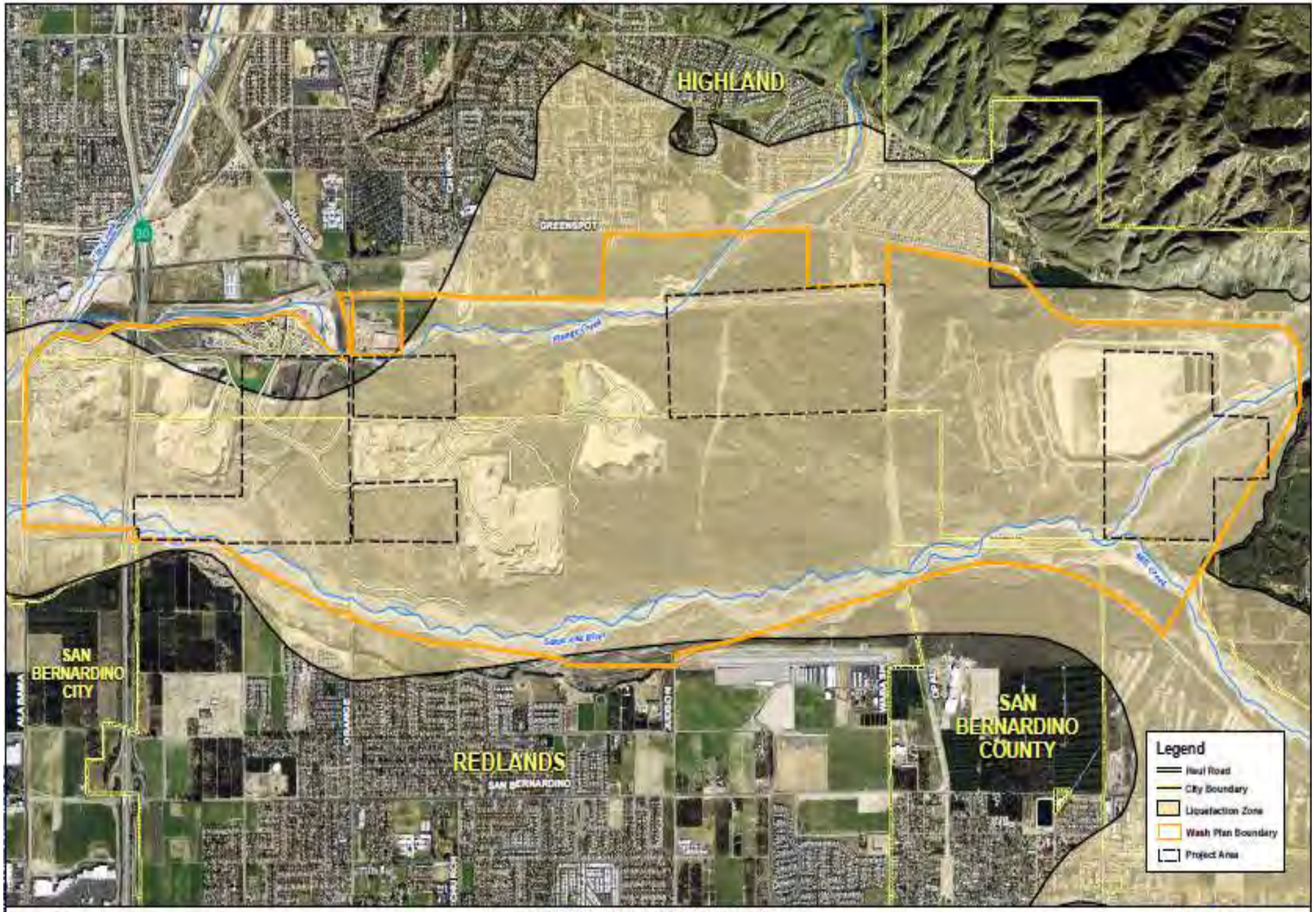
Collapsible and Expansive Soils

The Project Area is composed of interfingering layers of channel deposits which are made up of stony, loamy sands and sandy, gravelly detritus derived from the San Bernardino Mountains and San Timoteo Badlands. These soils are classified as very rapidly permeable with a low shrink-swell potential. They are somewhat excessively to excessively drained (Soil Survey of San Bernardino County, Southwestern Part).

Expansive soils generally contain a significant amount of fines (clays and silts) that can take on and release large amounts of water. The cities of Highland and Redlands do not identify expansive soils as a hazard within the Project Area (SBVWCD 2008).

Landslides and Slope Stability

The susceptibility of a geologic unit to landsliding is dependent upon various factors which primarily include: the presence and orientation of weak structures, such as fractures, faults, and clay beds; the height and steepness of the pertinent natural or cut slopes; the presence and quantity of groundwater; and the occurrence and intensity of seismic shaking (SBVWCD 2008). Landslides along undisturbed slopes are not considered a potential hazard within or near the Project Area due to the gentle slope of the topography that is indicative of the City of Redlands and the City of Highland, and the rapidly draining soil that comprises the Project Area. Regardless, slope failure is considered a potential hazard due to mining operations which have created steep, near-vertical slopes with heights of ± 30 feet. Movement from nearby faults may trigger slope failure and soil settlement from a near vertical condition down to as gentle as a 2:1 inclination (SBVWCD 2008).



0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
LIQUEFACTION ZONE MAP

Figure 3.2

URS

3.2.3 Soil Resources

Soil resources within the limits of the Project Area include Soboba and Riverwash Association soils (Lilburn Corporation, 2008). The Soboba Association soils form along the gentle to moderately sloping terrace banks of creeks and washes, within alluvial or stream outwash deposits. The soils are characterized by a surficial cover of cobbly, coarse, loamy sand over single grain, very gravelly and cobbly sand and loamy sand subsoils. The Riverwash Association soils form along the active channels, main washes, and creek beds. Consequently, Riverwash Association soils comprise river-deposited sands, gravels, cobbles, and stones. Seven specific soils can be found within the limits of the Project Area and are described in detail in the Wash Plan Geology and Soils Report, updated 2008 (Figure 3.3, *Soil Map*):

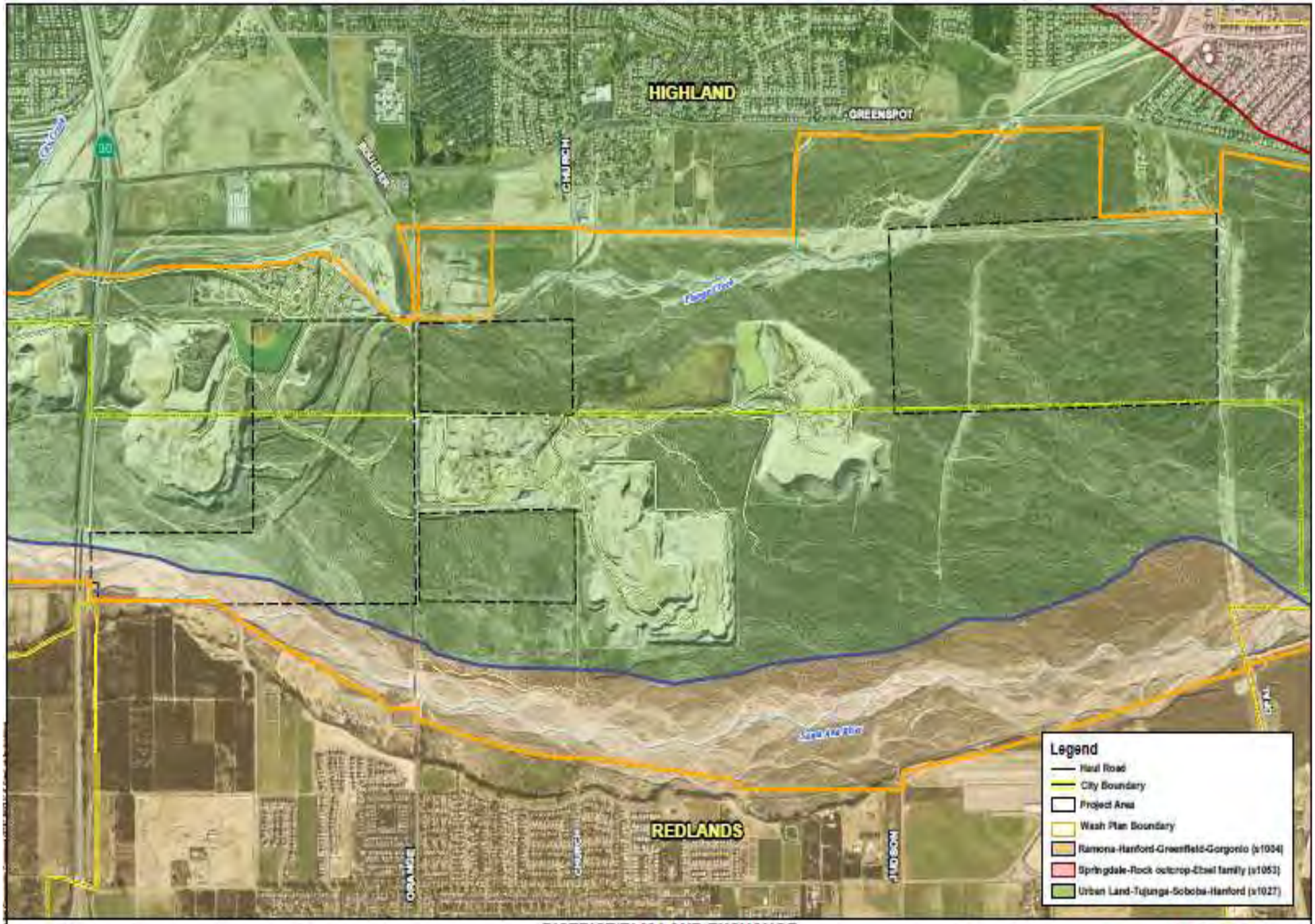
- Soboba stony loamy sand, 2 to 9 percent slopes (SpC);
- Hanford Coarse Sandy Loam, 2 to 9 percent slopes (HaC);
- Soboba gravelly loamy sand, 0 to 9 percent slopes (SoC);
- Soboba-Hanford Families Association;
- Hanford Sandy Loam, 0 to 2 percent slopes (HbA);
- Ramona Sandy Loam (RmC); and
- Tujunga Loamy Sand, 0 to 5 percent slopes (TuB).

These seven soils can be grouped into the following three families as depicted under Figure 3.3, *Soil Map*:

- Ramona-Hanford-Greenfield-Gorgonio (S1004);
- Springdale-Rock-Outcrop-Etsel (S1053); and
- Urban land-Tujunga-Soboba-Hanford (s1027).

3.2.4 Mineral Resources

In general, the Project Area is not within an area of high mineral resources other than that of aggregate resources. There is a very low potential for oil and gas based on the geologic setting of the area; however, high-quality sand, gravel, and aggregate resources are present in the alluvial deposits throughout the Project Area and the Santa Ana River Wash. The entirety of the Wash Plan Area, specifically the core exchange parcels and associated equalization parcels, has been classified as MRZ-2, which indicates the likelihood of significant mineral deposits (see Figure 3.4, *Mineral Resource Zone*). There are currently three active mining operations within the general area of the Selected and Offered Lands: Matich; Cemex; and Robertson's. No permitted and authorized mining activity is currently being pursued in the Project Area.

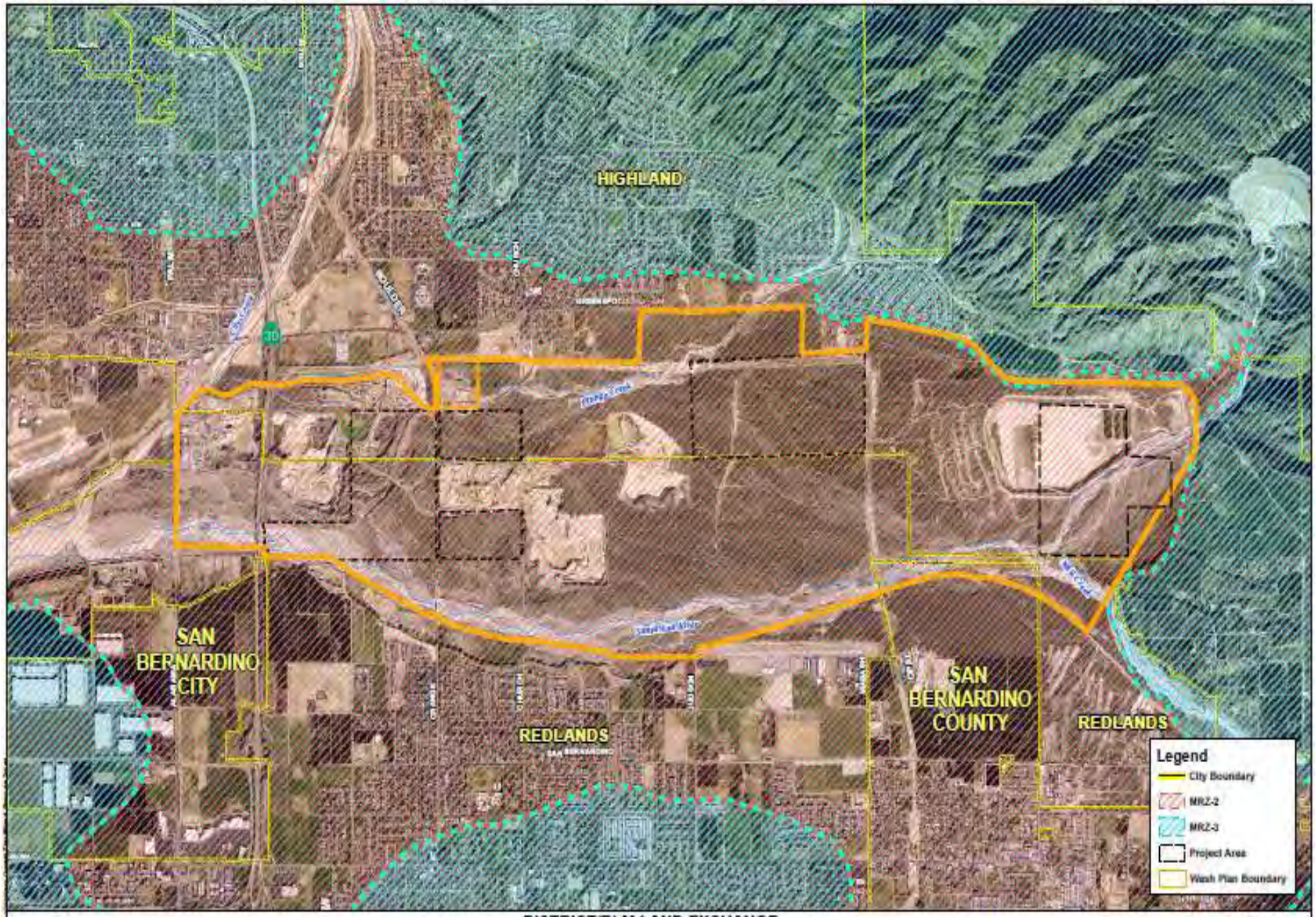


0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
SOIL MAP

Figure 3.3

URS



DISTRICT/BLM LAND EXCHANGE
MINERAL RESOURCE ZONE

Figure 3.4

URS

3.3 HYDROLOGY & WATER QUALITY

3.3.1 Regulatory Setting

Natural Flood Insurance Program Executive Order 11988, Flood Plain Management

The National Flood Insurance Program (NFIP) is responsible for flood control. The Flood Disaster Protection Act of 1973 requires the purchase of flood insurance by property owners who are located in special flood hazard areas and were being assisted by federal programs. Executive Order 11988 requires the United States Army Corps of Engineers (USACE) to: 1) provide leadership on reducing the hazards and risk associated with floods; 2) minimize the impact of floods on human health, safety, and welfare; and 3) restore and preserve the natural and beneficial values of the current floodplain. To comply with Executive Order 11988, the policy of the USACE is to develop projects that avoid or minimize adverse effects associated with use of the floodplain and that avoid development in an existing floodplain unless there is no practicable alternative.

Clean Water Act Section 303(d) List of Water Quality Limited Segments

Under Section 303(d) of the Clean Water Act (CWA), states, territories, and authorized tribes are required to develop a list of water quality limited segments. These waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The CWA requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. The list of water quality limited segments requiring TMDLs include the Santa Ana Region, where water quality standards are not met but a TMDL has been developed, and an approved implementation is expected to result in the attainment of water quality standards.

Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin

The State Water Resources Control Board (SWRCB), together with the nine Regional Water Quality Control Boards (RWQCBs or Regional Boards), sets statewide policies to provide a basis for managing water quality conditions of the upper and lower Santa Ana River watersheds, the San Jacinto River watershed, and several other small drainage areas within southwestern San Bernardino County, western Riverside County, and northwestern Orange County. In addition to setting water quality goals and policies, the Basin Plan recognizes the regional differences in existing water quality. The Basin Plan provides a standard for monitoring the CWA, requiring maintenance of beneficial uses within specific waterbodies, and attainment of a level of standard by which to protect the uses within the waterbodies.

3.3.2 Environmental Setting – Hydrology

The Santa Ana River enters the Project Area from the northeast and continues along the southern boundary of the Project Area, flowing southwest to Prado Basin. Upstream tributary flows into this reach of the Santa Ana River include Plunge Creek to the north and City Creek to the northwest.

Plunge Creek enters the Wash Plan Area along the northern boundary, and City Creek skims the northwest boundary of the Wash Plan Area. Mill Creek joins the Santa Ana River near the southeast corner of the Wash Plan Area. The Seven Oaks Dam, upstream of the Project

Area, provides flooding mitigation from the main-stem Santa Ana River and the mountain-based tributaries. The extensive levee system within the vicinity of the Project Area has been designed to mitigate flooding and redirect flows, including 100-year rain event flows from Mill Creek.

Groundwater underlying the Wash Plan Area is part of the Bunker Hill II sub-basin of the Upper Santa Ana Valley Groundwater Basin. The Bunker Hill Basin covers 89,600 acres (120 square miles), has an estimated storage capacity of 5,976,000 acre-feet, and has a current anticipated storage of 5,890,300 acre-feet. The Bunker Hill Basin is identified as a groundwater recharge zone, and is bounded on the north by the bedrock of the San Bernardino Mountains (north of the San Andreas Fault), on the southeast by the Crafton fault, and on the west by the San Jacinto Fault. These geologic faults act as barriers to groundwater movement.

As illustrated in Figure 4.2, *Flood Zone Map*, the majority of Selected Lands is susceptible to flood inundation during a flood event due to dam failure at the Seven Oaks Dam. The existing system of levees and other flood control facilities are intended to manage the flows experienced during flood events that occur each flood season. Flood control facilities include the Mill Creek, Plunge Creek, and City Creek levees. Levees are also present on the south bank of the Santa Ana River, as well as where Orange Street-Boulder Avenue crosses over Plunge Creek. Additionally, the water percolation basins on the Offered Lands have levees, berms, and dikes constructed around them to protect against flooding or to direct flood flows.

3.3.3 Environmental Setting – Water Quality

This section summarizes existing water quality conditions within the Project Area. The affected reach of the Santa Ana River located south of the land exchange parcels is not listed within the Santa Ana River Basin Plan or on the State of California 303(d) List for surface water quality impairments.

The Project Area lies within the Bunker Hill Basin which is known for its high-quality water because there are relatively few sources of contamination discharged to the Santa Ana River from upstream sources. Sewage generated from nearby cities converge to other urbanized areas before converging with the Santa Ana River. Furthermore, the Bunker Hill percolation basins rely on rainfall and stream flow from the Santa Ana River for recharge. The groundwater also provides a central water supply for communities; consequently, protecting this source of water is an important part of providing safe drinking water to the public.

There are no long-term data on the quality of storm water runoff within the Project Area. In the absence of site-specific data, expected storm water quality can be discussed qualitatively by relating pollutants to specific land use. The Project Area contains a direct road for the hauling of mineral resources. Pollutants expected include sediment, pathogens, pesticides, and salts. The amount of runoff depends upon rainfall intensity.

3.4 BIOLOGICAL ENVIRONMENT

This section describes the affected environment for biological resources[5]. The existing biological conditions are presented for the Project Area, which includes all lands involved in the land exchange (Selected and Offered Lands) in addition to a portion of Parcel 108-081 that is proposed to be designated as ACEC through the proposed land use plan amendment (Figure 3.5, *Species Occurances and Special Designations*).

3.4.1 Regulatory Setting

Three special designations for protection of biological resources exist or are proposed within the Project Area. The designations as they apply to existing and proposed ownership are presented in Table 3.1, *Special Designations for Existing and Proposed Land Ownership*. A detailed description of each land use is provided below.

Area of Critical Environmental Concern (ACEC)

Selected Lands within the Project Area are currently designated as BLM ACEC. ACEC is a designation applied to BLM lands where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, scenic, fish, or wildlife resources, or other natural systems or processes.

Lands proposed for ACEC designation (i.e., Offered Lands and a portion of Parcel 108-081) are nestled within a broader mosaic of private and federal undeveloped open space (e.g., DCH, WSPA Units, and existing ACEC parcels). For ecological purposes, lands proposed for ACEC designation are important to the cohesiveness and quality of the surrounding land. The ACEC designations will complement the project‘s indirect affect of securing the establishment of a contiguous corridor from DCH along Plunge Creek southward through numerous Santa Ana River Woolly Star Preserve Area (WSPA) Units, to connect with DCH along the Santa Ana River. These lands currently support two federally listed plant species, one federally listed mammal, provide DCH and allow for targeted water conservation activities (e.g., within low-quality chamise chaparral and non-native grassland habitats).

USFWS Designated Critical Habitat (DHC)

The USFWS DCH for the SBKR has been delineated within the Project Area‘s Selected and Offered Lands, and within Parcel 108-081 (Figure 3.5, *Species Occurances and Special Designations*). This designation encompasses approximately 561 acres of the Project Area, as well as portions of land outside the Project Area which include the Santa Ana River, and Plunge Creek. This DCH was occupied at the time of listing, is currently occupied, and contains all of the features essential to the conservation of SBKR (See Figure 3.5, *Species Occurances and Special Designations*).

Wash Plan Conservation Easements

The District proposes to establish conservation easements over portions of the Selected Lands as part of the land exchange and transfer of title. These easements will ensure that the

[5] For the purposes of this analysis, ―biological resources" include terrestrial and aquatic plants, wildlife, and habitats that occur, or have the potential to occur, within the project‘s defined Project Area.

exchanged lands acquired from the federal government will be managed for habitat conservation purposes consistent with the Wash Plan. These lands are identified in Figure 2.2. This establishment of the easements is part of the Proposed Action and described in Section 2.1.2.

Santa Ana River Woolly Star Preserve Area (WSPA)

Although not located within the Project Area, the Santa Ana River WSPA is a protected biological area comprised of three distinct parts that are located adjacent to the Project Area's Selected and Offered Lands, and BLM Parcel 108-081 (Figure 3.5, *Species Occurances and Special Designations*). The protected area plays an important role in the Wash Plan and the value of the Offered Lands in Section 12. The WSPA is managed by the SBCFCD. The WSPA was established in 1988 by the United States Army Corps of Engineers to mitigate the effects of the Seven Oaks Dam on the federally endangered Santa Ana River woolly-star. This area of alluvial fan scrub near the low-flow channel of the river was identified for preservation because these sections of the Santa Ana River floodplain were thought to have the highest potential to maintain the hydrology necessary for the periodic regeneration of early phases of alluvial fan sage scrub that supports extensive populations of woolly-star.

Table 3.1 Special Designations for Existing and Proposed Land Ownership

EXISTING						
	BLM			DISTRICT		
	Core Exchange (Selected)	Equalization Parcel (Selected)	Parcel 108-081	Core Exchange (Offered)	Equalization Parcel (Offered)	TOTAL
BLM ACEC	315	85	0	n/a	n/a	**400**
BLM NON-ACEC	0	0	280	n/a	n/a	**280**
DCH	218	85	158	12	60	**533**
CONSERVATION EASEMENT	0	0	0	0	0	**0**
PROPOSED						
	BLM			DISTRICT		
	Core Exchange (Selected)	Equalization Parcel (Selected)	Parcel 108-081	Core Exchange (Offered)	Equalization Parcel (Offered)	TOTAL
BLM ACEC	320	60	178	n/a	n/a	**558**
BLM NON-ACEC	n/a	n/a	102	n/a	n/a	**102**
DCH	12	60	158	218	85	**533**
CONSERVATION EASEMENT	0	0	0	56	85	**141**

3.4.2 Environmental Setting

The Project Area is located near designated and/or protected habitat areas which include: the SBKR; DCH along Plunge Creek and the Santa Ana River; the BLM Santa Ana River Wash ACEC; and three Santa Ana River WSPA Units which connect with DCH along the Santa Ana River (Figure 3.5, *Species Occurances and Special Designations*).

Selected Lands

Within BLM Selected Lands, natural habitat is actively being managed through DCH and ACEC designations. However, these lands have been adversely impacted by a substantial human disturbance regime. As such, these lands lack high-quality functional wildlife or hydrological connections between Plunge Creek and the Santa Ana River. Various roads, including Orange Street and unpaved haul routes, traverse the Selected Lands providing for commercial trucking as well as local thoroughfare. Nonetheless, special management of these lands for biological resource avoidance, and restricted access is ongoing.

Offered Lands

The Offered Lands support well-documented populations of federally protected plants and animals that currently lack adequate long-term preservation. The Offered Lands are located adjacent to DCH and can indirectly be used to secure the establishment of a historic connection between Plunge Creek and the Santa Ana River.

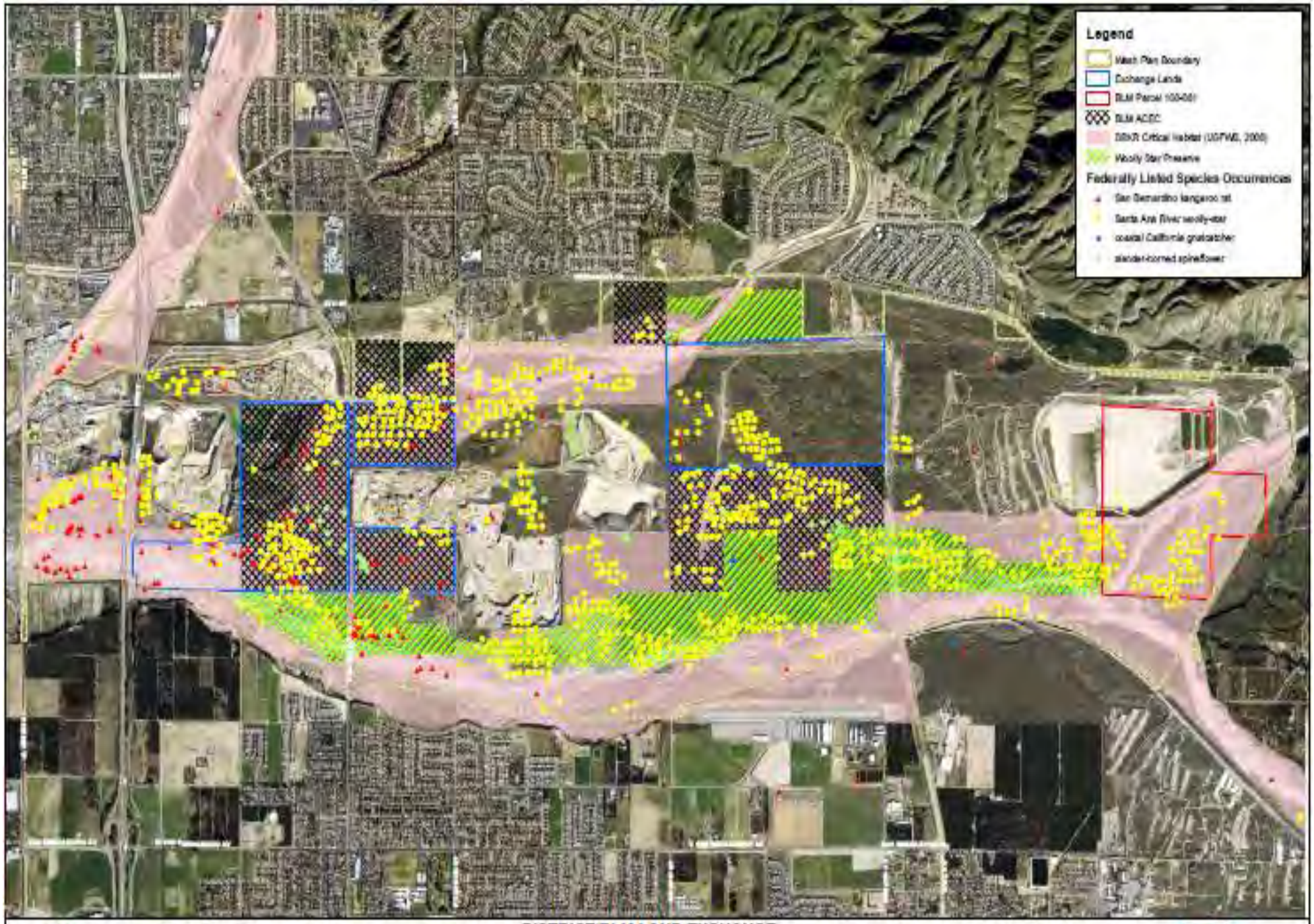
At present, one District-operated recharge basin exists within Offered Lands. The percolation basin is approximately 15 acres, of which 10 acres are within Section 12 (USGS, 1980, Figure 3.6). The District and its predecessors have been using the percolation basin and other water-conservation facilities in the Upper Santa Ana River since the early 1900s.

Existing open space within the Offered Lands includes low-quality chamise chaparral and non-native grassland habitats in the easterly 160 acre portion of Section 12 proposed for exchange. Phase III (future) water conservation facilities are proposed for approximately 50 acres within the 160 acres of low quality habitat as part of Wash Plan implementation..

BLM Parcel 108-081

Approximately 35 percent (102 acres) of the northern portion of Parcel 108-081 is developed as a recharge basin. The basin was initially created as a borrow pit for extraction of material to construct the Seven Oaks Dam (Figure 3.6, *Vegetation Communities*).

A majority of open space (approximately 178 acres in Parcel 108-081) located in the southern portion of the parcel was not historically impacted by mineral extraction. This existing open space in Parcel 108-081 includes SBKR DCH and high-quality Riversidean Alluvial Fan Sage Scrub (RAFSS) (Figure 3.6, *Vegetation Communities*). Substantial populations of Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*) are known to occur within the undisturbed portion of the parcel, based on past survey information. The DCH within the parcel has the potential to support SBKR and slender-horned spineflower. BLM Parcel 108-081 is situated within a broader mosaic of private and federal undeveloped open space (e.g., DCH, WSPA Units, and existing ACECs).



0 1,000 2,000 Feet

DISTRICT/BLM LAND EXCHANGE
SPECIES OCCURRENCES AND SPECIAL DESIGNATIONS

Figure 3.5

URS

3.4.2.1 Vegetation Communities and Land Cover Types

The Project Area supports five dominant vegetation communities/land-cover types: Riversidean alluvial fan sage scrub, chamise chaparral, Riversidean upland sage scrub, developed/ruderal, non-native grassland, and recharge basins (shown in Figure 3.6, *Vegetation Communities*) (Dudek, August 2008; Kirkpatrick & Hutchinson, 1977; LSA, November 2008; URS Corporation *et. al,).* As shown in Table 3.2, *Vegetation Communities and Land Cover Types,* a majority of the Project Area is composed of Riversidean alluvial fan sage scrub (refer to Appendix G, *Biological Technical Report*, for a complete list of plant and wildlife species within the Project Area).

Riversidean Alluvial Fan Sage Scrub

RAFSS vegetation communities occur on alluvial outwash fans along the base of the San Gabriel, San Bernardino, and San Jacinto Mountains. Alluvial scrub communities are generally associated with scoured areas on floodplains and outwash fans in the Transverse and Peninsular Ranges. Scalebroom (*Lepidospartum squamatum*) is considered to be an indicator species of alluvial scrubs, and is usually described as a dominant or subdominant shrub in alluvial community descriptions, including the Scalebroom Series Sawyer and Keeler-Wolf (1995) and the Lepidospartum-Eriodictyon-Yucca association described by Kirkpatrick and Hutchinson (1977).

RAFSS is frequently characterized by a mixture of drought-deciduous soft-leaved shrubs and larger chaparral species in alluvial soils (Kirkpatrick & Hutchinson, 1977). Species typically found in this community within the Project Area include white sage (*Salvia apiana*), spiny redberry buckthorn (*Rhamnus crocea*), California buckwheat (*Eriogonum fasciculatum*), chaparral yucca (*Yucca whipplei*), California croton (*Croton californicus*), valley cholla (*Cylindropuntia parryi*), tarragon (*Artemisia dracunculus*), yerba santa (*Eriodictyon* spp.), and mule fat (*Baccharis salicifolia*).

RAFSS occurs on alluvial benches throughout the Project Area, in various stages of succession. These four stages of succession (pioneer [P], intermediate [I], intermediate/mature [I/M], and mature [M]) generally represent the differences in species composition, growth forms (i.e., woodiness of plants) and percentage of cover. Areas mapped as intermediate RAFSS (I-RAFSS) typically lie between M-RAFSS and pioneer RAFSS (P-RAFSS). The vegetation is fairly dense and consists primarily of subshrubs. Typical species include California buckwheat (*Eriogonum fasciculatum*), coastal prickly pear (*Opuntia littoralis*), deerweed (*Lotus scoparius*), yerba santa (*Eriodictyon trichocalyx* var. *trichocalyx*), and chaparral yucca. Areas mapped as I/M-RAFSS exhibit physical and vegetative characteristics found in both I-RAFSS and M-RAFSS).

Chamise Chaparral

Chamise Chaparral within the Project Area includes one-to-three-meter-tall chaparral, overwhelmingly dominated by chamise (*Adenostoma fasciculatum*). Mature stands are densely interwoven with very little herbaceous understory or litter (Holland, 1986). Chamise Chaparral occurs on shallow, dry soils, or at somewhat lower elevations, often on xeric slopes and ridges, with adjacent, mesic sites mantled by Upper Sonoran Mixed Chaparrals.

Chamise Chaparral occurs throughout much of the range of chaparral in California from approximately 9 to 1,830 meters in elevation above MSL. Areas of Chamise Chaparral within the study have been degraded due to invasive, non-native grasses, contributing to overall lower- quality habitat.

Riversidean Upland Sage Scrub

Riversidean Upland Sage Scrub is one of the most xeric coastal scrubs in California. This open canopy community usually occurs on steep slopes on soils that drain quickly, or clay soils that release moisture slowly (Holland, 1986). Riversidean Upland Sage Scrub within the Project Area is dominated by California sagebrush (Artemisia californica), California buckwheat (Eriogonum fasciculatum), and non-native brome grasses (Bromus spp.), with each attaining approximately 20 percent canopy cover.

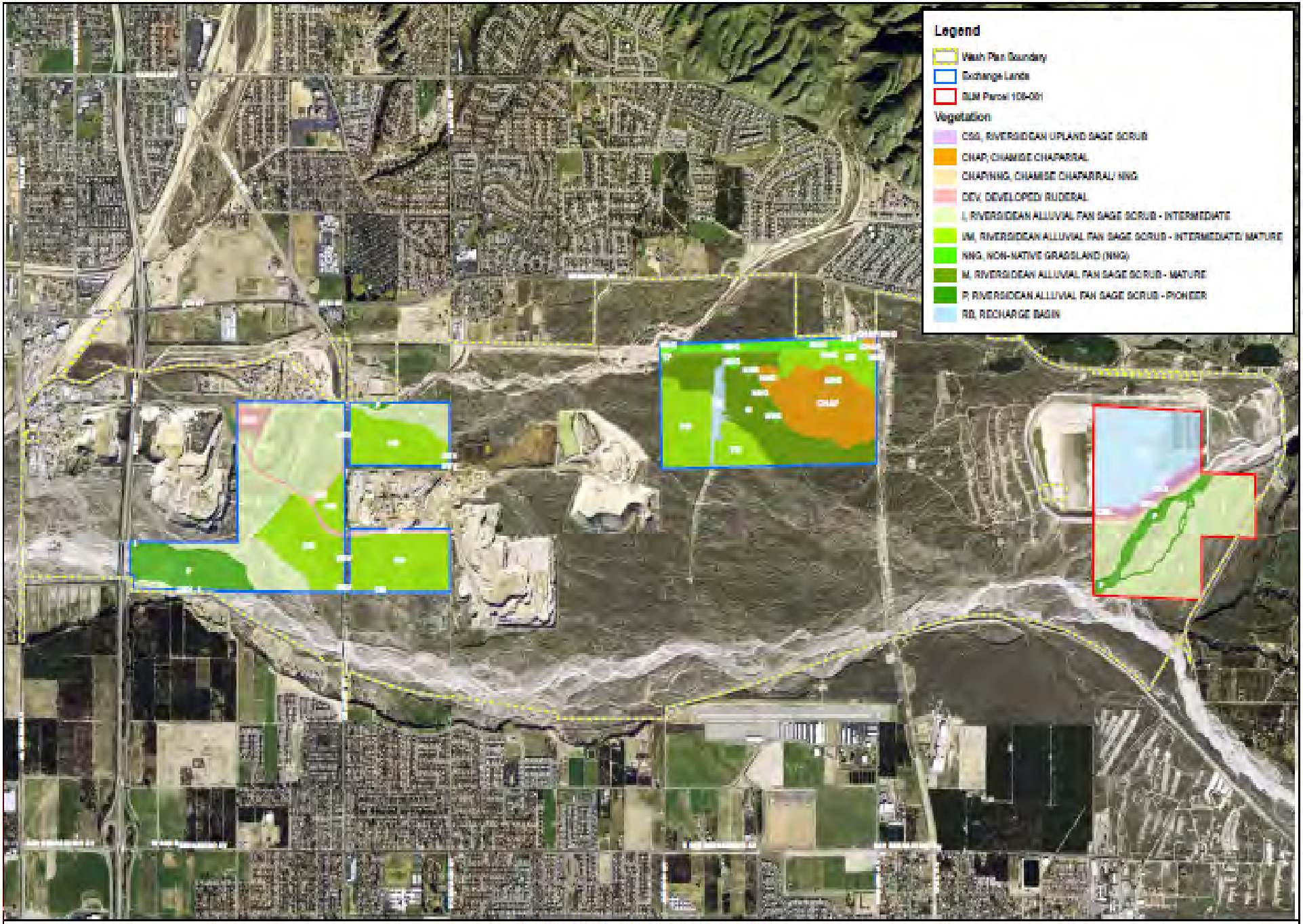
Non-Native Grassland

Non-native Grassland (NNG) generally occurs on fine-textured loam or clay soils, which are moist or even waterlogged during the winter rainy season, and very dry during the summer and fall. It is characterized by a dense to sparse cover of annual grasses, often with native and non-native annual forbs (Holland, 1986). This habitat within the Project Area is a disturbance-related community most often found in openings in native scrub habitats. This association has replaced native grassland and coastal sage scrub at many localities throughout southern California. Typical grasses within the Project Area include wild oat (*Avena* sp.), soft chess (*Bromus mollis*), red brome (*Bromus madritensis var. rubens)*, ripgut grass (*Bromus diandrus*), and foxtail fescue (*Vulpia megalura*). Characteristic forbs include red-stem filaree (*Erodium cicutarium*), mustard (*Brassica* sp.), tarweed (*Hemizonia* sp.), California goldfields (*Lasthenia chrysostoma),* and owl's clover (*Orthocarpus purpurascens*).

Developed/Ruderal

Developed areas include roads, built structures, and associated mining and water conservation facilities within the Project Area. Areas generally considered developed include dirt and paved roads, settling ponds, transmission lines, underground gas pipelines, railroads, and any other permanent structures. Developed portions of the Project Area lack vegetation entirely, are routinely disturbed by permitted activities, or are inundated with ornamental and/or ruderal vegetation. Ruderal vegetation is present under conditions of severe or repeated mechanical disturbance of the soil, herbicide treatment, or vehicle traffic. Ruderal vegetation in the Project Area consists primarily of non-native weedy species such as red brome (*Bromus madritensis* ssp. *rubens*), slender wild oat (*Avena barbata*), shortpod mustard (*Hirschfeldia incana*), and red-stem stork‘s bill (*Erodium cicutarium*).

Table 3.2 Vegetation Communities and Land Cover Types				
Vegetation Community	**Offered Lands (Acres)**	**Selected Lands (Acres)**	**BLM Parcel 108-081 (Acres)**	**Total (Acres)**
Chamise Chaparral	80	0	0	80
Riversidean Upland Sage Scrub	0	0	10	10
Developed	2	37	10	49
Non-native Grassland	29	0	0	29
RAFSS Pioneer	50	6	25	80
RAFSS Intermediate	11	166	133	310
RAFSS Intermediate / Mature	97	191	0	288
RAFSS Mature	100	0	0	100
Recharge Basin	11	0	102	113



DISTRICT/BLM LAND EXCHANGE
VEGETATION COMMUNITIES

Figure 3.6

URS

3.4.2.2 Wildlife

The Offered Lands support a diversity of wildlife species associated with chaparral, grassland, and alluvial fan sage scrub habitats. Common species include California ground squirrel (*Spermophilus beecheyi),* Woodrat species (*Neotoma sp.),* desert cottontail (*Sylivilagus audubonii*), California side-blotched lizard (*Uta stansiburinana elegans*), checkered white butterfly (*Pontia protodice*), and California horned lark (*Eremophila alpestris actia*). The Selected Lands and BLM Parcel 108-081 support many of the same species found within the Offered Lands. Common species detected during the field efforts include painted lady (*Vanessa cardui*), western fence lizard (*Sceloporus occidentalis*), California side-blotched lizard (*Uta stansiburinana elegans*), California quail (*Callipepla californica*), common raven (*Corvus corax*), western scrub jay (*Aphelocoma californica*), wrentit (*Chamaea fasciata*), California ground squirrel (*Spermophilus beecheyi*), mule deer *(Odocoileus hemionus)*, and raccoon (*Procyon lotor*). Additionally, the Offered Lands support suitable habitat for those species associated with grassland and chaparral habitats not found on the Selected Lands or within the undisturbed portions of BLM Parcel 108-081.

3.4.2.3 Special Status Plant Species

Twenty-five special status plant species may occur within the Project Area. Table 3.3, *Special Status Plant Species Potentially Occurring within the Project Area*, summarizes the special status plant species and their potential to occur within the Project Area. Two state-listed and federally listed plant species—Santa Ana River woolly-star and slender-horned spineflower have been observed in the Project Area.

Twenty-one of the twenty-five special status plant species that may occur within the Project Area were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible within the Project Area. The remaining four plants, Parry's spineflower (*Chorizanthe parryi var. parryi*), Plummer‘s mariposa-lily (*Calochotus plummerae*), Santa Ana River woolly-star, and slender-horned spineflower were determined to be present or have a moderate or high potential for occurrence due to the presence of suitable habitat within the Selected Lands, Offered Lands, and undisturbed habitats of Parcel 108-081.

3.4.2.4 Special Status Wildlife Species

Forty-two special status wildlife species may occur within the Project Area. Table 3.4, *Special Status Wildlife Species Potentially Occurring within the Project Area,* summarizes special status wildlife species and their potential to occur within the Project Area. Two federally listed wildlife species coastal California gnatcatcher (*Polioptila californica californica*) and SBKR have been identified within the Project Area.

Selected Lands

Twenty-one of the forty-two special status wildlife species that may occur within Selected Lands were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible within the Project Area. The remaining twenty-two wildlife species, including American badger, Bell‘s sage sparrow, coastal (San Diego) cactus wren, coastal California gnatcatcher,

California horned lark, coast (San Diego) horned lizard, coastal western whiptail, golden eagle, loggerhead shrike, Los Angeles pocket mouse, orange-throated whiptail, Northern red-diamond rattlesnake, Northwestern San Diego pocket mouse, SBKR, San Diego black-tailed jackrabbit, San Diego desert woodrat, short-eared owl, silvery legless lizard, western mastiff bat, western spadefoot, and white-tailed kite were determined to be present or have a moderate or high potential for occurrence due to the presence of suitable habitat within Selected Lands. Seven special status species were directly observed within the Selected Lands during the 2008 surveys: 1) California horned lark; 2) coastal California gnatcatcher; 3) coastal western whiptail; 4) Coastal San Diego cactus wren; 5) San Diego black-tailed jackrabbit; 6) SBKR; and 7) Northwestern San Diego pocket mouse.

Offered Lands

Nineteen of the forty-two special status wildlife species that may occur within Offered Lands were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible within the Project Area. The remaining wildlife species, including American badger, Bell‘s sage sparrow, coastal (San Diego) cactus wren, coastal California gnatcatcher, California horned lark, coast (San Diego) horned lizard, coastal western whiptail, golden eagle, loggerhead shrike, Los Angeles pocket mouse, orange-throated whiptail, Northern red-diamond rattlesnake, Northwestern San Diego pocket mouse, pallid bat, pocketed free-tailed bat, SBKR, San Diego black-tailed jackrabbit, San Diego desert woodrat, short-eared owl, silvery legless lizard, western mastiff bat, western spadefoot, and the white-tailed kite were determined to be present or have a ~~m~~oderate” or ~~h~~igh” potential for occurrence due to the presence of suitable habitat within Offered Lands. Seven special status species were directly observed within the Offered Lands during the 2008 surveys: 1) SBKR; 2) Northwestern San Diego pocket mouse; 3) coastal California gnatcatcher; 4) coastal western whiptail; 5) American badger; 6) San Diego desert woodrat; and 7) short-eared owl.

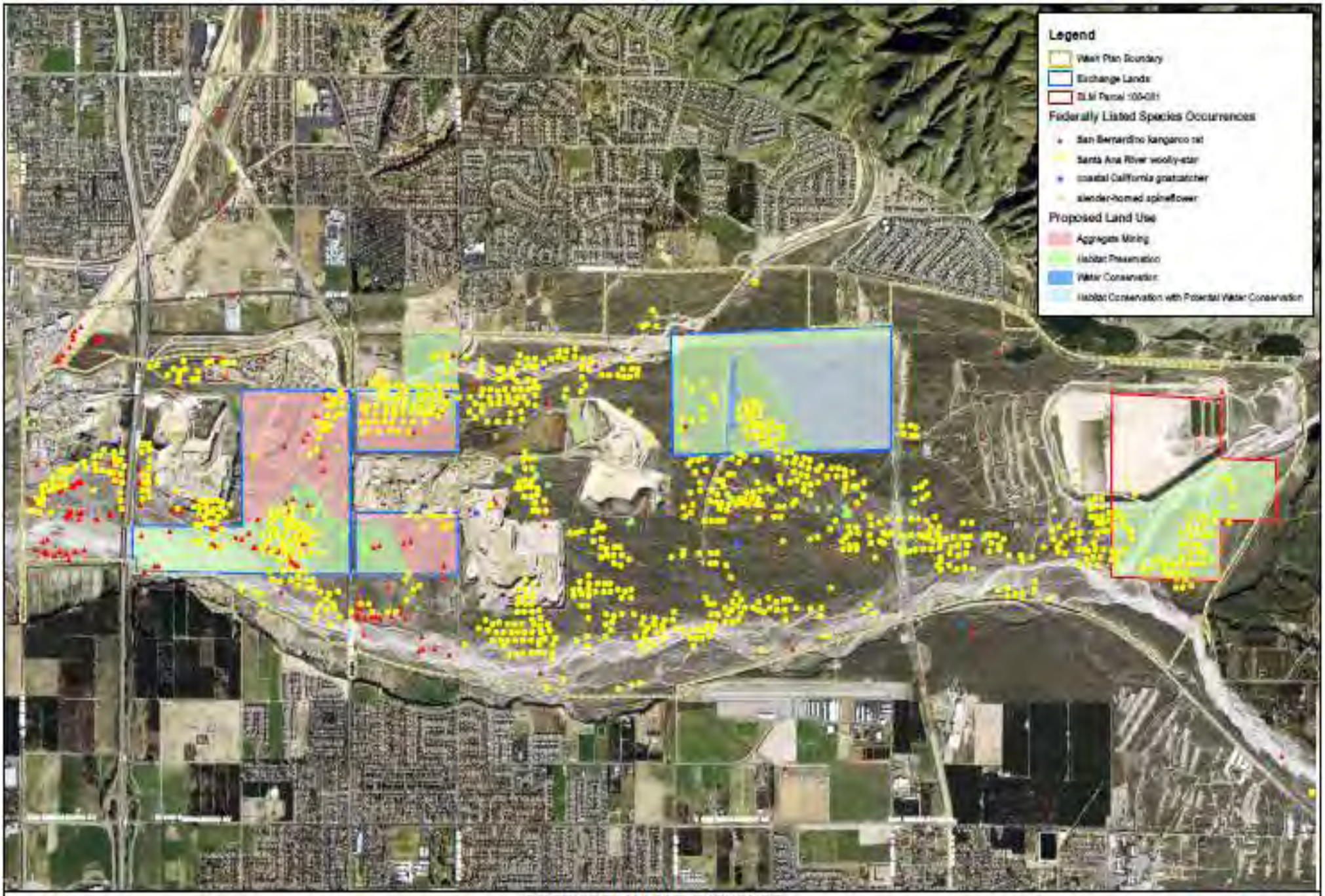
Parcel 108-081

Twenty-one of the forty-two special status wildlife species that may occur within the open space areas and undisturbed habitats of Parcel 108-081 were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible within the Project Area. The remaining twenty one wildlife species: American badger, Bell‘s sage sparrow, coastal (San Diego) cactus wren, coastal California gnatcatcher, California horned lark, coast (San Diego) horned lizard, coastal western whiptail, golden eagle, loggerhead shrike, Los Angeles pocket mouse, orange-throated whiptail, Northern red-diamond rattlesnake, Northwestern San Diego pocket mouse, SBKR, San Diego black-tailed jackrabbit, San Diego desert woodrat, short-eared owl, silvery legless lizard, western mastiff bat, western spadefoot, and white-tailed kite were determined to be present or have a moderate or high potential for occurrence due to the presence of suitable habitat within the undisturbed habitats of Parcel 108-081.

3.4.2.5 Wildlife Corridors

The San Bernardino County Land Use Plan Open Space Element Valley and Mountain Areas identifies two wildlife corridors associated with Plunge Creek and the Santa Ana River (Land Use Services Department August 2007). Both wildlife corridors occur within and adjacent to

the Project Area. As such, the lands proposed for ACEC designation (i.e., Offered Lands and a portion of Parcel 108-081) complement both the San Bernardino County General Plan Open Space Element and the Proposed Action‘s indirect effect of securing the establishment of a contiguous corridor from DCH along Plunge Creek southward through WSPA Units and ACEC, to connect with DCH along the Santa Ana River.



0 1,000 2,000 Feet

DISTRICT/BLM LAND EXCHANGE
SPECIES OCCURRENCES WITHIN FUTURE LAND USE

Figure 3.7

URS

Table 3.3 Special Status Plant Species Potentially Occurring within the Study Area						
Scientific Name **Common Name**	**Habitat and Distribution**	**Flowering Season**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Arenaria paludicola Marsh sandwort	Stoloniferous herb. Occurs in freshwater or brackish marshes or swamps. From 3 to 170 m in elevation.	May – Aug	FE SE CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Berberis nevinii Nevin‘s barberry	Evergreen shrub. Occurs in chaparral, cismontane woodland, coastal and riparian scrub. From 274 to 825 m in elevation.	Mar – Jun	FE SE CNPS: List 1B.1	LOW	LOW	LOW
Calochotus plummerae Plummer‘s mariposa-lily	Bulbiferous herb. Occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forests, and valley and foothill grasslands. From 100 to 1,700 m in elevation.	May – Jul	Fed: None State: None CNPS: List 1B.2	MODERATE	MODERATE	MODERATE
Caulanthus simulans Payson‘s jewel-flower	Annual herb. Occurs in chaparral and coastal scrub. From 90 to 2,200 m in elevation.	Mar – May	Fed: None State: None CNPS: List 4.2	ABSENT	ABSENT	ABSENT
Carex comosa Bristly sedge	Bogs and fens, freshwater marshes and swamps, and lake margins below 425 m. Known from Lake, San Bernardino, Santa Cruz, San Francisco, Shasta, San Joaquin, and Sonoma Counties, and Idaho, Oregon, and Washington. The last known occurrence of this species in San Bernardino County was in 1882 and is believed extirpated.	May – Sep	Fed: None State: None CNPS: List 2.1	ABSENT	ABSENT	ABSENT

Table 3.3 Special Status Plant Species Potentially Occurring within the Study Area						
Scientific Name **Common Name**	**Habitat and Distribution**	**Flowering Season**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Centromadia parryi ssp. ***levis*** Smooth tarplant	Annual herb. Grows within valley and foothill grassland, chenopod scrub, meadows, playas, and riparian woodland. Microhabitats include alkali meadow, alkali scrub, and also in disturbed places. From 0-480 m in elevation.	Apr – Sep	Fed: None State: None CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Dudleya multicaulis Many-stemmed dudleya	Perennial herb. Occurs in coastal scrub, chaparral, and valley and foothill grassland, usually on clay soils or grassy slopes. Up to 2,590 feet in elevation.	Apr – Jul	Fed: None State: None CNPS: List 1B.2	LOW	LOW	LOW
Chorizanthe parryi var. ***parryi*** Parry's spineflower	Annual herb. Occurs within coastal scrub and chaparral on dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland. Found on dry sandy soils. From 40-1705 m in elevation.	Apr – Jun	Fed: None State: None CNPS: List 3.2	MODERATE	MODERATE	MODERATE
Cordylanthus maritimus ssp. ***mritimus*** Salt marsh bird‘s-beak	Hemiparasitic annual herb. Occurs in coastal dunes, marshes, and swamps. Up to 30 m in elevation.	May – Oct	FE SE CNPS: List 1B.2	ABSENT	ABSENT	ABSENT
Dodecahema leptoceras slender-horned spineflower	Annual herb. Occurs within chaparral and coastal scrub (alluvial fan sage scrub). Found on flood-deposited terraces and washes; associates include Encelia, Dalea, Lepidospartum, etc. From 200-760 m in elevation.	Apr – Jun	FE SE CNPS: List 1B.1	PRESENT	PRESENT	HIGH

Table 3.3 Special Status Plant Species Potentially Occurring within the Study Area						
Scientific Name **Common Name**	**Habitat and Distribution**	**Flowering Season**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Eriastrum densifolium ssp. ***snctorum*** Santa Ana River woolly-star	Perennial herb. Occurs in chaparral and sandy or gravelly coastal scrub. From 299 to 2,001 feet in elevation.	May – Sep	FE SE CNPS: List 1B.1	PRESENT	PRESENT	HIGH
Helianthus nuttallii ssp. p***rishii*** Los Angeles sunflower	Rhizomatous herb. Occurs in coastal salt and freshwater marshes and swamps. From 33 to 5,495 feet in elevation.	Aug – Oct	Fed: None CA: N/A CNPS: List 1A	ABSENT	ABSENT	ABSENT
Horkelia cuneata ssp. p***berula*** Mesa horklia	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 70 to 825 meters elevation. Known from San Luis Obispo, Santa Barbara, Los Angeles, and Orange Counties. Believed extirpated from Ventura, San Bernardino, Riverside, and San Diego Counties.	Feb – Jul (Sep) (uncommon)	Fed: None CA: N/A CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Imperata brevifolia California satintail	Rhizomatous herb. Occurs in chaparral, coastal scrub, Mojave desert scrub, meadows and seeps (often alkali), and riparian scrub. Up to 500 m in elevation.	Sep – May	Fed: None State: None CNPS: List 2.1	LOW	LOW	LOW
Lepidium virginicum var. ***robinsonii*** Robinson‘s pepper-grass	Annual herb. Occurs in chaparral and coastal scrub. From 1 to 885 m in elevation.	Jan – Jul	Fed: None State: None CNPS: List 1B.2	LOW	LOW	LOW
Lycium parishii Parish‘s desert-thorn	Deciduous shrub of coastal scrub and Sonoran desert scrub at 305 to 1,000 m elevation. In California, known from Imperial and San Diego Counties. Known only historically from San Bernardino County (benches and/or foothills north of San Bernardino).	Mar – Apr	Fed: None State: None CNPS: List 2.3	ABSENT	ABSENT	ABSENT

Table 3.3 Special Status Plant Species Potentially Occurring within the Study Area						
Scientific Name **Common Name**	**Habitat and Distribution**	**Flowering Season**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Malacothamnus parishii Parish's bush-mallow	Deciduous shrub. Occurs in chaparral and coastal scrub. From 305 to 455 m in elevation.	Jun – Jul	Fed: None State: None CNPS: List 1A	LOW	LOW	LOW
Monardella macrantha ssp. ***Hallii*** Hall's monardella	Rhizomatous herb. Occurs in broad-leaved upland forests, chaparral, cismontane woodland, lower montane coniferous forests, and valley and foothill grasslands. From 730 to 2,195 m in elevation.	Jun – Aug	Fed: None State: None CNPS: List 1B.3	ABSENT	ABSENT	ABSENT
Monardella pringlei Pringle's monardella	Sandy hills in coastal sage scrub at 300 to 400 m elevation. Known only from two occurrences west of Colton. Last seen in 1941. Habitat lost to urbanization. Presumed extinct.	May – Jun	Fed: None State: None CNPS: List 1A	ABSENT	ABSENT	ABSENT
Phlox dolichantha Big Bear Valley phlox	Perennial herb. Occurs in pebble plain and upper montane coniferous forests. From 1,830 to 2,970 meters.	May – Jul	Fed: None State: None CNPS: List 1B.2	ABSENT	ABSENT	ABSENT
Ribes divaricatum var. ***parishii*** Parish's gooseberry	Deciduous shrub. Occurs in riparian woodland. From 54 to 300 m in elevation.	Feb – Apr	Fed: None State: None CNPS: List 1A	ABSENT	ABSENT	ABSENT
Rorippa gambelii Gambel's water cress	Freshwater or brackish marshes and swamps; 5 to 330 m elevation. Known from Los Angeles, Orange, San Diego, and San Luis Obispo Counties and Baja California.	Apr – Oct	FE State: SE CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Sidalcea hickmanii ssp. ***Parishii*** Parish's checkerbloom	Perennial herb. Occurs in chaparral, cismontane woodland, and lower montane coniferous forests. From 100 to 2,499 m in elevation.	Jun – Aug	Fed: None State: None CNPS: List 1B.2	LOW	LOW	LOW

Table 3.3 Special Status Plant Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Selected Lands	Offered Lands	BLM Parcel 108-081
Sidalcea neomexicana Salt spring checkbloom	Alkaline springs and marshes below 1,530 meters elevation. In California, known only from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and Ventura Counties.	Mar – Jun	Fed: None State: None CNPS: List 2.2	ABSENT	ABSENT	ABSENT
Sphenopholis obtusata Prairie wedge grass	Cismontane woodland, meadows and seeps/mesic, in elevations ranging from 300 to 2,000 m, in Amador, Fresno, Inyo, Mono, Riverside, San Bernardino, and Tulare Counties.	Apr – Jul	Fed: None State: None CNPS: List 2.2	ABSENT	ABSENT	ABSENT

Federal designations: (Federal Endangered Species Act, USFWS):
END: Federal-listed, endangered.
THR: Federal-listed, threatened.
California Native Plant Society (CNPS) designations:
List 1A: Plants presumed extinct in California.
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 in their range.
List 3: Plants about which we need more information; a review list.
List 4: Plants of limited distribution; a watch list.
State designations: (California Endangered Species Act, CDFG)
END: State-listed, endangered.
THR: State-listed, threatened.
RARE: State-listed as rare
Threat Codes:
1. Seriously endangered in California (over 80 percent of occurrences threatened / high degree and immediacy of threat).
2. Fairly endangered in California (20-80 percent occurrences threatened).
3. Not very endangered in California (<20 percent of occurrences threatened or no current threats known).

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area					
Scientific Name Common Name	**Habitat Description**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Carolella busckana Busck's gallmoth	Habitat requirements unknown.	--	ABSENT	ABSENT	ABSENT
Rhaphiomidas terminatus abdominalis Delhi sands flower-loving fly	Restricted to Delhi series sands in western Riverside and San Bernardino Counties.	FE CA: None	ABSENT	ABSENT	ABSENT
Fish					
Catostomus santaanae Santa Ana sucker	The Santa Ana sucker's historical range includes the Los Angeles, San Gabriel, and Santa Ana River drainage systems located in southern California. An introduced population also occurs in the Santa Clara River drainage system in southern California. Found in shallow, cool, running water.	FT SSC	ABSENT	ABSENT	ABSENT
Gila orcutt Arroyo chub	Perennial streams or intermittent streams with permanent pools; slow water sections of streams with mud or sand substrates; spawning occurs in pools. Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita River systems; introduced in Santa Ynez, Santa Maria, Cuyama, and Mojave River systems and smaller coastal streams.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Rhinichthys osculus ssp. ***3*** Santa Ana speckled dace	Found in the headwaters of the Santa Ana and San Gabriel River drainages. Speckled dace occupy many isolated western drainages and have diversified into numerous subspecies, with those in swift water taking on streamlined forms, while those in slower water are relatively chubby and small finned.	Fed: None SSC	ABSENT	ABSENT	ABSENT

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area					
Scientific Name Common Name	**Habitat Description**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Amphibians					
Spea (=Scaphiopus) hammondii Western spadefoot	Grasslands and occasionally hardwood woodlands; requires vernal pools (persisting for at least three weeks) for breeding; burrows in loose soils during dry season. Occurs in the Central Valley and adjacent foothills, the non-desert areas of southern California, and in Baja California.	Fed: None SSC BLM: S	MODERATE	HIGH	MODERATE
Rana muscosa Sierra Madre yellow-legged frog	Endemic to California. Inhabits lakes, meadow streams, isolated pools, sunny riverbanks in the Sierra Nevada. Open stream and lake edges with a gentle slope up to a depth of 5-8 cm. seem to be preferred. From 370 to over 3,660 m in elevation. Rarely occurs where predatory fishes have been introduced.	FE SSC	ABSENT	ABSENT	ABSENT
REPTILES					
Anniella pulchra pulchra Silvery legless lizard	Most common in coastal dune, valley-foothill, chaparral, and coastal sage scrub. Associated with friable soils with some moisture content and some vegetative cover. Has a broad thermal tolerance.	Fed: None SSC	MODERATE	HIGH	MODERATE
Aspidoscelis hyperythra Orange-throated whiptail	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes & other sandy areas with patches of brush & rocks. Perennial plants necessary for its major food termites.	Fed: None SSC	MODERATE	MODERATE	MODERATE
Aspidoscelis tigris stejnegeri Coastal western whiptail	Wide variety of habitats including coastal sage scrub, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California	Fed: None CA: None	PRESENT	PRESENT	HIGH

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat Description	Status Designation	Selected Lands	Offered Lands	BLM Parcel 108-081
Crotalus ruber rubber Northern red-diamond rattlesnake	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to Baja California.	Fed: None SSC	HIGH	HIGH	HIGH
Diadophis punctatus modestus San Bernardino ringneck snake	Occurs in open relatively rocky areas often in moist microhabitats near intermittent streams. Found along the southern California coast from the Santa Barbara area south along the coast to San Diego County, and inland into the San Bernardino Mountains.	Fed: None CA: None	LOW	LOW	LOW
Lampropeltis zonata (parvirubra) California mountain kingsnake (San Bernardino population)	Occurs in Bigcone spruce and chaparral at lower elevations; in black oak, incense cedar, Jeffrey pine; and ponderosa pine at higher elevations. Well-lit canyons with rocky outcrops or rocky talus.	Fed: None SSC	LOW	LOW	LOW
Phrynosoma coronatum (blainvillii population) Coast (San Diego) horned lizard	Occurs in coastal sage scrub, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species.	Fed: None SSC BLM: S	HIGH	HIGH	HIGH
Thamnophis hammondii Two-striped garter snake	Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth. Occurs from Coastal California from the vicinity of Salinas to northwest Baja California. From sealevel to about 7,000 feet in elevation.	Fed: None SSC	LOW	LOW	LOW
BIRDS					
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	Resident in southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass & forb patches.		LOW	LOW	LOW

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area					
Scientific Name Common Name	**Habitat Description**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Amphispiza belli belli Bell's sage sparrow	(Nesting) Occupies chaparral and coastal sage scrub from west central California to northwestern Baja California. Prefers semi-open habitats with evenly spaced shrubs 1-2 m high.	Fed: None CA: None	HIGH	HIGH	HIGH
Aquila chrysaetos Golden eagle	(Nesting and Wintering) Generally open country of the Temperate Zone worldwide. Nesting primarily in rugged mountainous country. Uncommon resident in southern California.	Fed: None CA: None	MODERATE	MODERATE	MODERATE
Asio flammeus Short-eared owl	(Nesting) Occurs in flat, open lands including grasslands. The short-eared owl occurs on all continents except Antarctica and Australia; thus it has one of the largest distributions of any bird. Nests are concealed by low vegetation, usually situated in the shelter of a grass mound, under a grass tuft, or among herbaceous ground cover.	Fed: None CA: None	MODERATE	PRESENT	MODERATE
Athene cunicularia Burrowing owl	(Burrow sites and some wintering sites) Open annual grasslands or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Dependent upon burrowing mammals (especially California ground squirrel) for burrows.	Fed: None CA: None BLM: S	LOW	LOW	LOW
Campylorhynchus brunneicapillus sandiegensis Coastal (San Diego) cactus wren	(San Diego & Orange Counties only) The cactus wren is a non-migratory resident of the coastal sage scrub plant community. Occupies southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub.	Fed: None SSC	PRESENT	MODERATE	MODERATE

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area					
Scientific Name Common Name	**Habitat Description**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Coccyzus americanus occidentalis Western yellow-billed cuckoo	(Nesting) Inhabits riparian forest along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Dendroica petechia brewsteri Yellow warbler	(Nesting) Prefers wetlands and mature riparian woodlands dominated by cottonwoods, alders, and willows. Feeds on caterpillars, cankerworms, moth larvae, bark beetles, borers, weevils, small moths, aphids, grasshoppers, and spiders, and occasionally feeds on a few species of berries.	Fed: None SSC	LOW	ABSENT	LOW
Elanus leucurus White-tailed kite	(Nesting) Typically nests in riparian trees such as oaks, willows, and cottonwoods at low elevations. Forages in open country. Found in South America and in southern areas and along the western coast of North America.	Fed: None SE	HIGH	MODERATE	HIGH
Empidonax traillii extimus southwestern willow flycatcher	(Nesting) Occurs in riparian woodlands along streams and rivers with mature, dense stands of willows (*Salix* spp.), cottonwoods (*Populus* spp.), or smaller spring fed or boggy areas with willows or alders (*Alnus* spp.) It breeds in relatively dense riparian habitats from near sea level to over 2,600 meters.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Eremophila alpestris actia California horned lark	Desert scrub, short grass plains, grasslands interrupted by bare ground, grassy hillsides, mesas and ridges, plowed agricultural land, sagebrush flats, alpine meadows, and fell-fields, alkali flats.	Fed: None	PRESENT	HIGH	HIGH

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat Description	Status Designation	Selected Lands	Offered Lands	BLM Parcel 108-081
Falco mexicanus Prairie falcon	(Nesting) Open country in much of North America. Nests in cliffs or rocky outcrops; forages in open arid valleys and agricultural fields. Rare in southwestern California.	Fed None SE	LOW	ABSENT	ABSENT
Icteria virens Yellow-breasted chat	(Nesting) summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forage, and nest w/in 10 ft of ground.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Lanius ludovicianus Loggerhead shrike	(Nesting) Occurs in broken woodlands, savannah, pinyon-juniper, Joshua tree and riparian woodlands, desert oasis scrub and washes. Prefers open country for hunting, with perches for scanning and fairly dense shrubs and brush for nesting.	Fed: None SSC USFWS: BCC	HIGH	HIGH	HIGH
Polioptila californica californica Coastal California gnatcatcher	Occurs in coastal sage scrub vegetation on mesas, arid hillsides, and in washes and nests almost exclusively in California sagebrush.	FT SSC	PRESENT	PRESENT	HIGH
Vireo bellii pusilus Least Bell's vireo	(Nesting) Resides in low riparian areas close to water or dry riverbeds. Their nests are usually constructed in bushes or within the branches of willows, mule fat, and mesquite. They are usually found below an elevation of 2,000 feet.	FE SE USFWS: BBC	LOW	ABSENT	LOW
MAMMALS					
Antrozous pallidus Pallid bat	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures.	Fed: None SSC BLM: S	LOW	MODERATE	LOW
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	Inhabits coastal scrub, chaparral, grasslands, sagebrush, etc. Found in western San Diego County in sandy,	Fed: None SSC	PRESENT	PRESENT	HIGH

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area					
Scientific Name Common Name	**Habitat Description**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
	herbaceous areas, usually in association with rocks or coarse gravel.				
Dipodomys merriami parvus San Bernardino kangaroo rat	Typically is found in RAFSS and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. Soil texture is a primary factor in this subspecies occurrence. Sandy loam substrates allow for the necessary digging of simple, shallow burrows.	FE SSC	PRESENT	PRESENT	HIGH
Dipodomys stephensi Stephens' kangaroo rat	Primarily inhabits annual & perennial grasslands, but also occurs in coastal scrub & sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass & filaree. Will burrow into firm soil.	FE ST	LOW	LOW	LOW
Eumops pertis californicus Western mastiff bat	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	Fed: None SSC BLM: S	MODERATE	MODERATE	MODERATE
Lasiurus xanthinus Western yellow bat	Occurs in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Fed: None CA: None	ABSENT	ABSENT	ABSENT
Lepus californicus bennettii San Diego black-tailed jackrabbit	Variety of habitats including herbaceous and desert scrub areas, early stages of relatively open habitats. Restricted to the cismontane areas of southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain ranges.	Fed: None SSC	PRESENT	HIGH	HIGH
Neotoma lepida intermedia San Diego desert woodrat	Desert woodrats are found in a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.	Fed: None SSC	HIGH	PRESENT	HIGH
Nyctinomops femorosaccus	Occurs in a variety of	Fed: None	LOW	MODERATE	LOW

Table 3.4 Special Status Wildlife Species Potentially Occurring within the Study Area					
Scientific Name Common Name	**Habitat Description**	**Status Designation**	**Selected Lands**	**Offered Lands**	**BLM Parcel 108-081**
Pocketed free-tailed bat	arid areas in southern California: pine-juniper woodlands, desert oasis, desert wash, desert riparian, and rocky areas with high cliffs.	SSC			
Perognathus longimembris brevinasus Los Angeles pocket mouse	Lower elevation grasslands & coastal sage communities in the Los Angeles basin. Open ground with fine sandy soils. May not dig extensive burrows, hiding under weeds & dead leaves instead.	Fed: None SSC	MODERATE	MODERATE	MODERATE
Taxidea taxus American badger	Most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open uncultivated ground. Preys on burrowing rodents.	Fed: None SSC	HIGH	PRESENT	HIGH
Status Codes Federal FE = Federally listed Endangered FT = Federally listed Threatened BLMS = BLM Sensitive State ST = State listed Threatened SE = State listed Endangered FP = Fully protected SSC = CA State Species of Concern -- = Other					

3.5 LAND USE PLANNING AND RECREATION

The Project Area consists of the lands proposed for exchange by the District and the BLM within the City of Highland and the City of Redlands, within the County of San Bernardino, California. Approximately 80 acres of Selected Land and approximately 320 acres of Offered Land are located within the City of Highland. Approximately 220 acres of Selected Land and approximately 60 acres of Offered Land are located within the City of Redlands.

3.5.1 Land Use Regulatory Setting

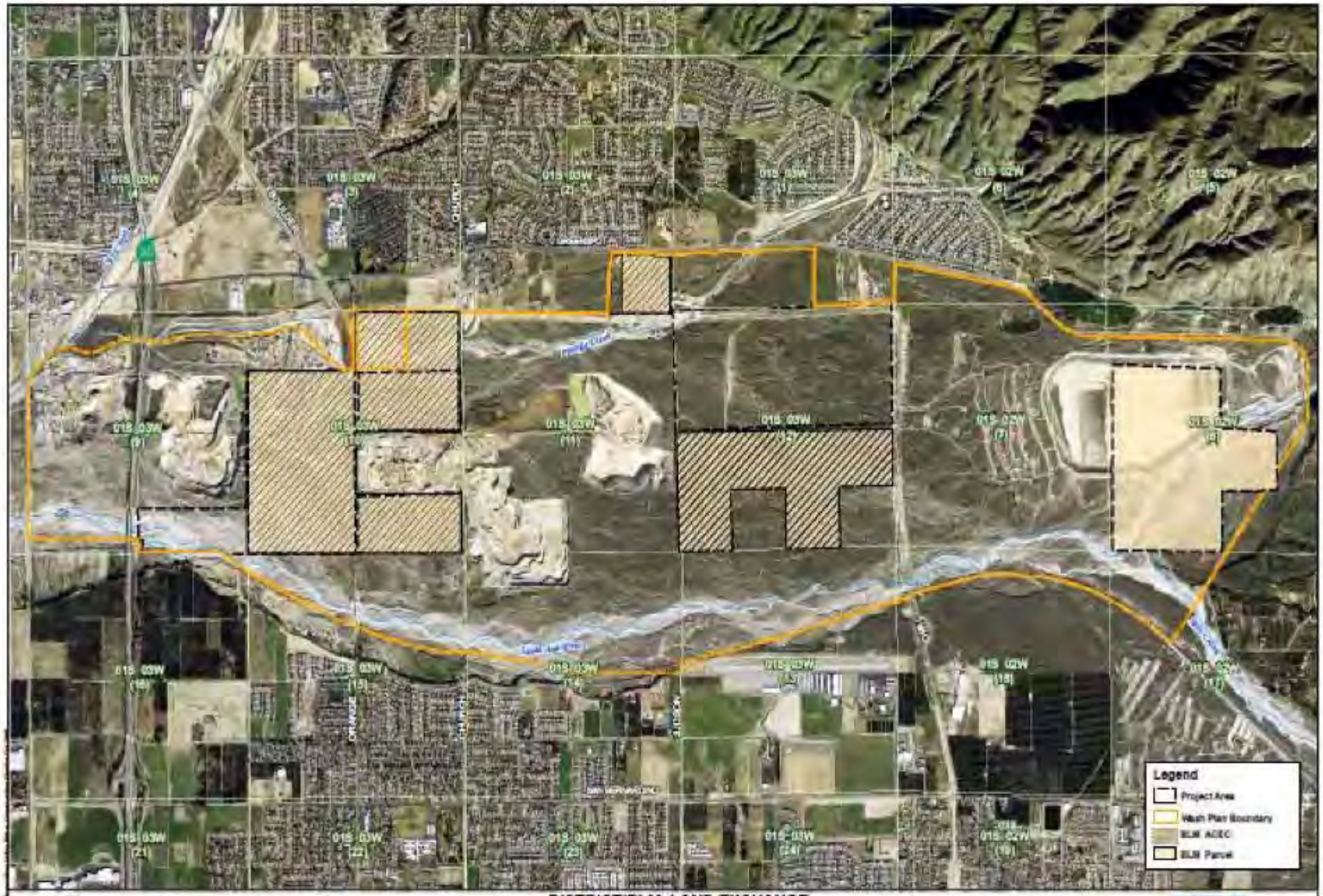
Plans and policies applicable to the management of the land exchange parcels depend on the agency responsible for managing the lands involved. The BLM is the federal Lead Agency responsible for implementing the Proposed Action. The governing laws and applicable management plans for BLM lands are detailed in Section 1.8, *Relationship to Other Policies, Programs, and Plans,* and include:

- Mining and Mineral Policy Act of 1970;
- Multiple Use Mining Act of 1955;
- Natural Community Conservation Planning (NCCP) Act of 1991;
- Federal Land Policy and Management Act (FLPMA) of 1976; and
- South Coast Resource Management Plan (SCRMP).

South Coast Resource Management Plan (SCRMP)

The BLM Palm Springs Field Office administers both surface and subsurface estate on the Selected Lands in accordance with the SCRMP; therefore, the Proposed Action is subject to management decisions outlined in the SCRMP.

The SCRMP provides a framework to maximize resource values and the multiple uses of BLM lands through a rational, consistently applied set of procedures. Land use allocations as designated by the SCRMP within the Project Area are shown in Figure 3.8, *Existing SCRMP Land Use Designation*.



DISTRICT/BLM LAND EXCHANGE
EXISTING SCRMP LANDUSE DESIGNATION

Figure 3.8

URS

Santa Ana River Wash ACEC

BLM Selected Lands are located within the boundaries of the Santa Ana River Wash ACEC, a special management area designated by the SCRMP. The SCRMP provides land use allocations for the Santa Ana River Wash ACEC that emphasize protection and enhancement of sensitive species habitats in the ACEC. Lands within the ACEC have been assigned the following management prescriptions to promote the conservation and recovery of two federally listed plant species, the Santa Ana River woolly-star and the slender-horned spineflower:

- ACEC lands are allocated for retention and are not available for disposal;
- The ACEC is unavailable for mineral materials sales, is closed to motorized vehicle use, and is unavailable for livestock grazing;
- The ACEC is a right-of-way avoidance area; and
- The ACEC is closed to mineral leasing and entry under the 1872 mining law.

These activities could be permitted within the ACEC only if compatible with sensitive species management objectives.

ACEC Designation

Offered Lands that are acquired by the BLM through the proposed exchange will be designated as part of the Santa Ana River Wash ACEC. The BLM's ability to create and manage lands as ACECs is authorized in Section 202 (c)(3) of the Federal Land Policy and Management Act of 1976 (FLPMA, P.L. 94-579). ACECs are defined as areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, and scenic values, fish, or wildlife resources, or other natural systems or processes, or to protect human life and safety from natural hazards.[6] The ACEC designation indicates that the BLM recognizes that an area has significant values, and establishes special management measures to protect those values. In addition, designation also serves as a reminder that significant value(s) or resource(s) exist which must be accommodated when future management actions and land use proposals are considered in or near an ACEC.

An area must require special management attention to protect the "important" and "relevant" values in order to be designated an ACEC. These are management measures which would not be necessary nor prescribed if the critical and important features were not present. That is, they would not be prescribed in the absence of the designation. The Offered Lands meet the criteria of relevance and importance required for ACEC designation.

An area meets the "relevance" criterion if it contains one or more of the following:

- A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans);

[6] United States Department of Interior Bureau of Land Management, South Coast Resource Management Plan and Record of Decision, Appendix C. June 1994.

- A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity);
- A natural process or system (including but not limited to endangered, sensitive, or threatened plant species, or rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian, or rare geological features); and
- Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the resource management planning process that it has become part of a natural process.

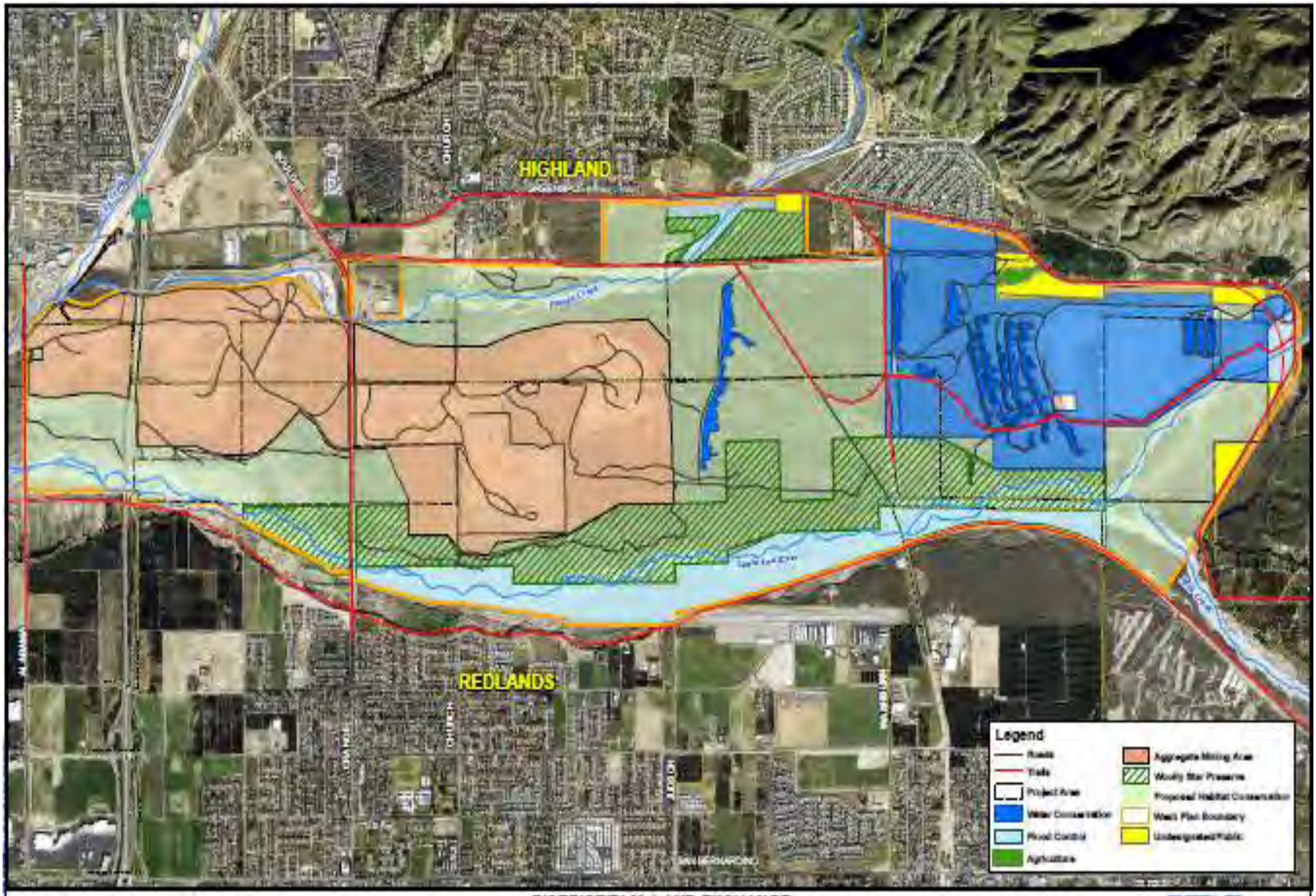
An ―important" resource, as defined by the BLM, is a value, system, process, or hazard which has substantial significance. This generally means that the value resources, system, process, or hazard is characterized by one or more of the following:

- Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially as compared to any similar resource;
- Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;
- Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA;
- Has qualities which warrant highlighting in order to satisfy public or management concerns about safety and public welfare; and
- Poses a significant threat to human life and safety or to property.

The proposed SCRMP Amendment will incorporate the BLM's desired management prescriptions for the newly designated ACEC parcel into the SCRMP.

Upper Santa Ana River Wash Land Management and Habitat Conservation Plan

The Wash Plan provides a comprehensive land management strategy which allows for the coordinated development and management of multiple resources within the Wash Plan Area. The proposed land exchange is a key component to the implementation of the Wash Plan. The Wash Plan is discussed in further detail in Section 1.8*, Relationship to Other Policies, Programs, and Plans,* (see Figure 3.9, *Wash Plan Land Use Map*).



DISTRICT/BLM LAND EXCHANGE
WASH PLAN LAND USE MAP

Figure 3.9

URS

Local Plans

Although the County of San Bernardino, City of Redlands and the City of Highland have no direct land use jurisdiction over BLM lands, these plans were evaluated for consistency with activities proposed on BLM lands. Lands owned by the District are subject to the management plans and policies outlined in the City of Redlands General Plan, the City of Highland General Plan, the County of San Bernardino General Plan, and applicable zoning regulations. An evaluation of the District's planned land uses for the proposed exchange parcels, and conformity with these documents can be found in the Wash Plan EIR. The plans summarized below are analyzed, but are not directly applicable to BLM lands subject to exchange.

City of Highland General Plan (2006)

The northern half of the Project Area is located within the City of Highland. The City has designated the proposed exchange lands as Open Space (OS). The purpose of this designation is to preserve natural open space, water conservation facilities, utility corridors, sensitive habitat areas, and passive recreation areas. According to the General Plan, lands designated for open space are not intended for urban or rural development. Permitted uses include agricultural uses, historical landmarks, national and state forests and wildlife preserve sanctuaries. Table 3.5, *City of Highland Allowable Land Uses Within the Project Area*, summarizes all allowable uses under the open space land use designation.

Table 3.5 City of Highland Allowable Land Uses within the Project Area

Land Use Activities	Permitted Use	CUP*	Dept. Review Req.**	Not Permitted
Agricultural Uses	X			
Apiaries			X	
Communication & Telecommunication Facilities			X	
Fire & Police Stations				X
Forest Maintenance & Ranger Stations				X
Historical Landmarks	X			
Kennels & Catteries				X
Landscaping Services				X
Major Flood Control Facilities			X	
Mining, Reclamation and Processing of Mineral Resources		X		
Museums		X		
National and State Forests	X			
Public Building and Grounds			X	
Public and Private Parks, Golf Courses, Zoos, and Other Recreational and/or Commercial-recreational uses		X		
Public Utility Installations			X	

Table 3.5 City of Highland Allowable Land Uses within the Project Area				
Land Use Activities	**Permitted Use**	**CUP***	**Dept. Review Req.****	**Not Permitted**
Riding and Hiking Trails			X	
Riding Academies or Stables		X		
Shooting Facilities		X		
Wildlife Preserve Sanctuaries	X			
Precast Concrete Fabrication Plants and Storage Yards in Conjunction and on the Same Site as Existing Mining		X		
Wireless Telecommunication Facility—Major		X		
Wireless Telecommunication Facility—Minor			X	

Source: City of Highland Municipal Code, Chapter 16.28.
Notes: *Conditional Use Permit (CUP)
** Dept. Review Req: subject to approval of a department review permit application

City of Redlands General Plan (1995)

The southern half of the Project Area is located within the City of Redlands. Under the General Plan land use map, the area is designated as Flood Control/Construction Aggregates Conservation/Habitat Preservation. The General Plan defines this land use allocation as those areas subject to 100-year flood after implementation of flood control measures. According to the City of Redlands‘ designated land use and zoning map, allowable land uses within the Project Area are listed in Table 3.6, *City of Redlands Allowable Land Uses within the Project Area*.

Table 3.6 City of Redlands Allowable Land Uses within the Project Area		
Land Use Activities	**Permitted Use**	**CUP**
Agricultural and Open Uses of Land	X	
Recreational Uses	X	
Flood Control Structures	X	
Bridle Trails	X	
Off Street Parking	X	
Public Facilities & Utilities	X	
All Permitted Uses, Whether Public or Private, Involving the Use of a Building or Structure		X
Excavation and Removing of Rock, Sand and Gravel, Including Related Equipment and Apparatus		X
Aggregate Processing Plants		X
Ready Mix Concrete Batch Plants		X
Asphalt Batch Plants		X

Source: The City of Redlands, Municipal Code, Chapter 18.

County of San Bernardino General Plan (2007)

The San Bernardino County General Plan governs land use planning and development decisions within the County. Issues identified in the General Plan span the County's jurisdiction (which includes lands owned by the District) and non-jurisdiction (federal lands managed by the BLM), and therefore influence public policies on federal lands, even though the County does not have direct jurisdictional control of these areas. Policies in the General Plan address areas of commonality between the County and cities regarding their spheres of influence. The plan contains goals, policies, and implementation actions for a variety of issues, including natural and man-made hazards and resources.

3.5.2 Existing Land Uses before the Exchange

Land uses in the Project Area currently include water recharge facilities, undeveloped natural habitat, and mining. Unpermitted and unauthorized mining have disturbed approximately 61 acres of undeveloped natural habitat, and is classified in Table 3.7, *Existing Condition (No Action)*, as mining land use (see Figure 3.10, *Existing Land Use Conditions*).

Table 3.7 Existing Condition (No Action)

	Land Use			
	Undeveloped Natural Habitat (acres)	Habitat Conservation (acres)	Mining (acres)	Water Recharge and Conservation (acres)
Selected Lands (owned by the BLM)				
Core Exchange	0	254	61*	0
Equalization Parcel	0	85	0	0
Offered Lands (owned by the District)				
Core Exchange	0	0	0	320
Equalization Parcel	60	0	0	0
Total	**60**	**339**	**61**	**320**

Source: Figure 3.2 of the Wash Plan EIR 2008.
Note: * refers to inadvertent mining within the Selected Land.

Aggregate Mining and Processing

As stated above, unpermitted mining activities within the Project Area have occurred on 61 acres at the northwest corner of Section 10 on BLM Selected Lands. No mining exists on the 85 acres of land which forms the BLM equalization parcels. No mining occurs on the Offered Lands.

The Selected Lands are surrounded by properties that are currently leased from the District for sand and gravel mining by both Cemex and Robertson's. The District's lease to Cemex dates to September 10, 1979, and was most recently amended July 10, 1997. The Robertson's lease from the District was entered into on October 5, 1992, and was amended on August 11, 2003. These leases allow the mining operators to remove sand, gravel, and rock at defined royalty rates. Under both leases, it is the responsibility of the mining operator to secure the

permits necessary to conduct mining operations. In addition, both leases contain provisions which allow the District to continue its water conservation activities on the leased property; however, water conservation activities are required to be coordinated with any active mining operations. Other parts of the Cemex lease area are not permitted for active mining operations, and have been held as future reserves. Table 3.8, *Existing Mining Operations within the Upper Santa Ana River Wash*, summarizes existing mining operations within the Wash Plan Area.

0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
EXISTING LAND USE CONDITIONS

Figure 3.10

URS

Similarly, the Robertson's lease area does not contain any present, active mining operations. Robertson's owns land northwest and east (located in Sections 9, 10, and 11 of Township 1 South, Range 3 West) of the BLM core exchange Selected Lands. As part of the Proposed Action, the District will acquire BLM Selected Lands abutting existing mining operations and will lease these acquired lands in the western portion of the Wash Plan Area for future mining to Robertson's and Cemex (see Figure 3.11, *Existing Mining & Future Quarries*).

Table 3.8 Existing Mining Operations within the Upper Santa Ana River Wash

Mine Area/Location	Existing Mining Area (Acres)	Future Mining Area (Acres)
CEMEX		
City of Highland	180	256
City of Redlands	360	422
Robertson's		
City of Highland	131	180
City of Redlands	211	333

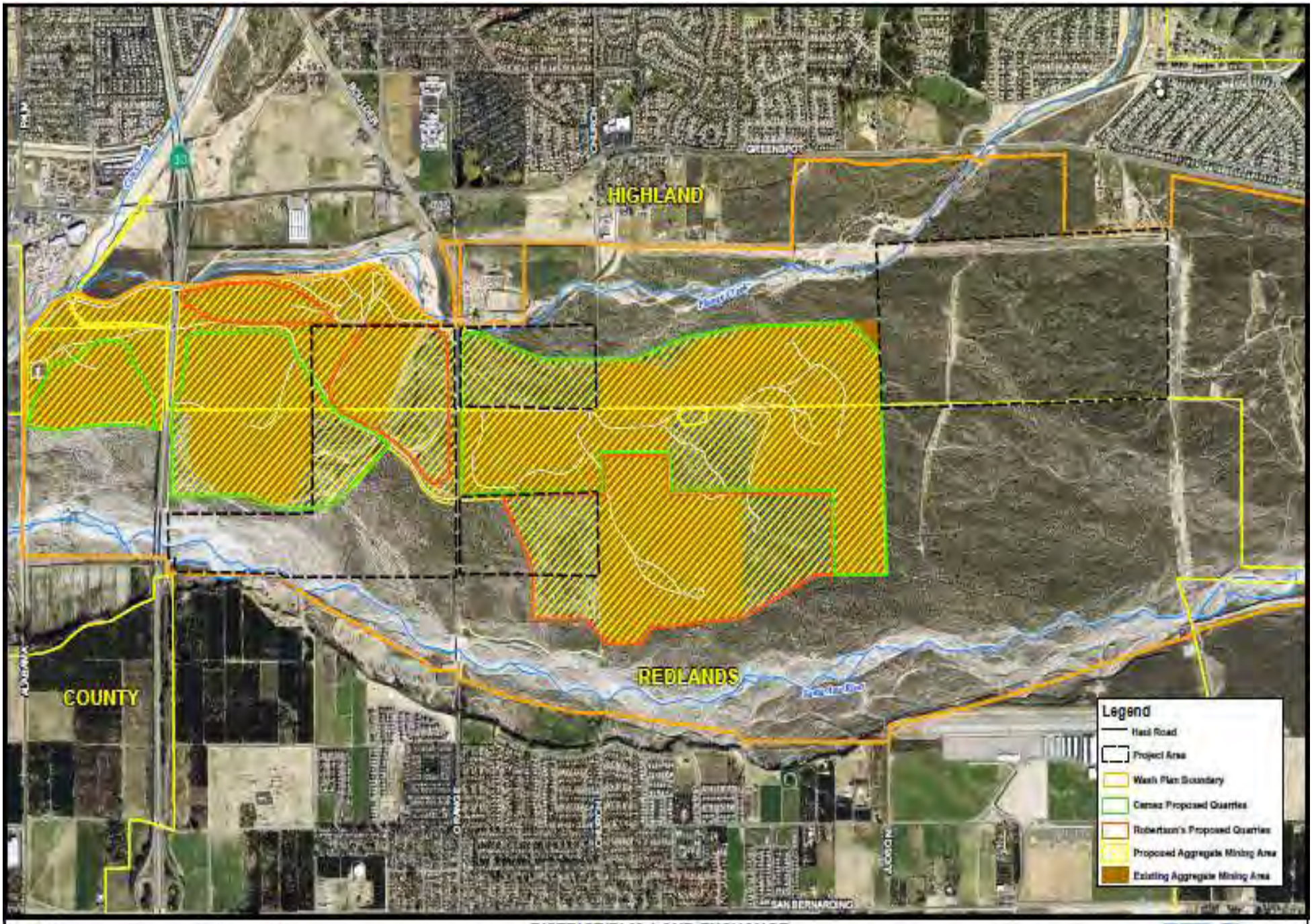
Sources: Cemex Mine Reclamation Plan 2008, Table ES1, Table 1
Robertson's Ready Mix Reclamation Plan 2008, Table ES-1, Table 1

Water Conservation

Water conservation within the Project Area is accomplished by recharging the Bunker Hill Groundwater Basin through the use of 14 percolation basins.[7] There are 1,260 acres, or 28 percent, of the Wash Plan Area currently designated for water conservation, with a wetted area of 64 acres. "D Dike," located on approximately 15 acres, of which 10 acres is in Section 12 of the Offered Lands, is the only basin within lands proposed for exchange. The percolation basins are owned by the District and are located in the eastern section of the Wash Plan Area.

The Wash Plan identifies three different areas under its land use designations for water conservation. These include the Seven Oaks Dam Borrow Pit (Phase 1); the area west of the Borrow Pit and east of the section line dividing Section 11 and 12 (page 2) and a portion of property located in the northeasterly section of Section 12, northeast of the former railroad right-of-way, designated as Phase 3. The Conservation District maintains three groundwater recharge basins in the Phase 1 area, and a series of recharge basins in Phase 2. The Wash Plan allows for potential expansion of water conservation facilities, in Phases 1, 2, and 3, if required at some future date. Because the Phase 3 area is also an area designated for habitat conservation, potential expansion of water conservation facilities in this area is limited to no more than 31% surface disturbance, and is to be utilized in third priority, after Phases 1 and 2 areas, if future water conservation facilities, apart from those existing at baseline, are required at a future date. (SBVWCD 2008; p.3-45-47.)

7 Basins are typically areas of shallow excavation where water percolation takes place. Flow of water into these basins, brings suspended sediment, which is dropped to the basin floor with percolation of the water. This sediment requires periodic removal for percolation rates to remain efficient.



0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
EXISTING MINING AND FUTURE QUARRIES

Figure 3.11

URS

Habitat Conservation

The Santa Ana River Wash ACEC encompasses 760 acres of BLM lands north of the City of Redlands, within the floodplains of the Santa Ana River and Plunge Creek. The Santa Ana River Wash ACEC provides special management for the conservation and recovery of the slender-horned spineflower and Santa Ana River woolly-star. The ACEC is managed according to decisions stated in the SCRMP, which define the ACEC as a right-of-way avoidance area, unavailable for mineral sales, closed to motorized vehicle use, and unavailable for livestock grazing. These management prescriptions generally limit the amount and extent of surface-disturbing activities permitted within the ACEC in order to protect and conserve habitat for which the area was designated.

Approximately 400 acres of BLM Selected Lands (core and equalization parcels) are located within the Santa Ana River Wash ACEC and set aside for habitat conservation. BLM Selected Lands within the Santa Ana River Wash ACEC are located within Section 10 (Figure 3.8, *Existing SCRMP Land Use Designation*). The Selected Lands are located on a portion of the ACEC that has been disturbed by mining haul roads and unauthorized mining activities.

Approximately 60 acres of District Offered Lands (equalization parcel) are suitable for habitat conservation but are not formally managed by the District as such. If these lands are needed to complete the exchange, they would be designated as ACEC upon transfer to the BLM. If they are not required for the exchange, they would be included in the proposed Wash Plan Conservation Easement for habitat protection.

Rights-of-Way and Easements

BLM Selected Lands are managed as right-of-way avoidance areas in accordance with the Santa Ana River Wash ACEC. Avoidance areas are areas where future rights-of-way may be granted only when no feasible alternative route or designated right-of-way corridor is available.

Southern California Edison (SCE) and the Municipal Water District (MWD) have existing easements with the District on the Offered Lands. SCE main service lines and easements within the Project Area run parallel along Orange Street-Boulder Avenue, Greenspot Road, Pole Line Road, and follow the unconstructed alignment of Church Street from the City of Redlands through the Project Area to the City of Highland. The MWD pipeline enters the Wash Plan Area near the District‘s core exchange Offered Land parcel at Plunge Creek Channel, and crosses the Project Area in a west-to-east direction along Pole Line Road to Cone Camp Road. At Cone Camp Road, the pipeline turns south, crossing the Project Area in a north-to-south direction before exiting at Opal Avenue. MWD maintains a permanent easement ranging from 125 feet to 250 feet in width for pipeline maintenance.

3.5.3 Planned Land Uses

Future land uses as identified in the Wash Plan will result in specific areas for habitat conservation, water conservation, recreation, transportation, utilities, and aggregate mining (see Figure 3.9, *Wash Plan Land Use Map*, and Table 3.10, *Future Land Use*). This multi-jurisdictional plan will allow for the coordinated development of multiple resource uses on

both private and public lands. Within the exchange parcels, future land uses will include habitat conservation, aggregate mining, and water recharge uses.

Table 3.9 Future Land Use (Proposed Action)

	Land Use			
	Undeveloped Natural Habitat (acres)	Habitat Conservation (acres)	Mining (acres)	Water Recharge and Conservation (acres)
Offered Lands (owned by the BLM after exchange)				
Core Exchange	0	260	0	60*
Equalization Parcel	0	60	0	0
Selected Lands (owned by the District after exchange)				
Core Exchange	0	56	259	0
Equalization Parcel	0	85**	0	0
Total	**0**	**461**	**259**	**60**

Source: Wash Plan EIR 2008.
Notes: * Water recharge activities and operation are proposed on approximately 31percent of the Offered Lands within the eastern Half of Section 12. The 60 acres within the water recharge and conservation category also include the "D Dike" and the water recharge facilities.
** A conservation easement or similar land management tool will be placed on these areas by the District.

Following the land exchange, a total of 461 acres would be set aside for habitat conservation through the establishment of the ACEC and conservation easement. Approximately 320 acres for habitat conservation would be designated as ACEC once the Offered Lands have been acquired by the BLM. Approximately 56 acres of the Selected Lands core exchange parcels would be set aside by the District for habitat preservation. In addition, 85 acres of the Selected Lands equalization parcels would be placed within a conservation easement. The creation of this conservation easement would ensure that these lands are retained in their natural state and that no development or disturbance to biological resources would occur. The ACEC areas, in conjunction with the District's conservation easement and habitat protection area, would provide an unrestricted corridor for wildlife movement.

The BLM is also proposing in the SCRMP Amendment to designate approximately 178 acres of Parcel 108-081 as ACEC. This action will expand land use protection for the three endangered species that occur in the Santa Ana River Wash ACEC.

3.5.4 Recreation Regulatory Setting

This section describes the recreational opportunities available in and around the Project Area. Recreational opportunities within the Project Area include local, regional and state designated recreational activities.

South Coast Resource Management Plan (SCRMP)

Currently, motorized vehicles are restricted on BLM lands. As part of the SCRMP resource condition objectives, recreational opportunities are to be compatible with endangered species

management objectives, and would therefore continue to restrict motorized vehicle access. Proposed recreational activities are reviewed by BLM on a case-by-case basis.

San Bernardino County General Plan – Circulation Element

According to the San Bernardino County General Plan Circulation Element, trails are an important part of the non-motorized transportation system that currently exists within San Bernardino County. Trails provide public access to open-space lands and serve as recreational amenities. Within San Bernardino County, the Department of Regional Parks is responsible for maintaining all County-designated regional trails. All of the County-designated trail facilities are multi-use trails that allow pedestrian, bicycle, and equestrian use. Two County-designated trails are located within the vicinity of the Project Area: 1) the Santa Ana River Trail; and 2) the Greenbelt Trail; which travels north and south through the Wash Plan Area east of the Project Area and connects to the Santa Ana River Trail.

City of Redlands General Plan – Open Space & Conservation Element

A trails map was prepared by the City of Redlands City Council Trails Committee and adopted by the City Council on October 7, 1992. The committee recognized four major types of trails: Regional Trunk Trails; Primary Community Trails; Secondary Community Trails; and Connector Trails. The trails map within the General Plan includes only Regional Trunk Trails and Primary Community Trails. Two Primary Community Trails traverse the Project Area. The Church Street to Panorama Point Trail travels north and south along Church Street into the Wash and is adjacent to the Selected Lands. The Santa Fe-Mentone Trail is located along Opal Avenue and also travels north and south into the Wash along Cone Camp Road, adjacent to the eastern boundary of the Offered Lands. The designated Regional Trunk trail is along the Santa Ana River, south of the Project Area.

City of Highland General Plan – Conservation & Open Space Element

According to the City of Highland General Plan, an extensive system of informal trails was developed during the early agricultural period of Highland, mostly associated with equestrian transport routes. A formal trail system was initiated when the East Highland Ranch began construction in the early 1980s. In 1989, the City adopted the Conceptual East Highlands Equestrian Map. Realizing the importance of other non-equestrian users, a Community Trails Committee was established in 1990 to advise the City on the planning, acquisition, and maintenance of a Multi-Use Trails Master Plan. There are four multi-use trails located within the Project Area. The first is located along Orange Street/Boulder Avenue, passing through the middle of the Selected Lands. The second trail traverses east and west along Pole Line Road, just north of Plunge Creek and adjacent to the northern boundary of the Offered Lands, then traverses south along Cone Camp Road, along the eastern boundary of the Offered Lands. The third trail comes from Greenspot Road and passes through the District‘s Offered Lands for the core exchange, and connects to Opal Avenue in Redlands. The fourth trail is the Santa Ana River Trail.

3.5.5 Trails

There are currently no existing trails or developed recreational opportunities within the Project Area. Recreation on BLM Selected Lands and District Offered Lands primarily consists of dispersed, undeveloped, casual recreation activities. However, planned trails are

located throughout the Wash Plan Area, including portions of the Selected and Offered Lands.

Local and regional trails in the vicinity of the Project Area include the Santa Ana River Trail and trails managed by the cities of Redlands and Highland. The Santa Ana River Trail is located approximately 1,800 feet from the southern border of the Project Area. Although not located on the Selected or Offered Lands, the trail will contribute to recreation opportunities within the regional area. Part of the Santa Ana River Corridor Trails System is expected to be constructed primarily on the top of levees already existing along the south side of the Santa Ana River within the City of Redlands.

The BLM Selected Lands are currently gated at access roads and are generally accessible to the public only with permission. No public access to the Selected Lands has been developed, nor are there any designated routes throughout the area. The BLM-managed Santa Ana River Wash ACEC is closed to motorized vehicle use; however, the area can be viewed from the haul roads used for casual recreation, such as hiking or jogging.

Access to existing trails within Offered Lands can be obtained by trail users with a Common Use Agreement from the District for legal access to trails that are used for flood control operations.

Santa Ana Watershed Project Authority

The Santa Ana River area was proposed as a State Recreation Area in 1955. As the Inland Empire has continued to grow throughout the past few decades, the river corridor has become a valued source of recreation opportunities within the region. In the 1960s, enthusiasm was generated by three counties (Orange, Riverside and San Bernardino) to build a trail along the Santa Ana River corridor from the ocean to the mountains. In the 1970s, this enthusiasm was translated into action in Orange County, which proceeded to build most of the trail, completing it up to Green River Golf Course. In addition, Riverside County purchased the river bottom necessary to complete a majority of the trail in Riverside County.

The Santa Ana River Trail, known as the ―Crest to Coast Trail," is a proposed trail that will traverse the entire Santa Ana waterway when completed. The proposed trail spans 110 miles from the Orange County coastline, through Riverside County and San Bernardino County, ending at the San Bernardino Mountain crest in the San Bernardino National Forest. Under leadership from the Santa Ana Watershed Project Authority, various counties, jurisdictions, agencies and private organizations are involved with the coordination and completion of the trail. Construction of several proposed trail segments has not yet been completed due to a lack of funding.

The Santa Ana River Trail traverses the Wash Plan Area to the south along the Santa Ana River. With exception to the District's equalization parcel, the trail does not pass through the Project Area.

City of Redlands

Proposed Primary Community Trails designated by the City of Redlands General Plan include the Church Street to Panorama Trail and the Santa Fe–Mentone Trail. Located on

Church Street, the Church Street to Panorama Trail traverses north and south, and ends in the Santa Ana Wash at the City limits, within the existing Cemex Orange Street Plant and Johnson Pit. The Santa Fe–Mentone trail traverses north and south along Opal Street to Cone Camp Road, and ends at the City limits within the Wash Plan Area, directly east of the District Offered Lands.

City of Highland

The City of Highland has designated multi-use trails within the Project Area. An east-west trail traverses along Pole Line Road, north of the Offered Land boundary. A north-south trail travels from Greenspot Road and intersects the Wash Plan Area, including District Offered Lands, to Opal Road. Another north-south trail traverses Cone Camp Road, located along the eastern boundary of District Offered Land, and continues down to Opal Road. Finally, a trail located along Orange Street/Boulder Avenue starts just north of Plunge Creek and ends at the Santa Ana River Trail.

The City of Redlands and City of Highland trails, some of which traverse the Project Area, do not coincide with each other. It is the intent of the Wash Plan to integrate the various city designated trails within the Wash Plan Area. As a result, the cities will amend their trails plan to coincide.

Recreation on Selected Lands

BLM does not manage trails within the Santa Ana River Wash ACEC. Use of existing trails within the ACEC is permitted as long as activities do not include motorized uses.

3.6 SOCIOECONOMICS

This section provides a discussion of the regional socioeconomic setting and the demographic and economic conditions of the affected environment.

3.6.1 Regional Setting

Aggregate mining operations have been conducted in portions of the Wash Plan Area for more than 80 years. The Project Area is located in a region that has experienced considerable population growth during the past two decades, with growth expected to continue through the next decade.

The socioeconomically affected environment includes population centers located to the north and south of the Project Area. Affected communities would include the City of Redlands, City of Highlands, and the unincorporated community of Mentone, located in San Bernardino County. For policy and planning purposes, SCAG has established the San Bernardino Association of Governments (SANBAG) sub-region that comprises the local governments of the cities of Redlands and Highland.

3.6.2 Environmental Setting

Demographic Characteristics

According to 2000 Census data, California had the largest population increase of all 50 states, increasing by 13.8 percent, or almost four million, since 1990. As a result, California‘s

33.9 million residents make it the most populous state in the nation and account for 12 percent of the nation‘s total population. Projections estimate that by the year 2020 California‘s population will reach over 45 million (Employment Development Department [EDD]). Population, housing, and economic data in this section were obtained from the U.S. Census Bureau, the SCAG, SANBAG, and San Bernardino County.

Census Block Groups indicated in Table 3.10, *Population and Population Change*, are shown in a regional context in Figure 3.12, *2000 Census Tracts and Block Groups*. Block Groups 3 and 1 are not within the Project Area; however, they are within the surrounding vicinity of the Project Area. The table below compares 2000 Census information with data from the 1990 Census, where relevant and available, to indicate trends in existing and projected economic conditions over the planning horizon. Census Tract Block Group population values are not comparable between years[8] because Census Tracts and Block Group numbering systems have changed since 1990.

Table 3.10 Population and Population Change

Jurisdiction	1990	2000	2010	2020	Percent Increase
CT 79.02,BG 7	6,076	371	N/A	N/A	-94%*
CT 76.02, BG 6	1,116	1,959	N/A	N/A	75%*
CT 80.01, BG 3	2,508	2,865	N/A	N/A	14%*
CT 84.01, BG 1	2,523	1,146	N/A	N/A	-55%*
City of Redlands	60,394	63,875	72,036	80,737	34%
City of Highlands	34,439	44,668	50,167	59,020	71%
County of San Bernardino	1,418,380	1,709,434	2,059,420	2,397,709	69%

Sources: Southern California Association of Governments, Growth Forecasting: City Projections, http://www.scag.ca.gov/forecast/downloads/2004GF.xls, 2004.
U.S. Census Bureau, Census 1990 & 2000 Summary File 1.
Note: *As noted previously, 1990 and 2000 Block Groups areas have changed.

The population in the surrounding region of the Project Area has slowly increased over the past decade. As shown in Table 3.10, *Population and Population Change*, the City of Redlands had a population of approximately 60,394 in 1990, and is projected to have a population of approximately 72,036 in 2010, an increase of a little over 19 percent. By 2020, the City of Redlands is projected to increase its population by over 34 percent (80,737 residents). The City of Highland had a population of approximately 34,439 in 1990, and is projected to have a population of approximately 50,167 in 2010, which would be an increase of almost 46 percent. Its population is expected to increase to 59,020 by 2020, an increase of almost 71 percent. The San Bernardino County population in 1990 was approximately 1,418,380, and the total County projected population for 2010 is approximately 2,059,420, an almost 20 percent increase in population. By 2020 the total population is expected to increase by 45 percent.

[8] The Census Bureau changed the numbering system for Census Tracts and Block Groups from 1990 to 2000. For example, the area designated as Census Tract 79.02, Block Group 9 in the 1990 Census was renamed as Census Tract 79.02, Block Group 7 in the 2000 Census. It should also be noted that the area of the Block Groups have changed. The 2000 Census Tract, Block Group 7 covers a geographically different area than compared to the 1990 block groups.

Overall, the demographic data indicate that residents in Redlands and Highland only make up a small percentage of the total county population. In general, these residents are in middle age. The median age of residents in the vicinity of the Project Area is 31.9 in Block Group 7, 29.3 in the City of Highland, and 35.1 in the City of Redlands, as reported by the 2000 U.S. Census and represented in Table 3.11, *Economic Profile*. For the County of San Bernardino, the median age was 30.3. Within Block Group 7, the median household income is $31,346, which is approximately 34 percent lower than the County of San Bernardino's median of $42,066.

At least 37 percent of the residents in Block Group 7 have a high school diploma. However, the cities of Redlands, Highland, and the county have an average ranging from 70 to 86 percent of residents with high school diplomas.

Table 3.11 Economic Profile

Characteristic	CT 79.02, BG 7	CT 76.02, BG 6	CT 80.01, BG 3	CT 84.01, BG 1	City of Redlands	City of Highland	County of San Bernardino
Median Age	31.9	30.6	34.5	32.1	35.1	29.3	30.3
Gender							
Male	190	920	1,383	568	28,905	16,958	710,807
Female	181	1,039	1,482	578	31,489	17,481	707,573
Median Household Income	31,346	52,929	50,435	64,750	48,155	41,230	42,066
Percent Below Poverty Level	19%	7%	5%	6%	10.5%	21.5%	15.8%
Labor Force							
Unemployed	0%	5%	6%	3%	4.2%	6.5%	4.9%
Education							
High School Graduate or higher	37%	81.5%	87%	84%	86%	70%	73.4%%
College Graduate or higher	0%	17%	22%	22%	31.1%	14%	14%

Source: U.S. Census Bureau Census 2000 Summary File 3.

Economic Characteristics

Relevant Economy

San Bernardino and Riverside counties are known as the Inland Empire, a rapidly growing part of southern California. San Bernardino County is the largest county in the U.S., consisting of over 20,000 square miles. The Project Area is only a small part of San Bernardino County, but the aggregate mining industry in the County supplies construction materials for an extensive development market in southern California.

In this sense, San Bernardino County represents both the demand side (development) and the supply side (aggregate mining) of the construction materials industry. The California

Department of Conservation projects that San Bernardino County is one of the areas with the greatest future need for aggregate. The San Bernardino Region is expected to demand 1,074 million tons of aggregate over the next 50 years, while currently having only 262 million tons permitted for mining.[9]

Because of the significant excess demand for aggregate in the County and in nearby areas, there is little likelihood that the mining of aggregate in the Wash Plan Area would result in unsold surpluses that could lead to price collapses and worker layoffs. An extreme result of surplus production can be weakened companies less able to carry out permit obligations and site restoration. On the other hand, the mining industry in the Wash Plan Area is likely to experience a strong market over an extended period of time, even with fluctuations in the demand of development.

Relevant Employment and Income

In October 2008, San Bernardino County ranked 35th out of the 58 California counties for unemployment, with a 9.0 percent rate. The 2004 to 2007 annual averages of unemployment in San Bernardino County ranged between 4.8 percent and 5.8 percent, indicating that the County, overall, has been significantly affected by the recent economic downturn. The 2004 to 2007 reports of those employed in ―natural resources and mining" declined from 700 to 600, with the 2008 figures expected to reinforce the decline. These declines in employment are assumed to be due to the softened housing market in California, with further declines in employment expected for 2008.[10]

In 2006, per capita personal income in San Bernardino County rose to $27,134 from $25,128 in 2004. This compares to California statewide per capita personal income of $39,626.[11] Annual wages in the aggregate mining industry appear to be higher than the average wage (adjusted to workers/family), possibly higher than the statewide average wage.[12]

[9] Aggregate Availability in California, 2006. California Geological Survey, CA Department of Conservation.
[10] Historical Data for Current Employment Statistics in Riverside-San Bernardino-Ontario MSA, California Labor Market Info, California Employment Development Department. November 2008
[11] Measures of Income, California Employment Development Department. November 2008
[12] Economic Impact of Liberty Quarry, John E. Husing, PhD, February 2007.

DISTRICT/BLM LAND EXCHANGE
2000 CENSUS TRACTS AND BLOCK GROUPS

Figure 3.12

URS

3.7 TRANSPORTATION SYSTEMS AND TRAFFIC

A traffic study was conducted for the Wash Plan EIR by LSA in 2007 to assess potential impacts associated with the proposed land exchange between the BLM and the District. The following sections summarize the results of the traffic study.

3.7.1 Existing Roadways

The transportation network within the Project Area is composed of a mix of interstate, state highway, and local roadways. The circulation system plays a major role in the movement of existing and future mining products within the Project Area. The roads and highways within the vicinity of the exchanged parcels are listed below.

Roads and Highways

City of Highland

- **Orange Street** between the southern City boundary and where it becomes Boulder Avenue is an Alternative Secondary Highway (2) with a dedicated Class II bike lane on both sides;
- **Boulder Avenue** is designated as a Modified Primary Arterial. The Modified Primary Arterial is designated as a four-lane divided roadway, plus a Class I bike lane;
- **Greenspot Road** is classified as a Major Highway with a dedicated Class II bike lane on both sides;
- **Alabama Street** is designated as a Secondary Highway;
- **Palm Avenue** is designated as a Special Collector Street in the area between Baseline and Pacific Street. This is a two-lane roadway with a 52-foot roadway, curb-to-curb, within a 66-foot right-of-way;
- **3rd Street** from Sterling Avenue to Alabama Avenue is designated as a Major Highway; and
- **Greenspot Road** between Orange Street-Boulder Avenue and SR-30 is designated as a Primary Arterial.

City of Redlands

- **Orange Street** is classified as a Minor Arterial;
- **Greenspot Road** is classified as a Minor Arterial; and
- **Alabama Street** is classified as a Major Arterial.

State of California Department of Transportation (Caltrans)

- **State Route 30** is maintained and operated by Caltrans.

3.7.2 Level of Service Standards

As defined in the traffic study, roadway operations and the relationship between capacity and traffic volumes are generally expressed in terms of Level of Service (LOS), which are defined using letter grades A through F, as recommended by the 2000 Highway Capacity Manual analysis methodologies. These levels recognize that, while an absolute limit exists

as to the amount of traffic traveling through a given intersection, the conditions that motorists experience rapidly deteriorate as traffic approaches absolute capacity. Under such conditions, congestion is experienced. There is generally instability in the traffic flow, which means that relatively small incidents can cause considerable fluctuations in speeds and delays. This near-capacity situation is labeled LOS E. Beyond LOS E, capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it. LOS definitions are provided in Table 3.12, *Traffic Level of Service (LOS) Definitions*.

Table 3.12 Traffic Level of Service (LOS) Definitions

LOS	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. The approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number approach full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally, drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volume exceeds capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Source: Transportation Research Board Highway Capacity Manual Special Report 209 1985.

The Project Area spans the jurisdictions of the City of Redlands, City of Highland, and Caltrans. Thresholds of LOS acceptability during peak hours for the three jurisdictions are as follows:

- City of Redlands – acceptable level of service is LOS C;
- City of Highland – acceptable level of service is LOS D; and
- Caltrans – acceptable level of service is LOS D.

Table 3.13*, Existing Level of Service*, shows traffic volumes on major access roadways in the vicinity of the Project Area. As shown, all intersections are within an acceptable level of service.

Table 3.13 Existing Level of Service				
Intersection	**Jurisdiction**	**Control**	**A.M Peak Hour LOS**	**P.M Peak Hour LOS**
Palm Ave/5th Street	Highland	Signal	C	D
Palm Ave/3rd Street	Highland	Signal	C	C
Alabama St/Robertson's Access	Redlands	TWSC	B	C
Alabama St/Cemex Access	Redlands	TWSC	B	C
Church Ave/5th Street	Highland	Signal	B	B
SR-30 SB ramp/5th Street	Caltrans	Signal	C	C
SR-30 NB ramp/5th Street	Caltrans	Signal	C	C
Boulder Ave/5th Street	Highland	Signal	C	C
Orange Street/Cemex Access	Redlands	Signal	A	A

Source: LSA Traffic Study for the Upper Santa Ana River Wash 2007.
Note: TWSC = Two Way Stop Control

3.8 VISUAL RESOURCES

This section describes the inventory of visual resources within the vicinity of the Project Area. The inventory includes a description of the regional landscape setting, viewsheds, and inventory methods and results. This section was prepared through use of the Wash Plan EIR visual simulation and field verification, which included a field photo survey.

3.8.1 Regulatory Setting

Section 102 (a)(8) of FLPMA places emphasis on the protection of the quality of scenic resources on public land. Section 101 (b) of NEPA requires that measures be taken to ensure that aesthetically pleasing surrounding be retained for all Americans. To meet its responsibility to maintain the scenic value of public lands, the BLM has developed the Visual Resource Management (VRM) system. The VRM system is implemented through the SCRMP and the Management Framework Plan process. The BLM contrast rating system is used to determine potential visual impacts of the Proposed Action and alternatives under consideration in this document.

The BLM lands within the Project Area are designated as VRM Class III under the SCRMP. The objective of VRM Class III management is to partially retain the existing character of the landscape. The level of change to the characteristic landscape in VRM Class III areas should be low. BLM management activities may attract the attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant features.

3.8.2 Environmental Setting

The Project Area is located at the base of the San Bernardino Mountains in an area created by periodic flooding of the Santa Ana River, City Creek, Mill Creek, and Plunge Creek. In the

past, these waterways were not channelized and large flows in the mid-1800s created the wash surface and determined the location of the present channels. During heavy rainfall, usually occurring in the winter months, water flowed from local mountains via the creeks and river, and combined to create a fast-moving, turbulent river with a high sediment load. When the rainfall subsided, the river and creeks returned to their smaller courses and left large areas between the waterways consisting of rocks, debris, and sediment, creating the Project Area.

The limitations on land use imposed by potential flooding have contributed to the open, undeveloped character of the area. Vegetation consists of native scrub types with many plants growing only during the wet winter and spring months. The wash appears as an open, sandy area interspersed with boulders and rocks. Vegetation is sparse and commonly is less than three feet in height.

The visual character of the area is dominated by mid-range and long-range views of the surrounding mountains and valley floor. Predominant views from Redlands are the San Bernardino Mountains, a central physical feature in the region. During periods of clear weather, these mountains dominate the landscape. Looking south from the City of Highland, the views are expansive and foothills can be seen in the distance. The Wash Plan Area, like the mountains, is a dominant feature, primarily due to its lack of development and the patterns of vegetation. Quarries and mining operations are visible, and together with the prominent State Route 210 (SR-210) freeway (above-grade alignment) contribute to complex patterns of form, texture, and color that make up the aesthetic environment.

The landscape contains several cultural modifications, including highways, roads, transmission lines, and residential and commercial development. Further, current mining operations exist adjacent to the Project Area. This landscape is heavily modified by ground disturbance, presence of structures, and frequency of large-truck travel.

Adjacent uses include the Redlands Municipal Airport to the south and the Redlands Wastewater Treatment Facility to the southwest. Two north-south paved roads cross the Project Area: Orange Street-Boulder Avenue and SR-30. Greenspot Road forms a portion of the northern and eastern boundary, and Alabama Street is the western boundary.

3.8.3 Methodology

Sensitive viewing areas were identified and inventoried within a five-mile radius of the Project Area. The identification of sensitive viewing areas within the viewshed was conducted through review of existing land use data, agency contacts, and field surveys/reviews. The following is a representative list of the sensitive viewing areas that were considered during the inventory:

- Residential areas (e.g., residences closest to the Project Area);
- Travel routes: major roads or highways used primarily by origin/destination travelers and designated scenic roads (e.g., local residents, workers, and commuter travelers along Greenspot Road, Orange Street-Boulder Avenue and SR-210); and
- Parks, recreation areas, wildlife areas, visitor centers, areas used for camping, picnicking, bicycling, boating, or other recreational activities.

During field surveys conducted within the immediate project vicinity, it was noted that the residential areas present in the vicinity of the Project Area have few or no views of the Project Area. The nearest residential developments lie approximately 0.5 mile to the north, 0.77 mile to the southwest, and 0.6 mile to the south of the Project Area. These residential communities have only limited views of the Project Area, as fences, buildings, or other man-made structures obstruct them. Also, the Project Area is essentially surrounded by industrial and commercial uses, which block most residential views to the Project Area.

Visual Resource Management Methodology

The BLM has developed the VRM Methodology to identify and quantify scenic values, and to analyze the impacts of proposed landscape modifications. This methodology is used to establish the scenic quality of an area and then to evaluate the degree of contrast between the existing landscape and the Proposed Action.

When evaluating scenic attractiveness, both natural and man-made components within the Visual Sphere of Influence (VSOI) were considered as they relate to either adding to or detracting from the overall landscape character within a specific setting. Scenic attractiveness levels are established by evaluating the distinctiveness and diversity of a particular landscape setting in relation to the following seven key elements:

- Landform: Topography becomes more interesting as it gets steeper, more massive, or more severely or universally sculptured. Outstanding landforms may be monumental, as the Grand Canyon, or they may be exceedingly artistic and subtle as certain badlands, pinnacles, arches, and other extraordinary features.
- Vegetation: Primary considerations are the variety of patterns, forms, and textures created by plant life, including short-lived displays when they are known to be recurring or spectacular.
- Water: Water may add movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in electing the rating score.
- Color: The primary consideration is the overall color(s) of the basic components of the landscape as they appear during seasons or periods of high use.
- Effects of adjacent scenery: The degree to which scenery outside the scenery rating unit enhances the overall impression of the scenery within the rating unit.
- Scarcity of the landscape: This factor provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within on physiographic region.
- Cultural modifications: Cultural modification should be considered and may detract from the scenery in the form of a negative intrusion or complement or improve the scenic quality in the form of a unit.

In rating these elements, a score is based on evaluation criteria, using a graduated range (0-5). The inventory and evaluation of the above elements assist with the characterization of scenic attractiveness within the VSOI. In general, landscapes are characterized by three levels, A through C:

Class A: Areas have outstanding diversity or interest; characteristic features of landform, water, and vegetation are distinctive or unique in relation to the surrounding region. These areas contain considerable variety in form, line, color, and texture.

Class B: Areas have above-average diversity or interest, providing some variety in form, line, color, and texture. The natural features are not considered rare in the surrounding region but provide adequate visual diversity to be considered of value.

Class C: Areas have minimal diversity or interest; representative natural features have limited variation in form, line, color, or texture in the context of the surrounding region. Discordant cultural modifications (e.g., substations, transmission lines, and other cultural modifications) can be highly noticeable, which can reduce the inherent value of the natural setting.

The viewpoints for the Project Area are Class C and Class B landscapes (SBVWCD 2008). The viewpoints of most relevance for the purposes of the Proposed Action are shown in Figure 3.13, *Viewpoint and Simulation Locations*, and are described in Table 3.13, *Scenic Quality of Viewpoints, Scoring Quality Rating*.

Table 3.14 Scenic Quality of Viewpoints, Score Quality Rating

View Point	Landform	Vegetation	Water	Color	Adjacent Scenery	Scarcity	Cultural Modification	Total Score	Score Quality Rating
1	2.25	2.75	0	2.75	3.75	2	-0.25	13	B
2	2.75	1.5	0	2.5	2.5	2.25	-2.5	9.25	C
3	1.75	1.5	0	1	2.5	1	-3.5	4.25	C
4	1.75	1.5	0	2.75	4.25	3.75	0	14.75	B
5	1.25	1.75	0	1.5	2.25	1.5	-1.5	6.75	C
6	1.25	2.75	0	1.5	1	2.5	-1	6	C
7	2.25	4	0	2.75	3.5	2.5	0	15	B
8	2.75	2	0	2.75	1.5	1.5	1.75	12	B

Source: Wash Plan EIR 2008.

DISTRICT/BLM LAND EXCHANGE
VIEWPOINT AND SIMULATION LOCATIONS

Figure 3.13

URS

The VRM system is designed to separate the existing landscape and the Project Area into their respective features and elements and to compare each part to the other to identify parts that are incompatible (BLM 1986). The resulting VRM landscape classifications are:

VRM Class I: The objective of this class is to preserve the existing character of the landscape. Changes to the landscape character should not be evident.

VRM Class II: The objective of this class is to retain the existing character of the landscape. Changes to the landscape character may attract slight attention but should be subordinate to the visual setting.

VRM Class III: The objective of this class is to partially retain the existing character of the landscape. Changes to the landscape character may begin to attract attention but should not dominate the visual setting.

VRM Class IV: The objective of this class is to allow for activities that modify the existing character of the landscape. Changes to the landscape character may attract attention and dominate the visual setting. However, these activities should minimize changes to the landscape where possible.

According to the SCRMP, the Selected Lands identified for disposal by the BLM are designated as VRM Class III, although they exhibit characteristics of VRM Class IV lands, due to the proximity to heavy cultural modification and disturbance. District Offered Lands to be acquired by the BLM are VRM Class III landscape and are far less disturbed than the Selected Lands.

3.9 CULTURAL RESOURCES

The purpose of this section is to identify cultural resources within the Project Area's Area of Potential Effect (APE) and to determine if those resources meet federal criteria for designation as historic properties. Determination of whether the Proposed Action would have an adverse effect on those historic properties, and mitigation recommended to reduce those adverse effects, are described in Section 4.10, *Cultural Resources*.

3.9.1 Regulatory Setting

The land exchange is a federal undertaking in that it requires permitting from a federal agency. As such, the Proposed Action must comply with NEPA. NEPA requires the federal government to use all practicable means to preserve important historic, cultural, and natural aspects of our national heritage. In addition to compliance with NEPA, this EIS is being prepared in conformance with Sections 106 and 110 of the National Historic Preservation Act (NHPA), as amended. Section 106 requires federal agencies with either direct or indirect jurisdiction over a proposed undertaking to take into account the effect of the undertaking on any historic property that is National Register of Historic Places (NRHP)-listed or eligible. Section 110 requires federal agencies to assume responsibility for the preservation of historic properties under federal control.

Compliance with NEPA is guided by BLM Manual Section 1790 and BLM Handbook H-1790-1. Environmental review is required for Cultural Resource Project Plans (CRPP). Specifics regarding cultural resources are addressed in BLM Manual Sections 8100 through 8170. Each existing germane NEPA document is identified and reviewed to determine if it can be used to satisfy NEPA requirements for the CRPP, or if a new document is needed. This must in all cases include examination of the environmental impact statement/environmental assessment for the regional land use plan and local plan, if any, under which the CRPP is being prepared. Environmental analysis (usually resulting in an environmental assessment tiered to the existing environmental documents) is completed as necessary to fully disclose projected impacts of the actions covered by the CRPP. Documentation of the results of the review and any subsequent environmental analysis is conducted as specified in H-1790-1.

Historic properties are defined as prehistoric and historic sites, buildings, structures, districts, and objects included in, or eligible for, inclusion in the NRHP, as well as artifacts, records, and remains related to such properties (NHPA §301[5]). Traditional cultural resources are places or other resources that are significant to traditional cultural groups. Those that are eligible for the NRHP typically are important for their associations with cultural traditions, historically important members of traditional societies, or embody characteristics of traditionally important artifacts or features. Code of Federal Regulations 36 CFR §800 stipulates that the State Historic Preservation Officer (SHPO) must be consulted to determine the eligibility of a historic property for listing in the NRHP. Under 36 CFR §60.4, cultural resources may be eligible for nomination to the NRHP if they —... possess integrity of location, design, setting, materials, workmanship, feeling and association…" and are:

(a) Associated with events that have made a significant contribution to the broad patterns of our history; or

(b) Associated with the lives of persons significant in our past; or

(c) 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

(d) Have yielded, or may be likely to yield, information important to prehistory or history.

3.9.2 Environmental Setting

Prehistoric Background

The prehistory of much of southern California is best described by a general chronology that was originally developed for the coastal region by William Wallace in 1955, which is applicable to many near-coastal and interior areas. Supported by radiocarbon dates from key archaeological sites, Wallace (1955, 1978) established a four-stage sequence that, after nearly 50 years, remains widely applicable today. He identified four archaeological horizons based on types of artifacts and features that are diagnostic of broad periods in the prehistory of southern California:

- Horizon I: Early Man (before 7,000 years ago);
- Horizon II: Millingstone Assemblages (7,000–3,500 years ago);
- Horizon III: Intermediate Cultures (3,500–1,500 years ago); and
- Horizon IV: Late Prehistoric Cultures (1,500–historic contact, ca. 200 years ago).

Horizon I, Early Man, included a speculated, but at the time (1955) unsubstantiated, late Pleistocene occupation. Since Wallace formulated his chronology, sites on the central coast and at Buena Vista Lake, for example, have yielded radiocarbon ages between 9,500 and 8,000 years ago (Greenwood 1972; Fredrickson and Grossman, 1977; Glassow, 1997). Clovis-style fluted projectile points at least 11,000 years old have been found in the southern San Joaquin Valley, Mojave Desert, Tehachapi Mountains, and elsewhere (Moratto, 1984), which substantiate Wallace‘s belief in a late Pleistocene period of occupation.

The Early Man Horizon is usually thought to have been characterized by small, highly mobile bands of hunters who were drawn to Late Ice Age resources—broad inland lakes and marshes, and large game. Now known to correspond to the better-defined Western Pluvial Lakes Tradition (WPLT) of interior deserts or Paleo-Coastal Tradition (PCT) of the Pacific littoral zone (both 11,000–8,000 years ago), sites from this period show a greater diversity of ecological settings and approaches to subsistence (Moratto, 1984). Sophisticated WPLT/PCT lithic technology featured finely crafted projectile points, crescents, scrapers, and knives.

Horizon II, Millingstone Assemblages, represents a long period of time characterized by small but less nomadic groups that probably relied on a seasonal round of settlement that may have begun during earlier millennia (et al). In many areas, the seasonal round likely included both inland and coastal residential bases. Millingstone sites are marked by the appearance of seed-grinding tools (such as manos, metates, and hammerstones), usually in large numbers. These often occur in association with shell middens in coastal locations. Seeds from sage, buckwheat, and various grasses provided staple foods, and less emphasis appears to have been placed on hunting. Coarse-grained, durable, lithic materials (such as quartzite, rhyolite, and other volcanic materials) are more common in flaked stone tools from this period than fine-grained, siliceous materials such as chert and jasper.

During Horizon III, Intermediate Cultures, the first evidence of acorn processing appeared in the presence of mortars and pestles. As a high calorie, storable food, acorns contributed to increasing sedentism and more complex social organization (Johnson and Earle, 1987). The absence of small projectile points indicates that the bow and arrow—a hallmark of the Late prehistoric period—had not yet been introduced, but elaborate dart points are a common artifact of this era. Along the coast, the Intermediate Period saw the use of more diverse marine resources, evident in bone and shell fishhooks/gorges, harpoon points, and net weights. It was during this time that the introduction of plank canoes is postulated. Shell and steatite beads and ornaments were produced in larger quantities and in a variety of styles. Regional exchange intensified with non-local materials such as steatite, serpentine, fused shale, and obsidian, all of which were obtained through trade (McIntyre, 1990).

Horizon IV, Late Prehistoric Cultures, exhibits larger populations and a wider variety of material culture and social institutions. Storable surplus foods (such as acorns and dried

meats, especially fish and shellfish) allowed populations to increase and social mechanisms to diversify. New artifact classes, such as small triangular projectile points and steatite shaft straighteners (indicating bow and arrow technology), some types of shell beads, and ceramics (in some areas) are diagnostic of the Late Prehistoric era. The production of pictographs (rock paintings) is also thought to be a hallmark of this period. It is during this period that the Uto-Aztecan speaking emigrants from the Great Basin appeared in what is now Riverside, San Bernardino, Los Angeles, Orange, northern San Diego, northern Imperial, and southern Kern Counties, as well as the southern Channel Islands.

Late Prehistoric archaeology is generally better understood because the late nineteenth and early twentieth century descendants of these groups provided additional information to early anthropologists. Unfortunately, introduction of foreign diseases, displacement, and absorption into other groups caused by the arrival of the Spanish, Mexican, and American populations decimated native populations to such low numbers that by the mid- to late-1800s, they were but a minor portion of the overall population. For this reason, very little interest in native inhabitants and their prehistory was initially generated.

Ethnographic Background

By the turn of the 20th Century, anthropologists began to collect ethnographic data about traditional native lifeways in California. Knowledge of the Cahuilla and Serrano cultures has been reconstructed through linguistic, ethnographic, and ethnohistoric research, as well as archaeological analysis.

The Project Area is situated at the boundary of the two Native American groups: the Serrano, whose village of Yucaipa was approximately eight miles to the southeast; and the Cahuilla, who traditionally occupied the San Timoteo Canyon area to the south (Bean and Smith, 1978; Bean, 1978).

The Serrano and Cahuilla are Native American groups that are believed to have descended from the same ancestors that arrived in this region from the Great Basin early in the Late Prehistoric period. Thus, the two groups were closely related by linguistic and socio-cultural similarities. However, the cultural trajectory of the groups differed dramatically, with the Cahuilla forming a complex system of rituals and control of resources such as stands of oak and mesquite.

They maintained permanent settlements throughout their territory. Ethnographic data about the Cahuilla were generated by Barrows (1900), Kroeber (1908, 1925), Hooper (1920), Strong (1929), Drucker (1937), Patencio (1943), Bean (1964, 1972, 1978), Bean and Saubel (1972), Bean, Vane, and Young (1991) and Heizer (1974). Additional information is found in general publications by James (1960), Bean and Bourgeault (1989), Bean and Lawton (1979), and Dozier (1998).

The Serrano, in contrast to the Cahuilla, had fewer permanent villages with those mostly associated with mountain and adjacent environs (Strong 1929). The Mojave Desert, which made up a large part of the Serrano territory, contains resources spread over a larger area. The adaptive response to these exigencies was a more mobile lifeway. These perceptions may be, however, a reflection of lack of early research concerning the Serrano and the affects

of contact with the early historic era occupants, especially as they relate to the establishment of the Asistencia near Redlands and the subsequent integration of the Serrano into that system.

Historic Background

The major historic periods for southern California listed below, are defined by key events documented by various sources:

- Spanish Period: 1769–1822;
- Mexican Period: 1822–1848; and
- American Period: 1848–Present.

The Spanish Era encompasses the period of occupation by European descendants. This period marked a time of disease, exploitation, and deculturation of the Native peoples beginning circa 1769 with the founding of the *Misión San Diego de Alcalá*, the first in a chain of twenty-one missions throughout the state. The occupation and control by the Spanish was passed on to Mexico after the latter gained its independence in 1821. The Mexican Period, in turn, gave way to control by the U.S., subsequent to the Mexican-American War and the treaty of Guadalupe Hidalgo in 1848.

The Spanish Period in Alta California included the establishment of the mission system with the founding of the *Misión San Diego de Alcalá*, originally at the site of the San Diego Presidio. However, none of the 21 coastal missions had substantive influence on the inland tribes occupying the APE. In 1819, priests from the Misión San Gabriel Arcángel established the Asistencia de San Bernardino. The Asistencia functioned as an outpost for cattle-grazing activities associated with the mission system, and later formed the backbone of the Mexican Period‘s rancho economy.

Mission life brought with it the introduction of agriculture (corn, wheat, olives, and others), as well as herds of grazing cattle and horses. Native Americans were recruited as neophytes for the dual purpose of spreading the Catholic religion among the native population and supplying the missions with labor. Despite the transition to the Mexican Period, the structure of the Spanish Period was retained for a time and the missions continued to operate as they had in the past.

Mexico‘s independence from Spain in 1821 ushered in the Mexican Period in Alta California. Mexico secularized the missions and continued the Spanish practice of granting large tracts of ranchlands to prominent soldiers, civil servants, and other settlers. Little visible evidence of the transition of power from Spain to Mexico was immediately evident in the frontiers of Alta California. Laws and practices of the earlier government remained in place until shortly before the 1834 secularization of the missions a decade after Mexican rule began.

Secularization freed vast tracts of land for redistribution. Although several grants of land were made prior to 1834, this date marks the era of the rancho. Agriculture was overshadowed by the trade in cattle hides and tallow. It is the trade in hides along the California coast about which William Henry Dana writes in his epoch novel *Two Years*

before the Mast. The hide trade made the harbor at San Diego and other coastal stops, such as San Juan Capistrano, favorite ports-of-call for the sailing ships of the era. With this trade came a degree of prosperity to the region. The Pueblo de San Diego and the ranchos grew, often with the aid of Native American labor.

However, this era was short-lived. The Mexican-American War of 1846–1848 was to bring a close to the era of Hispanic rule. The Treaty of Guadalupe-Hidalgo would cede Alta California (along with Arizona, New Mexico, and Texas) to the U.S.

The American Period began with Mexico‘s cession of California in 1848. However, prior to this time, Americans were well established; a number of them obtained Mexican citizenship and married into the local families. The Mexican-American War tested the loyalty of the American emigrants to their adopted country, some of which elected to aid the American forces, while others maintained their allegiance to Mexico and, more relevantly, to California. The Native American community was, for the most part, a neutral observer during the war.

A Lands Commission was created in response to the Act of 1851, which provided a means of validating land ownership throughout the state through settlement of land claims. Few Mexican ranchos remained intact because of legal costs and a lack of what Americans considered to be sufficient evidence to provide title claims. Much of the land that once constituted rancho holdings became public land, available for settlement by emigrants to California. The Native American community was further marginalized as American settlers occupied their lands.

The influx of people to California was the result of various factors, including the discovery of gold in the state, the end of the Civil War and subsequent availability of free land through passage of the Homestead Act, and the U.S.‘ growing importance as an agricultural area, which was supported by the construction of connecting railways. The growth and decline of towns occurred in response to an increased population and the economic ―boom and bust” period of the late 1880s.

As more Americans ventured into southern California at the end of the Nineteenth Century, the old Spanish land grants were gradually broken up and the land changed hands many times. Agriculture and ranching were prime activities of the newcomers to what is now San Bernardino County, and, by the turn of the Twentieth Century, small towns had been created with all the facilities necessary for future growth: post offices, schools, churches, small commercial establishments, and growing residential sections. The Native American community was assigned to reservations, with little consideration of their past lifeways or future development as American citizens.

3.9.3 Summary of Research and Survey Results

Survey of the project APE resulted in the detailed field inspection and site recording of 18 cultural resources sites: four previously identified sites were relocated and updated, and 14 newly identified sites were located and recorded. Two historic-era resource types were identified: 15 trash scatters, and 3 water conveyance (flood control) systems. Evaluation of these resources through archival research and field investigations has concluded that none of

the 18 cultural resources meets the NRHP criteria for eligibility and/or the resources lack integrity. They are, therefore, recommended not eligible.

Table 3.15 Recorded Cultural Resource Sites within the Project Area

Site #	Location
CA-SBR-6074H	This site, located northeast of the intersection of Orange Street and the quarry access road north of Dishong Street, was first recorded by J. Wishner et al. in 1987. It consists of a single-episode domestic historic dump site composed of dozens of metal cans, historic ceramic fragments, and broken and intact glass bottles. Identifiable marks on the glass range in date from the 1910s to 1960s. The site measures approximately 10-by-10 meters, covering an area of 80 square meters.
CA-SBR-6075H	This site, located northeast of the intersection of Orange Street and the quarry access road north of Dishong Street, was first recorded by M. A. Doyle et al. in 1987. It consists of five concentrations of historic domestic debris. One locus is composed of metal scraps, one of red bricks, and the other three of glass, ceramic, brick, and metal kitchen refuse. The majority of identifiable marks on glass artifacts indicate a date range of late 1890s to 1900s. The site measures approximately 80-by-35 meters, covering approximately 2,800 square meters.
CA-SBR-6076H	This site, located northeast of the intersection of Orange Street and the quarry access road north of Dishong Street, was first recorded by S. Wakefield et al. in 1987. It consists of three concentrations of historic domestic debris. Each locus is composed of metal cans, historic ceramics, and glass bottles, along with other miscellaneous kitchen refuse. Identifiable marks from glass in Locus 3 give a date range of 1860s to 1910s. The site measures approximately 112 by 35 meters, covering approximately 3,300 square meters.
CA-SBR-6087H	This site, located southwest of the intersection of Dishong Street and Church Street, was first recorded by J. Sorenson et al. in 1987. It consists of a series of historic dumping locations in three main loci, consisting mainly of glass, ceramics, and metal cans, with modern debris scattered throughout the site. The site measures approximately 65 by 53 meters, covering approximately 2400 square meters.

Source: San Bernardino Museum 2008.

Table 3.16 Cultural Resources Sites within the District Cultural Resources APE

Site Designation	Acres	Area	Overall Site Density	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP Recommendation	Management Re-commendation
SBVWCD-001	0.19	8,465 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	550+ artifacts consisting of sanitary, matchstick, cone-top cans, glass, and ceramics from the 1900s to the 1960s	Good	Yes	Not Eligible	None
SBVWCD-002	0.19	8,434 ft^2	0.015 artifacts per ft^2	AH4 Privies/dumps/trash scatters	125+ artifacts consisting of 100+ sanitary, and matchstick cans, glass, and ceramics from the early 1950s	Good	Yes	Not Eligible	None
SBVWCD-003	23.82	1.04 million ft^2	0.096 artifacts per ft^2	AH4 Privies/dumps/trash scatters	100,000+ artifacts 9 loci consisting of sanitary, hole-in-cap, and match-stick cans, glass, ceramics, brick, tile, asphalt, batteries from the 1900s to the 1960s.	Good	Yes	Not Eligible	None
SBVWCD-004	N/A	N/A	N/A	AH6 Water conveyance system	Historic “V” ditch canal, with 7 concrete flood gate and 2 overflow pipe features.	Fair	No	Not Eligible	None

Table 3.16 Cultural Resources Sites within the District Cultural Resources APE

Site Designation	Acres	Area	Overall Site Density	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP Recommendation	Management Re-commendation
SBVWCD-005	0.03	1,380 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	20+ artifacts Consisting of six cans, glass, ceramics, and hardware from the 1950s	Good	Yes	Not Eligible	None
SBVWCD-006	0.04	1,653 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	220+ artifacts consisting of 200+ cans, remains of glass vessels, and porcelain from pre-1945	Fair	Yes	Not Eligible	None
SBVWCD-007	N/A	N/A	N/A	AH6 Water conveyance system	Historic “V” ditch canal segments (2), with large rounded cobble-lined walls.	Fair	Yes	Not Eligible	None
SBVWCD-008	0.76	33,023 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	500+ artifacts consisting of 100+ cans, remains of glass vessels, 150+ ceramics frags, metal hardware frags, construction remains, and personal grooming remains from pre-1945	Fair	Yes	Not Eligible	None

Table 3.16 Cultural Resources Sites within the District Cultural Resources APE

Site Designation	Acres	Area	Overall Site Density	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP Recommendation	Management Re-commendation
SBVWCD-009	0.38	16,480 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	100+ artifacts consisting of 50+ cans, license plates, glassware, ceramics, and construction debris from the 1930s to 60s	Fair	Yes	Not Eligible	None
SBVWCD-010	0.12	5,130 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	250+ artifacts consisting of 130+ cans, glassware, ceramics, transportation materials and construction debris from 1900-15 and 1940s to 50s	Fair	Yes	Not Eligible	None
SBVWCD-011	0.02	718 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	20+ artifacts consisting of 10+ hole-in-cap cans, license plates, bottles, vase, and porcelain cup from 1915 to 1945	Good	Yes	Not Eligible	None
SBVWCD-012	N/A	N/A	N/A	AH6 Water conveyance system	“V” ditch canal and irrigation canals with 10 flood gates and 8 overflow pipes.	Fair	Unlikely-eroding basalt outcrop	Not Eligible	None

Table 3.16 Cultural Resources Sites within the District Cultural Resources APE

Site Designation	Acres	Area	Overall Site Density	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP Recommendation	Management Re-commendation
SBVWCD-013	0.01	217 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	40+ artifacts consisting of 25+ cans, glassware, and ceramics from 1917 to 1929	Good	Yes	Not Eligible	None
SBVWCD-014	0.02	793 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	150+ artifacts consisting of 100+ bottles, 6 cans, ceramics, houseware, and hardware debris from 1875 to 1930s	Good	Yes	Not Eligible	None
CA-SBR-6074H UPDATE	0.02	679 ft^2	0.11 artifacts per ft^2	AH4 Privies/dumps/trash scatters	75+ artifacts consisting primarily of metal cans, ceramics and glass from 1880s to 1930s	Good	Yes	Not Eligible	None
CA-SBR-6075H UPDATE	0.92	40,179 ft^2	0.01 artifacts per ft^2	AH4 Privies/dumps/trash scatters	400+ artifacts, consisting primarily of metal cans and debris, ceramics, glass and bricks from 1880s to 1930s	Good	Yes	Not Eligible	None
CA-SBR-6076H UPDATE	0.36	15,493 ft^2	0.039 artifacts per ft^2	AH4 Privies/dumps/trash scatters	600+ artifacts, consisting primarily of metal cans, metal kitchenware, ceramics and glass from 1880s to 1920s	Good	Yes	Not Eligible	None

Table 3.16 Cultural Resources Sites within the District Cultural Resources APE

Site Designation	Acres	Area	Overall Site Density	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP Recommendation	Management Re-commendation
CA-SBR-6087H UPDATE	1.58	68,786 ft^2	0.065 artifacts per ft^2	AH4 Privies/dumps/trash scatters	1500+ artifacts, consisting primarily of metal cans, kitchen wares, ceramics, glass, hardware, personal and grooming materials, and a pet grave from 1880's to 1920	Good	Yes	Not Eligible	None

DISTRICT/BLM LAND EXCHANGE
UPDATED AND NEWLY IDENTIFIED CULTURAL RESOURCES

Figure 3.14

URS

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 ANALYSIS METHODS

The impact analysis and conclusions in this chapter are based on a review of information gathered from site reconnaissance, existing literature and studies, and the analysis contained in the Wash Plan EIR (SBVCWD 2008), and incorporated herein by reference.

The analysis follows CEQ regulations implementing NEPA that state that an EIS should determine significance by considering both the context in which the action would occur and the intensity of the action (40 CFR 1508.27). Context and intensity are often further broken down into components for impact evaluation. The context comprises the extent of the effect (geographic extent or extent within a species, ecosystem, or region) and any special conditions, such as endangered species status or other legal ramifications. The intensity refers to the scale of impact to each of the resources considered under the EIS. Impacts to each resource topic are discussed in proportion to their significance level. Where impacts are minor, according to 40 CFR 1502.2 (b), there is ~~o~~nly enough discussion to show why more study is not warranted on issues that are not significant."

The analysis includes effects that can be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect (secondary) effects are caused by the action and occur later or farther away, but are still reasonably foreseeable. Cumulative effects are the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. For the purposes of this EIS, direct effects are limited to the exchange of land ownership between the BLM and District along with the SCRMP Amendment that allows the exchange and assigns new BLM use designations to the federal land within the Upper Santa Ana Wash. Direct effects are generally confined to the parcels involved in the land exchange and SCRMP Amendment. (See 40 CFR sec. 1508.8(a).) Indirect effects are considered within the boundaries of the Wash Plan Area. Indirect effects may occur as a result of the land exchange and SCRMP Amendment considered, along with the reasonably foreseeable implementation of the Wash Plan as described in the 2008 EIR. (See 40 CFR sec. 1508.8(b).) Cumulative effects are the combined consequences of direct and indirect actions in the general vicinity of the Wash Plan, taking into account other past, present, and reasonably foreseeable future actions. (See 40 CFR sec. 1508.7.) Direct and indirect effects are discussed for each resource topic in Section 4.2, *Air Quality*, through Section 4.10, *Cultural Resources*. Cumulative impacts are discussed in Section 4.11, *Cumulative Effects*. Mitigation measures to minimize or avoid impacts that are under the control of, or require the cooperation of, the BLM are included in each section, as appropriate. Mitigation under the control of the District, state or local government are incorporated by reference from the Wash Plan EIR. Each resource section begins with a discussion of impacts that would be common to both the No Action and the Proposed Action alternatives, and then addresses the impacts that would differ with each alternative.

4.2 AIR QUALITY

This section evaluates potential air quality impacts and describes measures recommended to decrease the significance of the impacts. Related air quality analysis and calculations are contained in Appendix D of the Wash Plan EIR (SBVWCD 2008), which is herein incorporated by reference.

Impact Criteria

Potential air quality impacts could occur if either alternative generates new sources of substantial air pollutants, increase the intensity or duration of air quality impacts to sensitive receptors, or if they would:

- Violate the National Ambient Air Quality Standard;
- Violate the California Ambient Air Quality Standard;
- Contribute substantially to an existing air quality violation;
- Expose sensitive receptors to substantial pollutants concentrations; or
- Conflict with adopted environmental and regional transportation plans of the community or region.

These impacts are considered in terms of consistency with air quality plans, criteria pollutant emissions, CO concentrations, air toxics emissions, and GHG emissions.

4.2.1 Impacts Common to All Alternatives

Impacts on Air Quality

Neither alternative would generate any direct effects to air quality. Under both alternatives, mining, and hauling activities on unpaved access roads in the Project Area would continue to generate potential air emissions.

Consistency with Local Air Quality Management Plan, Regional Transportation Plans, and other State and Federal Implementation Plans

Both the No Action and Proposed Action alternatives would be consistent with Local, Regional, State and Federal air quality plans. There would be no violation of local and regional implementation plans because existing and future mining activities would be consistent with the SCAQMD AQMP, the San Bernardino County General Plans, SANBAG‘s Regional Transportation Plans, the general plans of the cities of Highland and Redlands, or other applicable specific plans prepared in vicinity of the Project Area. Indirect effects to air quality resulting from change in employment or populations projections are not expected to result from the Proposed Action.

Criteria Pollutant Emissions

Under both alternatives, the allowance of mining activities within the Project Area would cause emissions of criteria pollutants. Emissions would be generated by on-site mobile

sources, on-site stationary sources, fugitive dust, mining expansion, and District operations and construction (as discussed in the following sections).

The nearest sensitive receptor to the Project Area is an existing residential development located approximately 1,175 feet away in the City of Highland. Figure 4.1, *Sensitive Receptor Map*, shows the nearest sensitive receptor to mining operations in the Project Area.

On-Site Mobile Source Emissions

On-site mobile source emissions within the Project Area include vehicle and heavy-duty equipment exhaust emissions. On-site mobile source emissions are associated with operation and maintenance of the District's facilities, adoption of SCRMP Amendment, rights-of-way for future roads and trails, and the establishment of habitat areas through the land exchange. This category includes aggregate haul trucks, dozers, loaders, scrapers, graders, and on-site maintenance vehicles. Emissions from this equipment category are dependent upon the aggregate removal rates from the quarry and distance that these materials must be hauled for delivery to the processing facility.

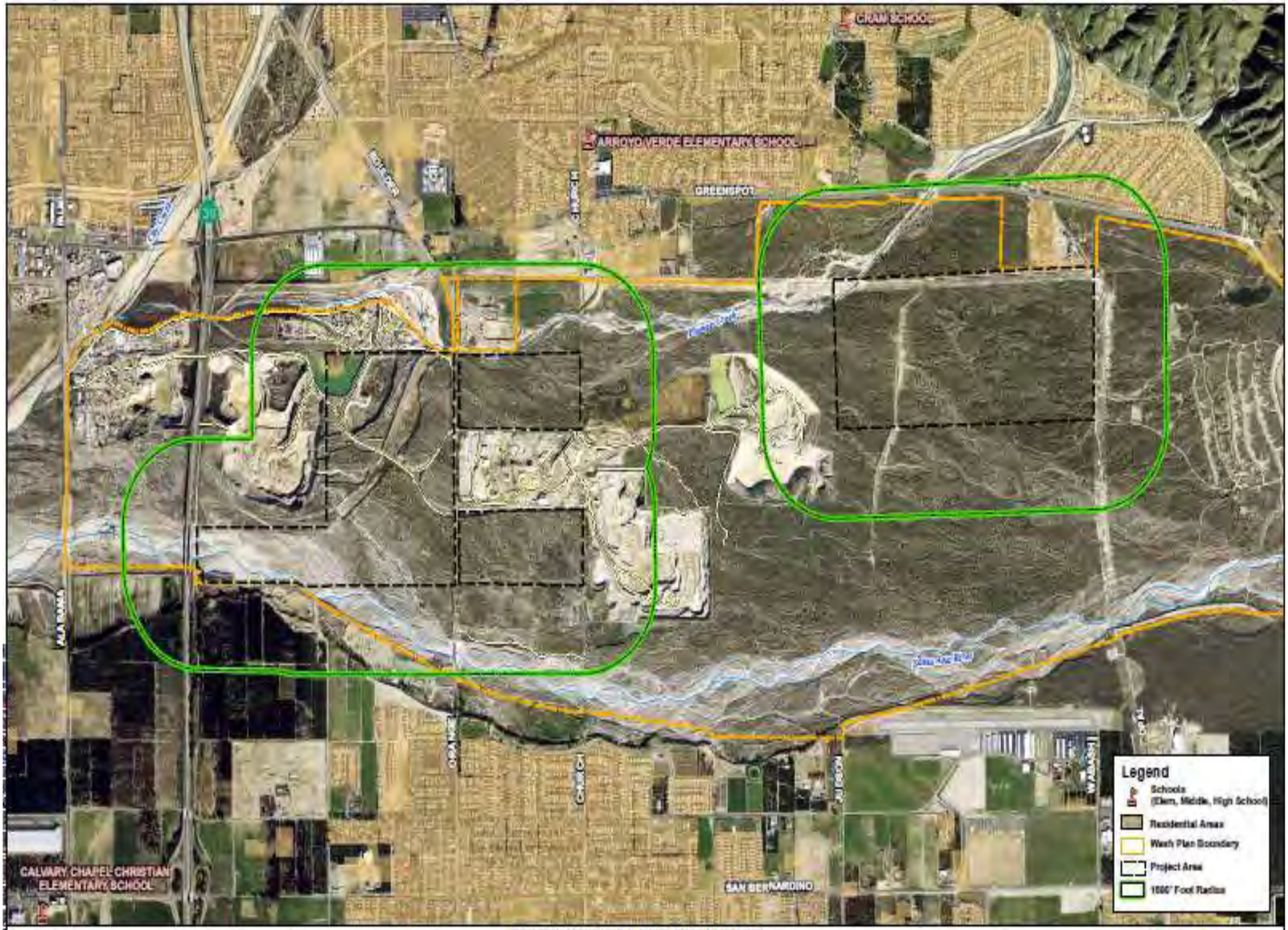
On-Site Stationary Source Emissions

No new on-site stationary source emissions would result from the No Action Alternative or Proposed Action Alternative. All stationary emissions in the area—including those from the aggregate processing facilities, asphalt plants, and any other stationary sources such as electrical generators—would continue to occur off-site. All of these emission sources are controlled separately by the SCAQMD's permitting process.

Fugitive Dust Emissions

For both alternatives, mining activities in the Wash Plan Area have the potential to cause fine soil particles to be released to the atmosphere upon exposure to air currents. Disturbed areas that are treated using dust-control measures and undisturbed areas that are left undisturbed for periods longer than one year are typically no longer a major source of potential wind erosion emissions. Fugitive dust (PM_{10} and $PM_{2.5}$) would be generated by mining activities in the Wash Plan Area and by future mining activities on the Selected Lands, including loading and dumping of haul trucks and vehicle travel on unpaved roads. Fugitive dust emissions from each of these sources are expected to continue as an indirect impact associated with both alternatives.

All future mining and water-conservation operations on the exchanged parcels would be required to comply with standard regional rules—SCAQMD Rule 402, Rule 403, and Rule 1157—that assist in reducing air pollutant emissions. Rules 403 and 1157 recommend controlling fugitive dust through the best-available control measures and dust-suppression techniques so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Rule 402 requires implementation of dust-suppression techniques to prevent fugitive dust from creating a nuisance off-site. Table 4.1, *Fugitive Dust Emissions from Continuing Mining Activity*, lists an inventory of fugitive dust emissions from anticipated mining activities in the Project Area after control measures are applied.



DISTRICT/BLM LAND EXCHANGE
SENSITIVE RECEPTOR MAP

Figure 4.1

URS

Table 4.1 Fugitive Dust Emissions from Continuing Mining Activity	
Fugitive Dust Sources	**PM_{10} Estimated Emissions Rate (lbs/day)**
All Quarry Operations	750*
Ready-Mix Plants	35
Rock Plant	45
Total	**830**

Sources: Cemex 2006; Robertson's Ready Mix 2006; LSA Associates, Inc. 2007
Notes: * Future mining operations (which could indirectly result from the Proposed Action) are the only source of fugitive dust emissions expected to occur on the Selected Lands. No source of fugitive dust emissions is anticipated to originate on the Offered Lands.

Table 4.2, *Criteria Pollutant Concentrations at Nearest Residences*, shows the estimated concentrations of criteria pollutants at the nearest residences which would result from continuing mining emissions.

Table 4.2 Criteria Pollutant Concentrations at Nearest Residences				
Exhaust Sources	**Maximum Concentration ($\mu g/m^3$)**			
	CO	**NO_2**	**PM_{10}**	**$PM_{2.5}$**
Total Project	52	140	129	40
State Standard	23,000	338	50	35
Federal Standard	40,000	----	150	35

Sources: Cemex 2006; Robertson's 2006; LSA Associates, Inc. 2007.

As indicated in Table 4.1, *Fugitive Dust Emissions from Continuing Mining Activity*, and Table 4.2, *Criteria Pollutant Concentrations at Nearest Residences*, fugitive dust emissions from mining are a major contributor of particulate emissions. A major contributor to the $PM_{2.5}$ emissions is the road dust generated from haul trucks transporting material from the quarries to the processing plants on the internal dirt haul roads. The haul road dust emissions were estimated based on maximum daily production levels, the average distances and aggregate volumes from each quarry, and the size of off-road haul trucks for each operator. During actual operations over the length of the Proposed Action, both mining operators could mine aggregate materials at maximum daily volumes and from the more distant quarries during the same time span such that federal thresholds for $PM_{2.5}$ could be exceeded, despite implementation of the required dust-control measures.

Indirect Operational Effects from Potential Mining Expansion

Mining activities would continue under both alternatives, but would vary as to time horizons and production levels. Mining and hauling activities would result in combustion emissions from heavy-duty construction vehicles, haul trucks, utility engines, and vehicles transporting mining crews. Exhaust emissions during these activities would vary daily as mining activity levels change. Future excavation operations would require the use of excavators, and future transport operations would require the use of haul trucks and water trucks. These emissions are not expected to exceed SCAQMD thresholds (SBVWCD 2008; p.4,3-24).

Indirect Impacts from District Operations and Construction

It is reasonably foreseeable that under both alternatives the District would continue to operate, maintain, and repair its access roads, canals, culverts, dikes, and diversion structures within the Project Area in the same manner as its current operations.

While there is the potential for future facilities to be built within the Project Area, the specific location, size, and type of facilities are unknown. Construction of additional facilities would be required to undergo project-specific environmental analysis prior to construction and implementation.

With both alternatives, the primary mobile source pollutant of local concern would be CO. CO is a direct result of vehicle idling time and thus, traffic flow conditions. Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high-traffic volumes. As shown in Table 4.3, *Carbon Dioxide Emissions*, the highest 8-hour ambient CO level monitored at the San Bernardino station, which is the closest station with monitored CO data approximately 4 miles to the west of the site, was 3.2 ppm (federal standard is 9 ppm) during the past three years (SBVWCD 2008; p.4.3-35). The highest existing CO concentrations modeled in the Project Area were 5.2 ppm, at Boulder Avenue and Greenspot Road (SBVWCD 2008; p.4.3-37). These concentrations would occur during peak traffic hours; hence, CO impacts calculated during peak traffic conditions represent a worst-case analysis. These CO concentrations would not exceed federal standards.

Health Risk

Neither alternative would adversely affect health risks in the area. Air quality in the Project Area would continue to be affected, due to indirect long-term air emissions from mobile sources from the foreseeable activities under both alternatives. The principal toxic air contaminant from mining activities would be diesel PM emitted as part of large, heavy-duty diesel-powered equipment exhaust. Aggregate processing plants also emit small amounts of contaminants, such as copper, nickel, and sulfates as fugitive emissions. While there may be other toxic substances in use on-site, compliance with federal handling regulations would control these emissions. A model of the potential health risk associated with emissions from construction and operations in the Project Area showed that neither short-term nor long-term exposure to project-related toxic air contaminant emissions is expected to affect health risk or exceed federal or state guidelines (SBVWCD 2008; Section 4.3.4.5, p.4.3-45).

The future planned mining operations on the exchanged lands would use petroleum products, concrete admixtures, oils, fuels, greases, and other toxic substances in conjunction with their operations. Any proposed use or disposal of toxic chemicals by mining operators would be required to comply with state and federal handling regulations.

Global Climate Change (GHG Emissions)

Existing and future mining activities in the Project Area are not expected to generate enough GHG emissions to affect global climate change. However, individual actions may incrementally contribute toward the potential for global climate change in an indirect basis in concert with other past, present, and reasonably foreseeable actions (refer to Section 4.11,

Cumulative Effects). Since the federal government does not have GHG emission control guidelines, the potential for continuing mining activities to contribute to this impact on global warming is based on a comparative analysis of the Proposed Action against the emission reduction strategies contained in the California Climate Action Team‘s (CAT) Report to the Governor.

Mining activities in the Project Area would result in indirect emissions of GHG. Emissions of carbon dioxide are primarily generated through vehicle and equipment exhaust. Following the implementation of the Proposed Action, permits for mining activities on the Selected Lands would be reviewed on a discretionary basis. Activities which would require trips are associated with the transport of mineral resources from the site of excavation to off-site processing plants. These trips would require the use of vehicles which would contribute to vehicle exhaust emissions. Carbon dioxide emissions from vehicles were calculated using average daily trips (ADT) of 2,412, and assumed an average round-trip length of 50 miles combined with the emission factors generated using the EMFAC2007 computer program. Carbon dioxide emissions are shown in Table 4.3, Carbon Dioxide Emissions, which shows that the Proposed Action would emit 0.020 terragrams (Tg) of carbon dioxide equivalent (CO2 Eq) emissions in year 2030, which is 0.0040 percent of California‘s total estimated GHG emissions in 2004 (492 Tg CO2 Eq.).

Table 4.3 Carbon Dioxide Emissions

Emission Source	Carbon Dioxide Emissions						
	2004-08	2009	2010	2011	2012	2013	2030
Vehicles (tons/year)	19,245	19,272	19,272	19,272	19,528	19,528	19,994
Total (Tg CO_2Eq.)	**0.019**	**0.019**	**0.019**	**0.019**	**0.020**	**0.020**	**0.020**

Source: LSA Associates, Inc. 2007

In addition to CO_2, which is the primary GHG, other GHG emissions are CH_4, NO_X , water vapor, O_3, and CFC_4. At build-out 2030, total unmitigated carbon dioxide equivalents would be 0.021 Tg CO_2 Eq., which is 0.0042 percent of California‘s 2004 total emissions for carbon dioxide equivalent (492 Tg CO_2 Eq).

The California Environmental Protection Agency CAT developed a report that ―proposes a path to achieve the Governor‘s targets that would build on voluntary actions of California businesses, local government, and community actions, and State incentive and regulatory programs” (CAT 2006). The report indicates the strategies that would reduce California‘s emissions to the levels proposed in Executive Order S-3-05. The strategies that apply to the Proposed Action are contained in Table 4.4, Compliance with Greenhouse Gas Emission Reduction Strategies. As shown, mining activities that would occur with or without the Proposed Action comply with the potential measures to bring California in compliance with the emission reduction targets.

Table 4.4 Compliance with Greenhouse Gas Emission Reduction Strategies	
California Climate Action Team (CAT) Strategy	**Compliance**
Vehicle Climate Change Standards	Vehicles used during mining operations would be in compliance with the state standards adopted to achieve maximum feasible and cost-effective reduction of emission levels for passenger vehicles, light-duty trucks, and heavy-duty vehicles.
Since 2001 numerous regulations have been adopted to reduce diesel particulate matter (PM). Black carbon is a major component of diesel PM and has a significant net warming effect.	Activities would comply with the adopted regulations for the use of low sulfur fuels, diesel truck idling, operational idling limits, and stationary diesel engine rules.
Recycling—Achieve 50 percent Statewide Recycling Goal as required by the Integrated Waste Management Act of 1989	Waste of recyclable material would be reduced by implementing strategies, including the following: Recycling motor oil, tires, and vehicle batteries; Participating in curbside recycling programs for paper, cardboard, green waste and other recyclable materials; and Recycling asphalt and concrete.
Water-use Efficiency—Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.	Plant operations recycle water from the silt pond; the amount varies with the season but can reduce fresh-water usage by up to 75 percent. Drought-tolerant plants would be used in landscaping to reduce water consumption would be installed.

Source: Report from the CA EPA Climate Action Team 2006.

4.2.2 Alternative A: No Action

The table above identifies actions that would reduce GHG emissions through vehicle emission reductions, vehicular trip reductions, hydrofluorocarbons (HFC) and perfluorocarbons (PFC) emission reductions, recycling programs, increases in building and energy-efficient appliances , and decreased water use. Therefore, the indirect effects of both alternatives would be consistent with the strategies to reduce California‘s emissions to the levels proposed by Executive Order S-3-05.

Under the No Action Alternative, mining emissions from existing and future operations could continue. Other than the activities discussed above no additional activities are projected to occur that would generate direct and indirect emissions on the properties under discussion for this exchange.

A CO Hotspot analysis was conducted to measure the pollutants from vehicular activity associated with aggregate mining activities that would continue under the No Action Alternative (SBVWCD 2008). For both 2008 and 2030 forecast-year conditions, no exceedance of the federal CO standard would occur for the No Action Alternative. Maximum

8-hour concentrations would be 4.9 ppm at State Route 30 northbound ramps and 5th Street, a value well below federal standards (9 ppm).

4.2.3 Alternative B: Proposed Action

The land exchange itself would not generate potential air quality impacts; however, subsequent activities in the Project Area may generate new sources of air emission. These subsequent activities, such as mining on the Selected Lands, would be subject to an additional discretionary process. Discussion of air quality impacts from reasonably foreseeable operation and construction activities on the exchanged lands would be evaluated in an indirect context, along with other projects anticipated to occur in the vicinity of the proposed exchange.

The proposed land exchange would not directly contribute to an increase in air emissions. While the land exchange itself would not induce a change in vehicular trip pattern, an increase in vehicular traffic is foreseeable if expanded mining operations are approved through future discretionary approval processes.

To the extent that the Proposed Action facilitates mining activities, emissions could increase. As described in the Wash Plan EIR, these emissions could exceed SCAQMD's regional thresholds for NO_x (SBVWCD 2008; p. 4.3-42), . The concentrations of both PM_{10} and $PM_{2.5}$ exceed state localized thresholds and $PM_{2.5}$ also exceeds federal localized thresholds (SBVWCD 2008; p.4.3-60). To reduce effects of particulate emissions to nearby sensitive receptors, the District and mining companies have adopted several mitigation measures (SBVWCD 2008; p. 4.3-61):

- Heavy-duty diesel equipment shall have exhausted particulate traps as certified and/or verified by EPA or California, installed, if available.
- Heavy-duty diesel equipment shall be fitted with the most modern emission control devices and be properly maintained to minimize construction vehicle emissions where feasible. This measure shall be monitored by the construction manager.
- The two mining operators, Cemex and Robertson's, shall schedule transportation of material such that both operators are not transporting material on the same day from the south half of the southeast quarter of Section 11 on the Selected Lands, which is the area farthest from both processing plants.

Compared to the No Action Alternative, CO concentrations for the Proposed Action at all modeled sites are projected to be the same or slightly reduced as a result of less travel time and more consolidation of mining sites (SBVWCD 2008; p. 4.3-42). The highest of these 8-hour concentrations would be the same as those of the No Action alternative.

Adoption of SCRMP Amendment, rights-of-way for future roads and trails, and the establishment of habitat areas through the land exchange would not contribute measurable impacts to air quality. It is reasonably foreseeable that as a result of the expansion of mining, the District's Observation Well No. 4 would be displaced and relocated outside the mining area upstream on future BLM land. Indirect air quality impacts associated with the relocation of this well and associated structures would be assessed in another environmental review to

be coordinated with BLM and USFWS. Because there would be no proposed construction related to this proposed project, no additional impacts are identified; and no mitigation is required.

Construction activities associated with future aggregate mining include the construction of a new paved access road, approximately 30 feet wide, along the existing City Creek levee located on the east side of City Creek between 5th Street and the east-west boundary of the Project Area. This proposed 5th Street Access Road would be constructed on an easement granted to Robertson‘s by the SBCFCD. The new levee access road would serve as the ingress and egress route for trucks serving both Robertson‘s and Cemex‘s processing plants. In addition, a new paved private road, approximately 30 feet wide, would be constructed to connect Cemex‘s Orange Street crossing to the proposed 5th Street Access Road. Total emissions that would result from grading activities and from equipment exhaust would be intermittent and short-term and would not exceed the SCAQMD thresholds; therefore, no mitigation is required.

4.3 GEOLOGY AND MINERAL RESOURCES

This section discusses potential impacts on geology and mineral resources from the proposed land exchange. Geologic hazards, especially in areas of strong seismic activities, are susceptible to impacts from seismically induced settlement and liquefaction, slope instability, and soil stability. Actions that involve constructing structures could potentially result in substantial risks to property or life. The discussion of impacts on mineral resources is limited to the effects of availability of mineral resources within the Project Area.

4.3.1 Impacts Common to All Alternatives

Under both alternatives, earthquake-related hazards to construction and operations would be minimal to moderate based on the limited structures which would be located in the aggregate mining areas, and none in the habitat conservation areas. Indirect effects could include landslides and liquefactions that can potentially occur in mining pits.

4.3.2 Alternative A: No Action

Geologic Hazards

The effects of fault rupture or ground-shaking in the Project Area and on aggregate mining operations that could occur on the Offered Lands under the No Action Alternative would be minor to moderate, which are similar to the Proposed Action.

The open-pit mining areas within the Project Area have the potential for landslides, based on the steep excavation sides and geologic conditions. There is the potential for minor to moderate impacts to mining operations due to landslides within the Offered Lands.

Mineral/Soil Resources

Under the No Action Alternative, aggregate mining is not allowed within ACEC areas. As a result, a loss of potential aggregate reserves may occur. Current aggregate mining activities are reaching the end of available mineral reserves. The No Action Alternative does not allow

for expanded mining activities. Loss of mineral resources may result from the No Action Alternative.

4.3.3 Alternative B: Proposed Action

Geologic Hazards

The Proposed Action would not have a direct physical impact on the Project Area. The exchange of lands would not be physically affected by geologic hazards.

Indirect effects of the Proposed Action include earthquake-related hazards on construction and operations. Due to the limited number of structures located in aggregate mining areas and in habitat conservation areas, effects would be minimal to moderate. The embankments in the open-pit mining areas would be subject to potential ground failures during a major earthquake on the San Jacinto and San Andreas Fault zones, respectively; but these risks are related to the mining processes, and are not a function of the land exchange.

The mine reclamation plans for Robertson‘s and CEMEX mining operations indicate that landslides are a major hazard, given the steep slopes of up to 150 feet, which are generated during the mining operations. These indirect effects of the Proposed Action would be mitigated through individual mine reclamation plans and environmental assessments. Increases to landslide hazard potential in the Project Area are not likely to change noticeably as a result of the land exchange.

Mineral/Soil Resources

If additional mining operations were permitted, mining activities could increase within the Selected Lands. However, this increase would not be directly related to the land exchange and is considered an indirect effect of the Proposed Action.

Mining activities would increase within the BLM Selected Lands following transfer to the District as part of the Wash Plan implementation. Increase of mining activity would remove mineral resources in the area at a rate estimated at 6 MTPY. After mining is completed, individual mining reclamation plans required by local and state government would mitigate potential impacts to Selected Lands if the Proposed Action is approved.

For both Cemex and Robertson‘s, reclamation of the mining pits would be undertaken concurrently with mining operations. Reclamation would be in compliance with reclamation standards recommended by the SMARA regulations (Public Resources Code § 2710 et seq.) which is designed to address the need for a continuing supply of mineral resources and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. The reclamation plans for the proposed new quarries addresses the steepness of the slopes with most of the new slopes constructed at a ratio of 2H:1V. Revegetation of completed 2H:1V slopes as well as monitoring of revegetation activities would be initiated upon completion of final grades along portions of the pit slope. The completed mining areas would be utilized for future water conservation, including water recharge and water storage basins, open space, or other uses agreed upon by the landowner and the city involved.

Increases in soil disturbance are considered indirect effects of the Proposed Action. Future mining activities on the Selected Lands would change the existing soil profiles by mixing and would alter the physical, chemical, and biological characteristics of the native soils.

Clearing of protective vegetation and subsequent soil disturbance activities would likely result in a minor short-term increase in both water usage and wind erosion rates. The Proposed Action is not anticipated to create direct effects to the projected amount of soil disturbance.

4.4 HYDROLOGY AND WATER QUALITY

This section discusses potential impacts on hydrology as a result of the proposed land exchange. Current surface or groundwater quality was analyzed and determined to be a non-issue, as indicated in Table 1.1, *Planning Issues* of Section 1.7.2, *Planning Issues*. Discussion of impacts on hydrology is limited to effects within the Project Area.

4.4.1 Impacts Common to All Alternatives

Under both alternatives, hydrologic-related hazards on the land exchange would be minimal, based on the combination of the existing levee system and the amount of undeveloped land within the Project Area.

4.4.2 Alternative A: No Action

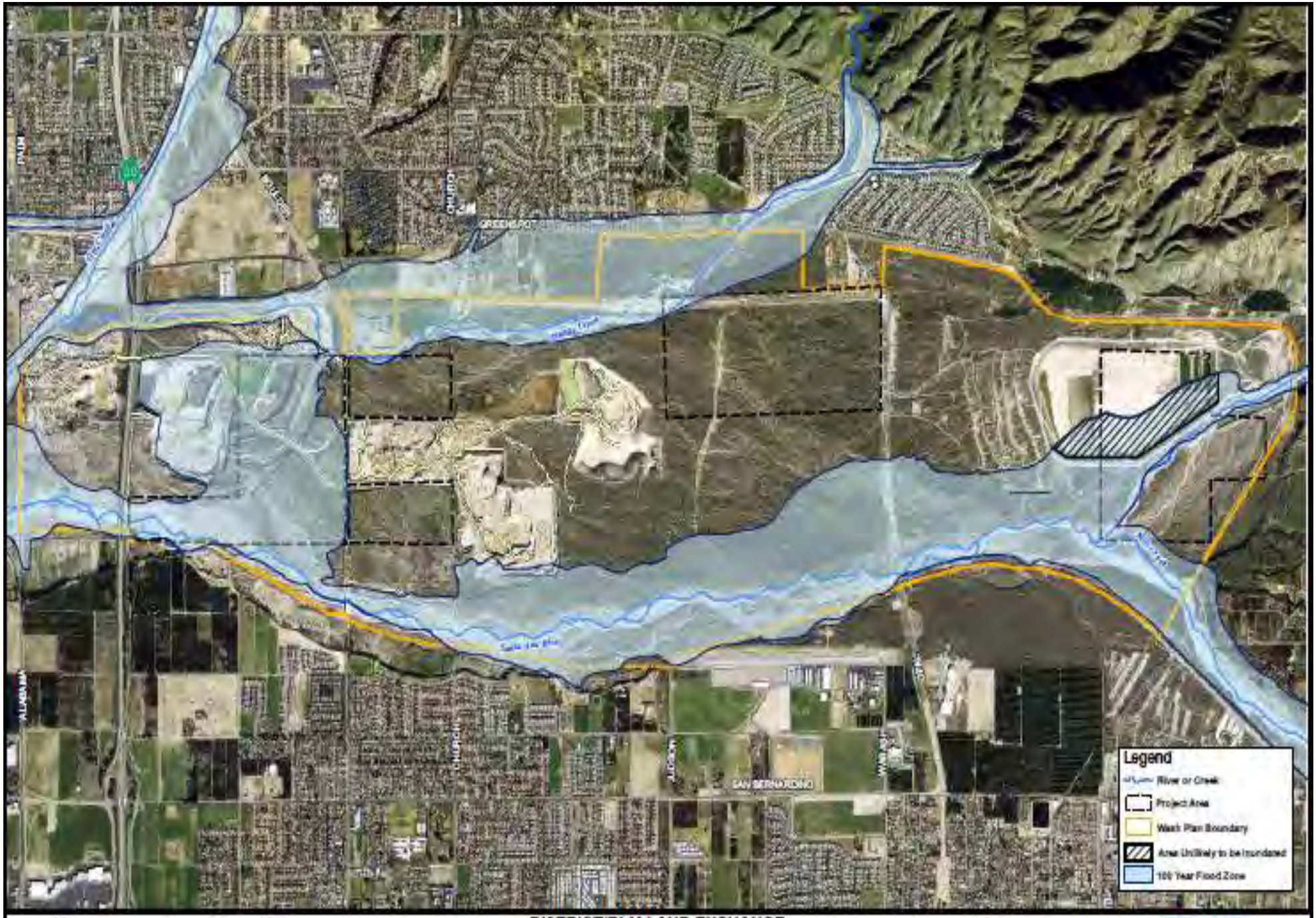
There are no effects from hydrologic-related factors on the Project Area under the No Action Alternative. These effects are not anticipated to differ significantly from the Proposed Action.

4.4.3 Alternative B: Proposed Action

The Proposed Action would not have a direct physical impact on hydrology. As illustrated in Figure 4.2, *Flood Zone Map*, the majority of the BLM Selected Lands are within the 100-year FEMA Flood Insurance Rate Map Flood Zone while the District Offered Lands are outside the 100-year FEMA flood zone. Based on the project description of the Wash Plan EIR, there would be no impacts on or caused by the Proposed Action.

Implementation of the Proposed Action would not have any effects to the hydrology/ floodplain. The Proposed Action only includes the transfer of land and does not include potential ground-disturbing activities that could alter drainage patterns. The land exchange would allow additional land uses on BLM Selected Lands to revised future land uses. Indirect effects on hydrology from such uses include the potential for up to 264.7 additional acre feet of groundwater production associated with additional mining production, which is not deemed material given regional groundwater supply and overall production history. (SBVWCD 2008; p. 4.8-8). Additional ground disturbances from expanded mining areas may create the possibility of soil erosion or siltation, which is to be controlled by implementation of site-specific SWPPP measures. (SBVWCD 2008: 4.8-36.) Reclamation measures that are anticipated as part of SMARA obligations will further prevent loss of vegetation on a long-term basis. Moreover, the possibility of expanded water recharge

facilities, including those in Phase 1, 2, or 3 areas, is likely to have a beneficial impact on regional groundwater recharge capabilities.



0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
FLOOD ZONE MAP

Figure 4.2

URS

4.5 BIOLOGICAL ENVIRONMENT

This section focuses on potential effects on local, state, and federally protected plant and animal species and their habitats. Where the potential for impacts is identified, measures are presented to avoid, minimize, and mitigate impacts to the maximum extent practicable. The information contained in this EIS section only includes summarized technical data, maps, and similar relevant information to facilitate public review of the significant environmental consequences of implementation of the Proposed Action. Placement of highly technical data and specialized analysis in the body of this EIS section has been avoided through the use of Appendix G, *Biological Technical Report (BTR)*.

4.5.1 Impacts Common to All Alternatives

Under both project alternatives, biological resources within the Selected and Offered Lands would continue to be actively managed through ACEC designations and DCH. Accordingly, no direct effects on local, state, and federally protected plant and animal species, or their habitats are anticipated from the execution of any Alternative. Depending on the extent and location of future proposed disturbances, impacts to common and special status species and their natural habitats would occur at a degree proportional to the activities occurring within the existing ACECs and DCH. Conversely, the lands that are high-quality and unaffected by previous and ongoing human activities would remain suitable for habitat preservation and enhancement of natural wildlife corridors. As shown in Table 3.1, the amount of DCH would remain unchanged at 568 acres within the proposed exchange parcels under either alternative. However, the ownership of lands containing DCH would change under Alternative B.

4.5.2 Alternative A: No Action

This Alternative would not affect biological resources because no land exchange would occur. As such, biological resources within the Selected and Offered Lands would continue to be actively managed through ACEC designations and DCH—and no direct effects on local, state, and federally protected plant and animal species or their habitats would be expected. As a consequence, though, aggregate mining activities and other high-impact land uses would not be consolidated within previously disturbed areas that lack high-quality functional wildlife or hydrological connections between Plunge Creek and the Santa Ana River. Similarly, the indirect impacts of Alternative B‘s execution—net increase in the quantity and quality of ACEC designations within Wash Plan boundaries—would not materialize. Furthermore, securing the establishment of a contiguous corridor from DCH along Plunge Creek southward through numerous ACEC and WSPA Units, to connect with DCH along the Santa Ana River, would not occur.

4.5.3 Alternative B: Proposed Action

The Wash Plan EIR analysis suggests that there are several special status species utilizing the Project Area (SBVWCD 2008; p.4.4-23-60). Additionally, field data implies that the Project Area includes some of the requisite habitat elements needed to support special status plant and animal species. Accordingly, executing the Proposed Action would ensure the continued active management of biological resources within the Selected and Offered Lands through ACEC designations, DCH and Wash Plan Conservation Easements. As shown in Table 3.1,

BLM ACEC designated land would increase from 400 acres under existing conditions to 580 acres under Alternative B that would include 320 acres in Section 12, 60 acres in Section 9 and 178 acres on BLM Parcel 108-081. The amount of DCH would remain the same as under existing conditions, while additional conservation protection would increase by 141 acres through establishment of Wash Plan Conservation Easements. Additionally, no direct effects on local, state, and federally protected plant and animal species, or their habitats, would be anticipated because Section 9 of the FESA provides protection until and unless a Section 10 (a)(1)(B) permit and a comparable state permit were issued. Indirect impacts from the Proposed Action would result in an increase in the quantity and quality of ACEC designations within Wash Plan boundaries and secure the establishment of a contiguous corridor from DCH along Plunge Creek southward through numerous ACEC and WSPA Units, to connect with DCH along the Santa Ana River (Figure 3.5, *Biological Resources*). Establishing the conservation easements associated with the land exchange, the corridor would also extend westward across SR-30 and Alabama Street to connect with other WSPA and DHC land outside the Project Area.

Subsequent District and BLM actions tied to future implementation of the Wash Plan and the SCRMP Amendment will require separate discretionary approvals from the U.S. Fish and Wildlife Service and California Department of Fish and Game as well as local government land use permits and authorizations from other federal and state agencies. Estimates are that anywhere from 11 to 13 % of the areas suitable for listed and threatened species habitat may be affected by potential ground disturbance associated with expanded mining operations in the Selected Lands, and the remaining areas of the Wash Plan. (SBVWCD 2008; p. 4.4-39) These measures, among others, will support and complement the long-term preservation of ecological processes within the region. Furthermore, the Proposed Action facilitates the establishment of conservation easements on private property and the long-term preservation of undeveloped open space on public lands, making the Proposed Action important to the cohesiveness and quality of the surrounding land for ecological purposes.

Implementation of the Proposed Action will result in the BLM acquiring the District‘s Offered Lands. ACEC designation will be applied to the Offered Lands which are transferred to the BLM, and an amendment to the SCRMP will be subsequently completed, identifying the additional land use designation of ACEC within SCRMP‘s jurisdictional boundaries following final transference of ownership (Figure 4.3, *Future Managed Habitat and ACEC Designation)*.

4.5.4 Mitigation

The following compliance implementation guidance is provided as a means of avoiding and minimizing adverse impacts to biological resources that occur, or have the potential to occur, within the Project Area once the Project is implemented:

- In order to comply with Section 10 of the Migratory Bird Treaty Act (MBTA), and relevant sections of the CDFG (e.g., 3503, 3503.4, 3504, 3505, etc.), any vegetation clearing within the Project Area should take place outside of the typical avian nesting season (i.e., March 1 to June 30), to the maximum extent practical. Prior to ground-disturbing activities within the Project Area, a qualified biologist should conduct and

submit a pre-construction migratory nesting bird and other raptors survey report. The survey shall occur prior to initiation of project activities, and any occupied passerines and/or raptor nests occurring within or adjacent to the Project Area should be delineated. To the maximum extent practicable, a minimum buffer zone from occupied nests should be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.

- Prior to undertaking ground-disturbing activities within the Project Area, within or immediately adjacent to any Section 401 and 404 Clean Water Act and CDFC 1600 (et seq.) jurisdictional features, the applicant (e.g., BLM or District) should consult with the appropriate responsible resource agency (i.e., USACE, RWQCB and/or CDFG) to verify that any needed discretionary permits/authorizations have been secured.
- To avoid attracting predators and nuisance species, the Project Area shall be clear of debris, where possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the Project Area.
- The BLM and District should develop and implement an environmental education program for employees and contractors working within the Project Area.
- Woolly-star, spineflower, SBKR and its DCH are known to occur on both Offered and Selected Lands. This document does not include specific information regarding future implementation of the Wash Plan, the SCRMP Amendment, or other private or public actions that may be planned; and neither the BLM nor the District have sought applicant status to address future actions with responsible resource agencies. As a result, all future landowners of these exchanged parcels shall be informed to consult with the USFWS or other responsible resource agency, prior to initiating any soil-disturbing activities.
- Project execution will allow for limited and targeted water conservation activities and other previously authorized operation and maintenance activities within District Offered Lands that contain low-quality chamise chaparral and non-native grassland habitats after conducting appropriate consultations and receipt of approvals.

4.6 LAND USE PLANNING AND RECREATION

The analysis of potential effects on land use and planning from the Proposed Action is limited to effects on land tenure and opportunities for land use authorizations within the BLM ACEC and District lands. Generally, ACEC management prescriptions restrict land use authorizations which limit opportunities for new development and rights-of-way inside the ACEC.

Impact analyses and conclusions are based on an understanding of BLM‘s authority to acquire and incorporate new lands into the Project Area, as well as BLM‘s responsibility to authorize various uses within its newly acquired lands, as allowed by the ACEC. Impacts are described qualitatively to differentiate among the alternatives. Analyses of impacts on land use and planning are based on the policies and objectives of the SCRMP, the Wash Plan, and applicable general plans.

4.6.1 Impacts on Land Use

4.6.1.1 Impacts Common to All Alternatives

Under all alternatives, mining operations are a non-allowable use within the BLM's ACEC. Selected Lands acquired by the District from the BLM would be designated for mining and habitat conservation. The land exchange would consolidate and increase mining activities on the Selected Lands. Mining leases to Robertson's and Cemex for Section 12 would be transferred by the District, with consent from the mining companies, to the Selected Lands. The BLM would acquire District Offered Lands and re-designate them as an ACEC through the SCRMP Amendment.

4.6.1.2 Alternative A: No Action

Under the No Action Alternative, the land exchange would not occur. The mining operators would continue to mine in areas as specified under existing mining contracts until completion. No additional mining would be allowed beyond the existing permitted mining boundaries. Therefore, the No Action Alternative would not result in the alteration of regional or local land use patterns. Mining activities would continue to be dispersed throughout the Wash Plan Area rather than consolidated in the western portion of the Wash Plan Area.

An indirect effect of the No Action Alternative would be a limit to available mineral resources which could lead to cessation of mining operations in the short term. Under current leases, mining operators are exhausting all permitted mining areas and need to expand into new mining areas—one of the primary purposes of the Wash Plan. This translates into an impact on reduced availability of regional mineral resources in the Wash Plan Area.

Disturbance associated with past unpermitted mining would continue to conflict with BLM's current land use allocation for habitat conservation in the existing ACEC.

4.6.1.3 Alternative B: Proposed Action

Implementation of the Proposed Action would result in 461 acres of designated habitat conservation uses consisting of 67 percent of undeveloped natural habitat (695 acres). Mining uses would, and water recharge could, increase as a result of the exchange. Mining use would expand from a disturbed area of approximately 61 acres to 259 acres, a four-fold increase. The expansion of mining activities is primarily concentrated within Section 10, away from residential uses and natural habitats. Water recharge activities would continue with existing facilities, and may expand somewhat into the Phase 2 and Phase 3 areas, as identified in the Wash Plan EIR, should future water supply and facility needs so dictate. In such event, additional surface disturbances in the northeast quarter of Section 12, consisting of the Phase 3 area, would be limited to approximately 31% of the total land area. SCRMP Amendments will clarify that such water recharge facilities are permitted, and consistent with SCRMP designations. Any such additional, future facilities will, however, require site-specific additional environmental review, once their precise location and characteristics are known. Water facilities on the Offered Lands contain a wetted area known as ~~"D~~ Dike" and several related conveyance facilities, all of which would remain intact. The subsequent and beneficial impacts from the land exchange are the continuous preservation of habitats,

mining of additional significant mineral resources, and the potential provision of greater water conservation measures.

Water Conservation

The Proposed Action would not cause a direct effect on water conservation activity, as the Offered Land in Section 12 acquired by the BLM would permit existing recharge facilities under FLPMA and/or S.8048, as applicable. Subject to a right-of-way agreement (or similar authorization) from the BLM. It is reasonably foreseeable that the Proposed Action would indirectly result in the change of land uses on the northeasterly portions of Section 12, identified as Phase III water conservation in the Wash Plan. Following the land exchange, a majority of Section 12 would be designated as ACEC by the BLM. However, groundwater recharge activities would continue to be allowed within some of the areas totaling approximately 60 acres designated for potential water conservation in the Wash Plan (Figure 4.3, *Future Managed Habitat & ACEC Designation*). The BLM has indicated that, even after the exchange, existing District groundwater recharge facilities, like ―D Dike" and the associated canals, would continue to be operated and maintained. The District's potential need for future water conservation facilities within the easterly 165 acres of Offered Land in Section 12 would be addressed when such needs are confirmed and projects are specified. These water conservation facilities would be incorporated into the designation of the Offered Lands as part of the ACEC management prescriptions outlined in the proposed SCRMP Amendment. The equalization parcel, consisting of 60 acres of Offered Lands in Section 9, would be formally designated as ACEC if acquired by the BLM

Habitat Preservation

BLM ACEC

As a result of the Proposed Action, 320 acres of Offered Lands in Section 12 would be designated as ACEC for habitat preservation when acquired by BLM.The newly designated ACEC parcels would be managed in accordance with the management prescriptions contained within the SCRMP for the propagation of slender-horned spineflower and Santa Ana River woolly-star population (See Figure 4.3, *Future Managed Habitat & ACEC Designation*).

The Selected Lands and portions of the Offered Lands subject to equalization would be designated for habitat conservation, regardless of the final outcome on which parcels of land would be exchanged. The habitat conservation area includes 320 acres of land under Section 12, and 15 acres of BLM equalization parcels in Section 10 east of Orange Street (Figure 4.3). These habitat-preservation areas would be set aside to allow for the propagation of slender-horned spineflower and Santa Ana River woolly-star population through an ACEC designation by the BLM or through a conservation easement held by the District.

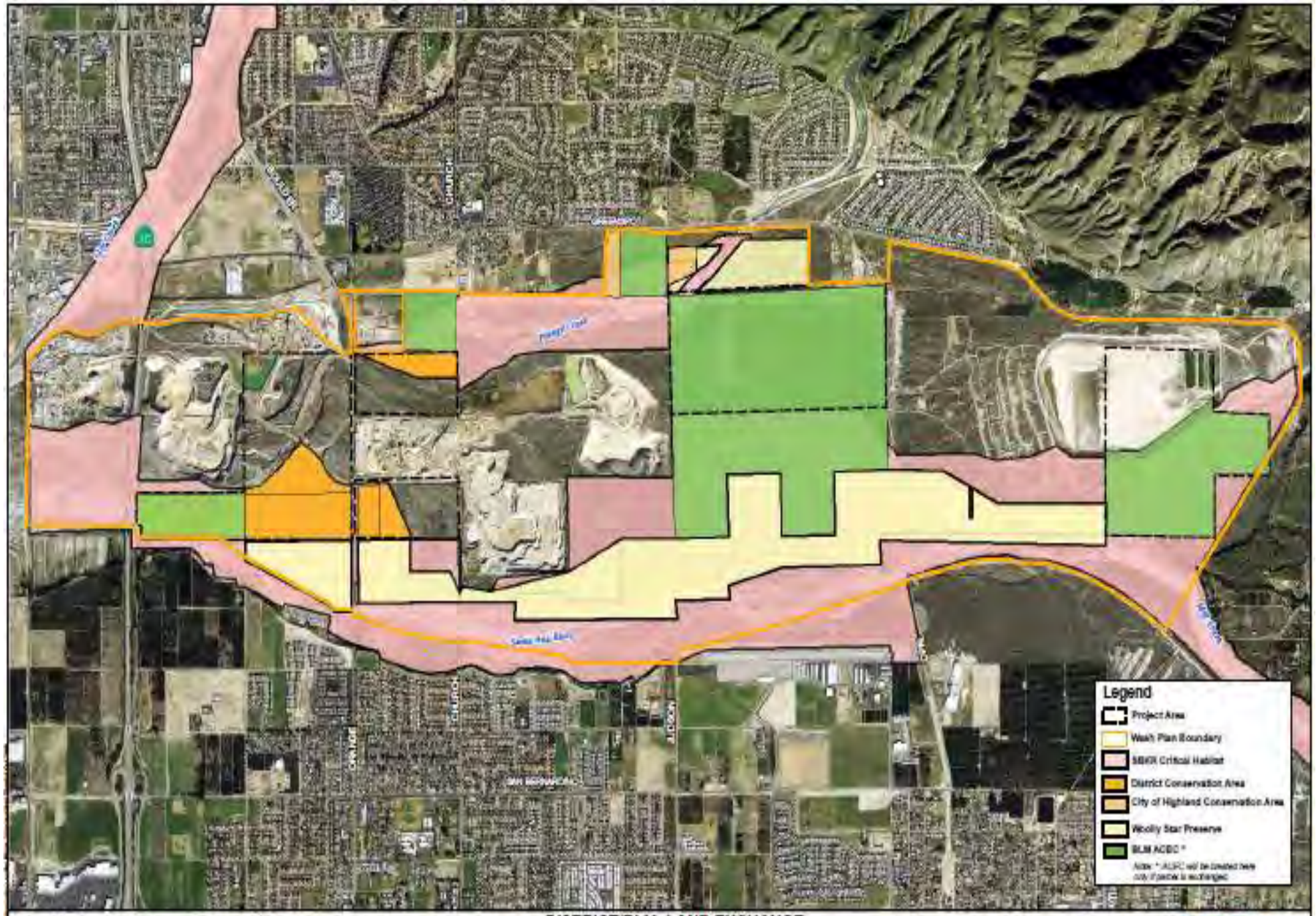
The parcels that remain under District ownership would be designated for habitat conservation and would be managed in accordance with the future Upper Santa Ana River Wash HCP. The parcels that remain under BLM ownership would be managed in accordance with the ACEC.

District Conservation Easement

Approximately 141 acres (56 acres of core exchange parcels and 85 acres of equalization parcels) of Selected Lands in Section 10 would be placed in a conservation easement by the District for habitat preservation. Lands within the conservation easement would be managed in accordance with the HEP contained in the Wash Plan for the propagation of the slender-horned spineflower and Santa Ana River woolly-star, as anticipated to be modified or amplified by the HCP to be prepared in connection with the Section 10 ~~"in~~cidental take" permits required to allow the Wash Plan's proposed expanded mining.

Santa Ana River Woolly Star Preserve Area (WSPA)

The existing WSPA within the Wash Plan Area would be maintained in accordance with the WSPA Habitat Management Plan and managed by the SBCFCD, and is essentially unaffected by the Proposed Action. The Proposed Action would provide connectivity within WSPA, which would improve habitat linkages.



DISTRICT/BLM LAND EXCHANGE
FUTURE MANAGED HABITAT AND ACEC DESIGNATION

Figure 4.3

URS

Aggregate Mining and Processing

As a part of the land exchange, the silt pond and ancillary facilities located on the Selected Lands would be exchanged for District Offered Lands.

The BLM would dispose of the Selected Lands, including the 61 acres of inadvertent mining area, and land containing the silt pond and ancillary facilities. Lands currently designated as an ACEC are used jointly for water conservation and have been disturbed and fragmented by adjacent mining activities. Thus, these Selected Lands are suitable for disposal to the District for the expansion of mining operations.

No direct impacts from mining and processing would occur as a result of the land exchange. However, indirect effects on land use from mining and processing would increase disturbance on the Selected Lands from 61 acres to 259 acres[13]. Mining would be consolidated on the Selected Lands. The Offered Lands would not be affected by mining and processing. The consolidation of mining on the Selected Lands would allow mining activity to be in conformance with the Wash Plan.

Mining Facilities Haul Roads

Cemex and Robertson‘s have private haul roads that are used internally to transport aggregates by mining trucks on the Selected Lands. Cemex has signed an agreement with Robertson‘s to utilize the tunnel crossing beneath Orange Street-Boulder Avenue for truck travel between Cemex‘s Orange Street Plant and Alabama Street and West Quarries. A new paved road approximately 30-feet wide traversing Section 10 of the Selected Lands would be constructed to connect the existing Cemex‘s Orange Street-Boulder Avenue crossing to the proposed 5th Street Access Road. This indirect effect is consistent with local planning policies favoring private, paved haul roads for transportation of aggregates. All haul roads within the Project Area are within the land use area designated for mining. The existing haul road would continue to be located on the Selected Lands after the proposed land exchange.

Utility Easements

MWD easements are located in the right-of-way of public roadways that traverse or border the Project Area. MWD easement runs along the northern and eastern boundary of the District Offered Lands bordering the existing BLM ACEC on the north. The Inland Feeder pipeline is installed on the easement which covers approximately 77 acres. Following the land exchange, the MWD easement would remain in its existing location and would not affect future activities on the Selected Lands. No amendment to the SCRMP is anticipated as this easement is outside of the proposed exchange area.

Existing and Future Land Use

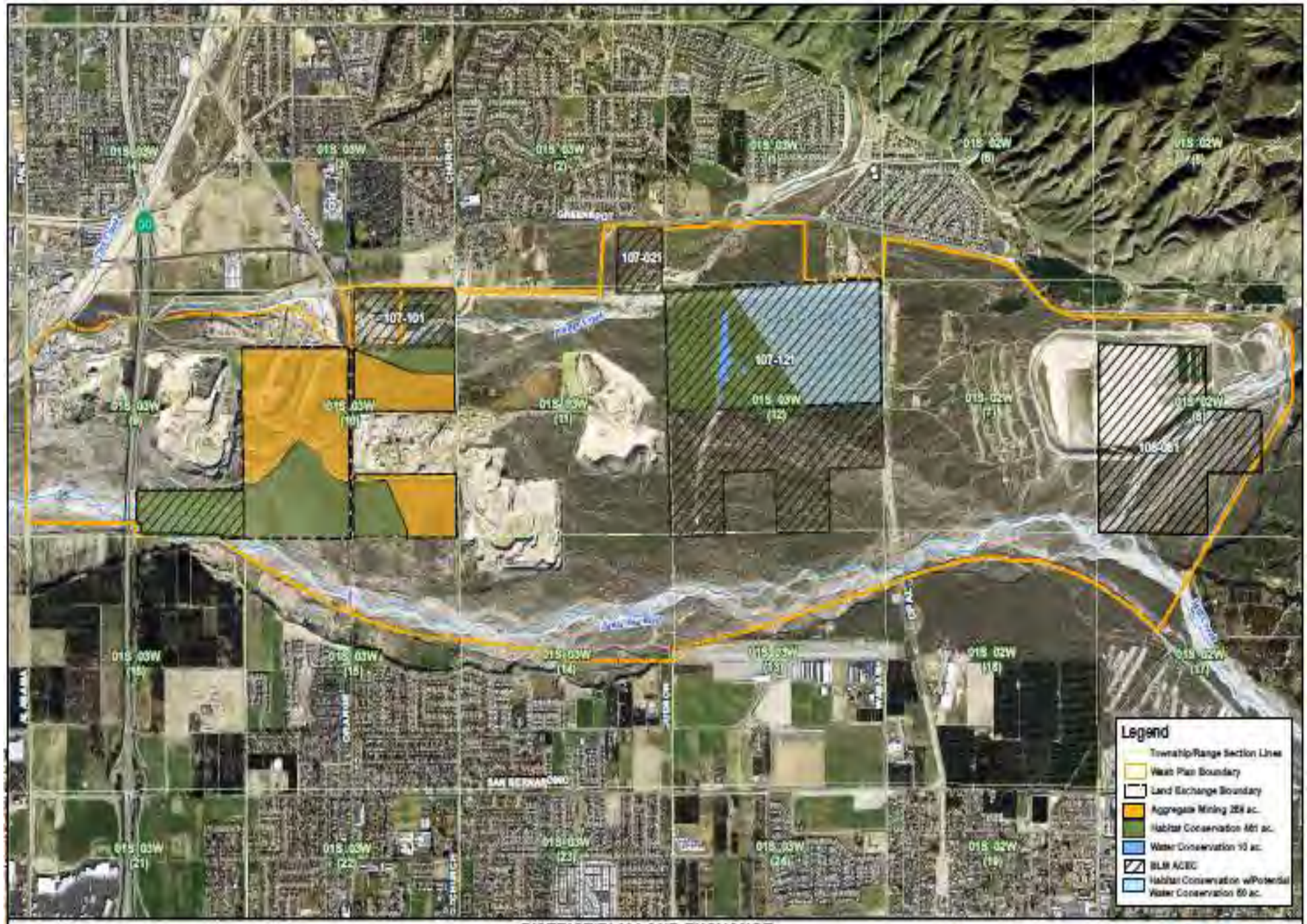
Table 4.5, *Existing and Future Activities under the Proposed Action*, summarizes existing and future land use activities as a result of the Proposed Action. As discussed above, the Proposed Action would not conflict with regional or local plans, nor would it conflict with adjacent land uses. (See Figure 4.4, *Future Land Use Map*)

[13] The entire Wash Plan anticipates 363 total new acers of mining, and that 259 acres is just the portion that falls within the Project Area. (SBVWCD 2008; p. 4.6-20)

Table 4.5 Existing and Future Activities under the Proposed Action (acres)

Activities	Existing Land Uses (acres) (core exchange/ equalization)*		Future Land Use (acres) (core exchange/ equalization)		Difference in Acreage (core exchange/ Equalization)		Difference in Land Uses
	BLM (selected)	District (offered)	BLM (offered)	District (selected)	BLM	District	
Water Conservation and Recharge	0/0	320/0	60**/0	0/0	+60/0	-320/0	Undeveloped open land designated for water recharge would be offered to BLM for habitat conservation. 60 acres of this area would be used for existing operations, such as "D" Dike, and potential Phase III facilities
Undeveloped Natural Habitat	0/0	0/60	0/0	0/0	0/0	0/-60	Undeveloped natural habitat would be acquired by the BLM to be managed under the ACEC
Habitat Conservation	254/ 85	0/0	260/60	56/85*	+6/-25	+56/+85	The selected District core exchange and equalization parcels will be managed as habitat conservation or as conservation easement under District ownership
Aggregate Mining and Processing	61/ 0	0/0	0/0	259/0	-61/0	+259/0	Selected core exchange parcels within Section 10 to be disposed to the District and become available for future mining expansion

Notes: * The equalization portion of the Selected Lands will be managed as conservation easement under District ownership.
** 31 percent of the eastern portion of the Offered Lands is planned for Phase III water operation.



0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
PROPOSED LAND USE MAP

Figure 4.4

URS

4.6.2 Impacts on Recreation

Potential impacts on recreation from the Proposed Action would result in changes to recreational settings. The analysis is focused on whether the proposed land exchange could improve or degrade recreational opportunities in the Project Area. Land use actions that result in surface-disturbing activities could decrease vegetation cover or otherwise alter land surfaces, subsequently affecting the quality of recreational experiences. On the other hand, land use actions that restrict surface-disturbing activities could prevent the establishment of recreational activities or facilities in certain areas. This would protect environmental settings, but potentially limit recreational opportunities.

4.6.2.1 Impacts Common to All Alternatives

The potential indirect impacts affecting recreational resources are assessed with respect to the goals of the Open Space and Conservation Element of the City of Redlands and City of Highland General Plan, as discussed in Section 3.6, *Land Use Planning and Recreation*. It should be noted that the City of Redlands and the City of Highland have no direct land use jurisdiction over federal lands; the general plans and trail plans are not applicable to the land uses proposed on federal lands. Impacts affecting recreation and trails on BLM lands are assessed with respect to the goals of the BLM's SCRMP. There are no other federal plans prepared that are applicable to the discussion of impacts to trails.

4.6.2.2 Alternative A: No Action

Under Alternative A, no changes to current recreational uses would occur. Currently, no officially designated trails are located within the Project Area. BLM Selected Lands (in Section 10, T1S R3W) would remain under BLM ownership and public access would continue to be restricted to non-motorized vehicles. Dispersed recreational use would continue on Selected and Offered Lands. No impacts to recreational uses, specifically trails, would result from the implementation of the No Action Alternative.

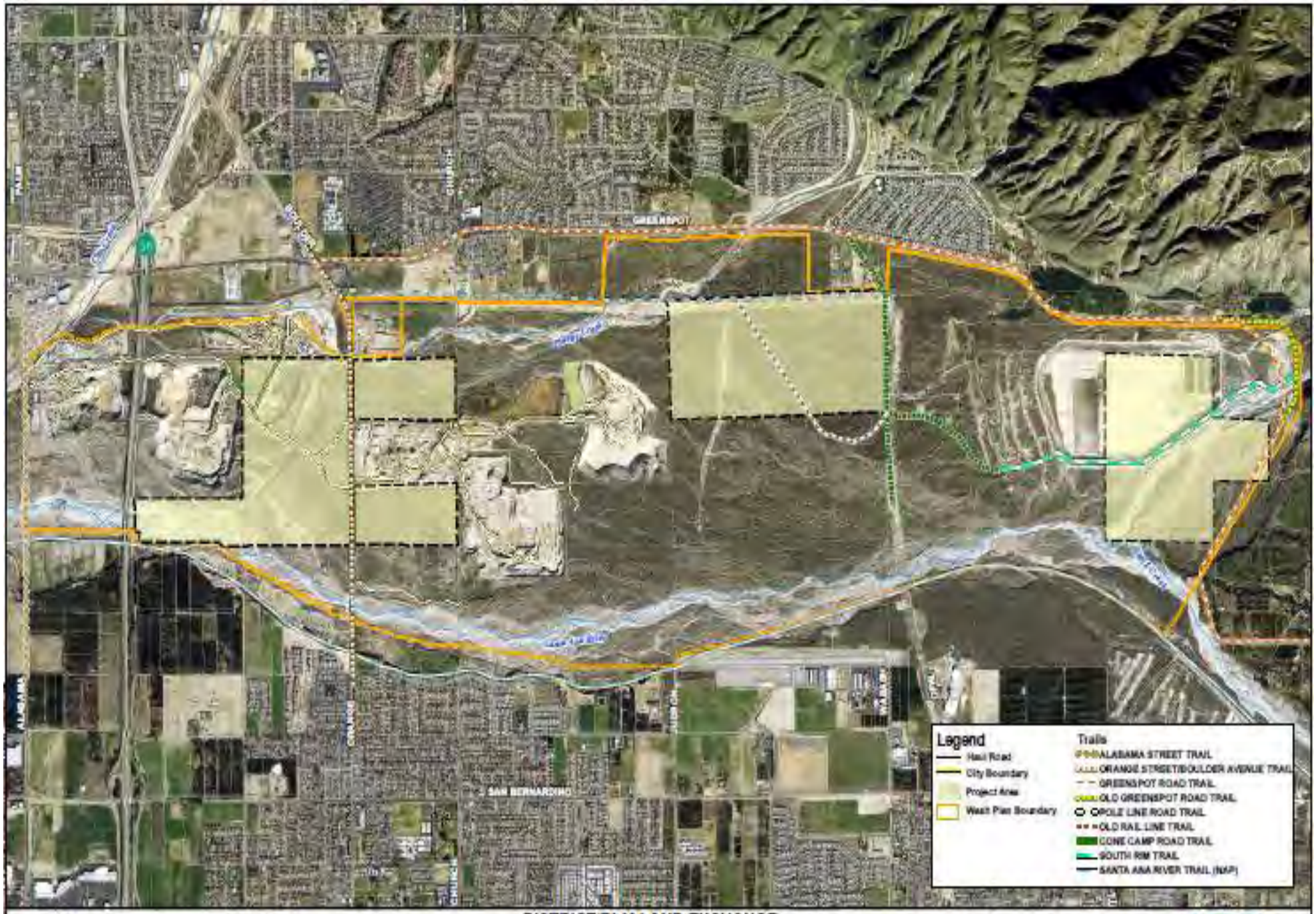
4.6.2.3 Alternative B: Proposed Action

The cities of Highland and Redlands envision the Wash Plan Area as a joint-use opportunity for recreation, habitat preservation, and water conservation. San Bernardino County has indicated support for recreational uses, particularly trails. Future planned trails within the Project Area are shown in Figure 4.5, *Proposed Wash Plan Trail Map*.

The Proposed Action is not anticipated to result in any direct impacts to recreational facilities or activities. Public access and motorized vehicles would be restricted within the Offered Lands to be designated as ACEC. Proposed recreational trails (Old Pole Line Road Trail and the Cone Camp Road Trail) indicated on the Wash Plan would provide additional recreational opportunities on the Offered Lands. As an indirect impact, the BLM would incorporate existing trails, with any conditions and uses that currently occur on Offered Lands into the SCRMP, as long as those conditions not include motorized uses which are not allowed within ACECs. For future trails within the BLM ACEC, a new ACEC management plan, which would include recreation and trail implementation actions, would be completed following approval of the SCRMP Amendment.

The Proposed Action would facilitate implementation of the Wash Plan and the associated trail plan. The integration of the Wash Plan would provide linkage between the City of Redlands and City of Highland trail plans. Expansion of regional trails as a result of this linkage is an indirect effect of the Proposed Action.

The integration of the regional trail network would improve current recreation experiences along trails. By removing and realigning the northernmost portion of the Church Street to Panorama Point Trail in the City of Redlands, the trail would be realigned to and from the Orange Street-Boulder Avenue Trail. The area in which the trail is currently located would be mined for aggregate materials. The Santa Fe-Mentone Trail in the City of Redlands currently traverses the Santa Ana River WSPA. Impacts from the trails realignment and removal associated with the Wash Plan are discussed in the Wash Plan EIR (SBVWCD 2008; Section 4.0, p. 4.3-1).



0 0.25 0.5 Miles

DISTRICT/BLM LAND EXCHANGE
TRAILS IDENTIFIED IN THE WASH PLAN

Figure 4.5

URS

4.7 SOCIOECONOMICS

This section discusses potential socioeconomic impacts from the proposed land exchange. The social and economic conditions are characterized by the needs, demands, and values of the local, regional, and national public as well as the economic opportunities, benefits, and constraints.

Economic impacts are defined as expected gains or losses from market transactions on local jobs and income, and market and non-market value of resources to users. Social impacts are defined as the consequences to human populations that alter the way in which people live, work, recreate, relate to one another, organize to meet their needs, and generally cope as members of society. Social impacts also include cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society (Interorganizational Committee on Principles and Guidelines 2003). Social impacts are defined as direct, meaning that they would potentially result from the action taken, or secondary, meaning that they result from primary or direct impacts and often are separated from direct impact in terms of both time and geographic distance.

Key economic impact variables that were considered as part of the analysis include employment, income, economic dependency, and market and non-market economic value of resources to users within the social and economic Project Area and at the regional and national levels.

4.7.1 Impacts Common to All Alternatives

Management of the ACEC would be compliant with the BLM SCRMP, which emphasizes the protection of sensitive species and habitat. All alternatives would continue to recognize the social value of resource protection and include minor to moderate expenditures and earnings associated with BLM management of the ACEC.

Currently, no mining activities occur on BLM lands that are proposed for exchange. Therefore, no existing mining operations on BLM lands would be affected. As both the active and proposed mining is located within the Wash Plan Area, new near-term social impacts would be similar in type and scale as at present because the mining activities would occur in the same area.

4.7.2 Alternative A: No Action

Under the No Action Alternative, BLM management of Selected Lands in the Wash Plan Area would continue under the current management direction. Potential economic gains from development of mineral or energy resources would be: (1) limited by the reduced access to or other restriction on valid existing rights; or (2) not realized, as development of acquired mineral rights would be precluded in accordance with the terms of the BLM SCRMP. The social impact would be favorable to those that value protection of lands from impacts that would be associated with mineral resource development, but unfavorable to those that value the potential development of mineral resources on public lands.

Prohibitions or restrictions would continue to potentially affect the development of valid existing mineral rights, and, thereby, potential economic gain and social change. Site-specific

impacts and mitigation would be identified through case-by-case analysis of future proposed activities.

The No Action alternative would result in a gradual slowing of mining activities in the Wash Plan Area as aggregate resources are depleted. The beneficial social and economic impacts of mining (jobs and industry transactions) would decline, affecting individual families and commercial entities. Indirect effects to the development community resulting from the declining availability of the aggregate resources could include relocation of mining operations to other areas and associated price fluctuations.

4.7.3 Alternative B: Proposed Action

The proposed action contains no direct socioeconomic effects, whether benefits or burdens, since it results only in the exchange of title to properties, between one governmental agency to another. From an indirect effects standpoint, however, the proposed action will essentially continue the socioeconomic benefits and burdens presently realized from existing aggregate mining operations. The relocation and consolidation of such aggregate activities, concentrating potential future mining areas with existing operations, cannot be reasonably be expected to create socioeconomic impacts, positive or negative. The availability of additional, potentially permitted reserves, however, will allow the beneficial impacts of present aggregate mining operations to extend out beyond the time horizon of exhaustion of existing permitted reserves, estimated by the Wash Plan to be completed, with reclamation of all mining areas, by the outside date of 2070." (SBVWCD 2008; p. 1-13)

4.8 TRANSPORTATION SYSTEMS AND TRAFFIC

This analysis is intended to satisfy requirements for project-specific transportation and traffic impact analysis by examining the short-term (Year 2008) and long-term (Year 2030) potential impacts of the Proposed Action within the Project Area, and by evaluating the effectiveness of mitigation measures incorporated as part of the Wash Plan.

The potential for transportation and traffic impacts could occur if the Proposed Action generates new trips or increases their contribution to peak-hour traffic.

4.8.1 Impacts Common to All Alternatives

Maintenance of roads and highways would continue on Selected and Offered Lands regardless of the outcome of the proposed land exchange. Transportation rights-of-way, traffic and signal impact fees, and future traffic patterns would not be directly affected by either alternative.

Construction Traffic Impacts

Proposed aggregate quarries are shown in Figure 3.11, *Existing Mining and Future Quarries*, however the sequence of mining is unknown at this time. Construction of the mines would generate minor increases in traffic associated with construction workers, material, and equipment deliveries. In context with the activities currently taking place within the mining area, the anticipated short-term construction traffic would be minimal and would not create any new traffic impacts that would affect LOS.

Operational Activities

On-site Operations

On-site operations require the use of excavators, haul trucks, and water trucks. Excavation equipment would remain the same as existing conditions. These activities would be primarily limited on-site and would not contribute to off-site traffic.

On-Site Transport of Excavated Materials

Transporting equipment, such as haul trucks, transport excavated materials from the mining area to the processing plants. Water trucks are used to spray haul routes with water to control fugitive dust. These activities would be primarily limited on-site and would not contribute to off-site traffic.

Processing of Aggregate Materials

For any new mining operations, after excavated aggregate materials have been collected, they would be hauled to a processing plant. Equipment used to process the aggregate materials consists of rock crushers, conveyors, aggregate screens, stackers, water trucks, and haul trucks. These activities would be primarily limited on-site and would not contribute to off-site traffic.

4.8.2 Alternative A: No Action

Traffic volume would increase outside the Project Area as a result of continued mining operations, as analyzed in the Wash Plan EIR (SBVWCD 2008; p.4.15-28).

4.8.3 Alternative B: Proposed Action

The establishment of habitat preservation areas is not expected to result in any new transportation or traffic impacts above existing traffic levels. However, indirect effects as a result of the exchange would have potential traffic impacts, with regard to the consolidation and increase of mining activities. Therefore, the analysis below will discuss indirect effects associated with potential mining operations.

The Proposed Action alone would not result in direct impacts to the transportation environment. However, indirect effects from the Proposed Action would result in changes to the existing transportation environment. Although there would be increased traffic activity within the Project Area from new or expanded mining operations. Indirect traffic impacts from construction or operational activities due to the Proposed Action alone would be greater than impacts due to the No Action Alternative. Construction-related traffic would be short-term. Operational traffic would increase in the Project Area, including anticipated increases in aggregate truck traffic (SBVWCD 2008; p.4.15-28), but alone would not produce increases in traffic levels that would result in traffic impact. To mitigate Year 2030 deficiencies, the permit applicant, within one year of the issuance of a CUP for the new mining areas or as specified in the CUP, will be required to pay all applicable city development impact fees for regional and local circulation and Congestion Management Plan (CMP) fair-share fees, based on current construction costs estimated at time of payment. Based on the Year 2030 analysis prepared in the Wash Plan EIR, Year 2030 intersection impacts would be mitigated by the implementation of specific improvement measures

described in the Wash Plan EIR, which would be in place by Year 2030. Specific details of the proposed mitigation measures are described in the Wash Plan EIR and Traffic Study (SBVWCD 2008; p.4.15-38).

4.9 VISUAL RESOURCES

This section addresses impacts on visual resources in the Project Area. The study methods used (described in more detail in Section 3.9, *Visual Resources*) are based on those established by the BLM Visual Resource Management Inventory and Contrast Rating System (BLM 1986). The methodology has been tailored to meet the specific issues and regulatory requirements associated with the Proposed Action.

Levels of potential effects on sensitive viewing areas were established through an analysis of the two primary components listed below:

- Effect susceptibility: the degree to which a sensitive viewpoint would be affected by changes within its viewshed; and
- Effect severity: the degree of change to the landscape created within a specific viewshed.

4.9.1 Impacts Common to All Alternatives

There is the potential for impacts to the visual resources and aesthetics of the area, due to the development and expansion of mining activities. With either alternative, these activities would have similar impacts on the visual landscape as current operations.

4.9.2 Alternative A: No Action

Under the No Action Alternative, current land management practices would continue and there would be no substantial change to the visual resources in the viewshed. Portions of the visual landscape would remain fragmented with views of mining activities interspersed with natural habitat.

4.9.3 Alternative B: Proposed Action

The assessment of visual impacts is based on identifying changes to existing landscape features which would occur as a result of the land exchange, and determining whether such changes would be consistent with VRM objectives of the SCRMP. The assessment method utilized is the contrast rating system which rates the degree of contrast between the proposed activity and existing landscape.

Contrast ratings measure the degree to which the Proposed Action would conflict with the characteristic landscape, including the landforms, vegetation and soil patterns, water resources, and cultural features. Contrast ratings also consider the degree (weak, moderate, or strong) of change in line, form, color, and texture that the Proposed Action would cause. The presence of existing mining activities is of particular importance in comparing the visual contrast created by the land exchange with the major features of the existing landscape. The Selected Lands are located adjacent to these activities, while the Offered Lands are located closer to less disturbed areas.

Because the SCRMP Amendment would not result in a change in VRM classification, it is not anticipated that direct effects to visual resources or aesthetics would be affected since future land use activities would need to comply to existing VRM standards. Further, a Class III landscape allows changes to the landscape character that may begin to attract attention but should not dominate the visual setting. Activities that could potentially occur in the Selected Lands in the future, resulting in indirect effects on visual resources, are not anticipated to dominate the landscape, but still could create impairment of near views from commonly viewed observation points such as adjacent roads and the freeway.

Indirect effects associated with mining disturbance and water conservation facilities, as described in the Wash Plan EIR, may impair visual resources in both the Project Area and the Wash Plan Area.

The indirect effects to visual resources from future mining activities on lands acquired by the District would be moderated due to the proposed expansion of existing mining rather than the creation of entirely new mining quarries. Because the Selected Lands would be located adjacent to existing mining operations, consolidating disturbed land in one area under the Proposed Action would reduce adverse visual effects, as opposed to the development of additional mining activities on lands in Section 12 and Section 7 that would be to spread across the planning area.

There is a second potential positive impact to visual resources as a result of the land exchange. Because the BLM would dispose of disturbed, isolated land, and would acquire undeveloped land that is surrounded by a less developed landscape, a more cohesive visual viewshed would be created. This would allow potential recreational users to enjoy a larger consolidated area of land.

Visual Simulations

The existing images below provided in Viewpoints 1, 2, 3, and 4 are indicative of the Selected Lands, and the existing image from Viewpoint 5 is indicative of the Offered Lands. Visual simulations are presented for Viewpoints 1, 2, and 5. The simulations compare the existing view with a view that could result from the Proposed Action.

The simulation for Viewpoints 1 and 2 show the visual impacts to Selected Lands upon the completion of future mining activities. The simulation from Viewpoint 5 is indicative of the positive viewshed on the Offered Lands that would be maintained as a result of the land exchange. (See Figure 3.13, *Viewpoint and Simulation Location*)

Viewpoint 1

VIEWPOINT 1: View looking north from Highway 30.

Source: Wash Plan EIR 2008.

Simulation 1

SIMULATION FOR VIEWPOINT 1: View looking north from Highway 30 with proposed mining operation expansion.

Source: Wash Plan EIR 2008.

Viewpoint 2

VIEWPOINT 2: View looking northeast from Highway 30

Source: Wash Plan EIR 2008.

Simulation 2

SIMULATION FOR VIEWPOINT 2: View looking northeast from Highway 30 during future mining conditions.

Source: Wash Plan EIR 2008.

Viewpoint 3

VIEWPOINT 3: *View of processing plant facing northwest from Orange Street.*

Source: Wash Plan EIR 2008.

Viewpoint 4

VIEWPOINT 4: *View of project site facing north.*

Source: Wash Plan EIR 2008.

Viewpoint 5

VIEWPOINT 5: *View of Pole Line Road Trail near Plunge Creek facing east*

Source: Wash Plan EIR 2008.

Simulation 5

SIMULATION FOR VIEWPOINT 5: *View of Pole Line Road Trail near Plunge Creek facing east with rock and boulder barriers.*

Source: Wash Plan EIR 2008.

Mitigation Measures

To minimize adverse visual impacts from mining operations, the District has adopted the following mitigation measures for the Wash Plan (SBVWCD 2008; p. 4.1-32):

- Prior to initiating grading for the Silt Pond Quarry, where sufficient space is available, a berm shall be created and maintained by the mining operator on the northern and eastern boundaries of the quarry that parallel 5th Street and Orange Street-Boulder Avenue, respectively. This berm shall be planted by the mining operators with plant species common to the Riversidean Alluvial Fan Sage Scrub Community as approved by the District and the appropriate jurisdiction. Berm and landscaping plans shall be submitted to the District, the City of Highland, and/or Caltrans (if applicable) for review and approval.
- Within 6 months of the issuance of mining permits, trees at least 15 gallons in size and common to the Wash Plan Area plant community shall be planted by the mining operator along the western perimeter of West Quarry, where sufficient space is available at spacing of 15 feet on center to allow unrestricted growth and be sufficient to shield the quarry from view of passing motorists on SR-30. Tree-planting plans shall be submitted to the District, the City of Highland, the City of Redlands, and/or Caltrans for review and as necessary. The trees shall be planted prior to the expansion of the quarry and shall be watered by the mining operators until established. The trees shall be maintained for the life of the quarry and replaced as necessary by the mining operator.
- Trees of a species common to the Wash Plan Area shall be planted by the mining operator along the eastern boundary of Alabama Street Quarry that parallels SR-30, where sufficient space is available. The spacing of the trees shall be 15 feet on center to allow unrestricted growth and be sufficient to mask the quarry from view of travelers on SR-30. Tree-planting plans shall be submitted to the District, the City of Highland, the City of Redlands, and/or Caltrans for review and approval.
- As mining activities are completed, the slopes of the quarries shall be reclaimed and revegetated by the mining operators, per the approved Reclamation Plans, with plant species common to the Riversidean Alluvial Fan Sage Scrub Community. Reclamation and revegetation plans shall be submitted to the District, the City of Highland, and the City of Redlands for review and approval.

4.10 CULTURAL RESOURCES

This section discusses impacts on cultural resources from the proposed land exchange. Impacts on cultural resources among the alternatives varies in regard to two primary factors: (1) the potential adverse effects of different types and intensities of authorized uses of public land, especially the extent of ground disturbing activities; and (2) potential effects due to targeted management of cultural resources in specific areas.

The analysis focuses on impacts that may have an "adverse effect" on characteristics that make a resource eligible for the NRHP [36 CFR 800.9(a) and (b)]. Effect determinations may lead to a "No Effect" (no impacts) determination or to a "Determination of Effect" (impacts

occur). In the latter case, the effect must be evaluated to determine whether there is an "Adverse Effect" or not ("No Adverse Effect Determination").

The assessment of effects followed the criteria outlined in regulations that implement Section 106 of NHPA (36 CFR Part 800.9). Those regulations stipulate that ~~"a~~n undertaking has an effect on a historic property when the undertaking may alter the characteristics of the property that may qualify the property for inclusion in the NRHP," and an effect is considered adverse when it diminishes the ~~"in~~tegrity of the property's location, design, setting, materials, workmanship, feeling, or association." Using the criteria of effect and adverse effect specified in 36 CFR Part 800.5, three basic findings can be made:

- No Historic Properties Affected: There are no historic properties within the APE or the undertaking would have no effect, either harmful or beneficial, on historic properties within the APE; or
- No Adverse Effect: There is an effect, but the effect would not diminish the integrity of a property's characteristics that make the property eligible for the NRHP; or
- Adverse Effect: There is an effect, and that effect could diminish the historical integrity of the characteristics that make a property eligible for the NRHP.

Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

4.10.1 Impacts Common to All Alternatives

Under all alternatives, cultural resources would continue to be affected by new or expanded mining operations. However, the significance of potential resources is not known until they are discovered and properly evaluated. The cultural resources that have been recorded in the Wash Plan Area provide a basis for modeling the types and distribution of unrecorded and recorded archaeological and historical resources within the Wash Plan Area.

When the proposed projects have the potential to affect cultural resources, they are evaluated on a case-by-case basis so that effects on cultural resources can be avoided, reduced, or mitigated. Effects from these land use activities would be similar across all alternatives.

4.10.2 Alternative A: No Action

The No Action Alternative would not affect archaeological, historical, or traditional cultural resources listed in or eligible for the NRHP.

4.10.3 Alternative B: Proposed Action

As described in Section 3.0, *Affected Environment*, none of the 18 previously and newly recorded cultural resources sites within the Project Area‘s APE meets the criteria for NRHP eligibility. Therefore, disposal of the Selected Lands to the District would not affect historic properties listed in or eligible for the NRHP. However, buried deposits are common, especially in areas of alluvial deposits and are, therefore, unavailable for examination at the time of field investigations. Contingencies are presented to identify and evaluate these resources, and, if determined to be California Register of Historic Resources (CRHR) and/or NRHP-eligible, to provide treatment to reduce impacts to these resources.

- To ensure that effects on previously unidentified cultural resources are properly evaluated and, if found to be NRHP-eligible, adverse effects are mitigated, the District has adopted the following measures: In the event that previously unidentified cultural resources are discovered in APE, work in the area of the find is to be halted/redirected and the District contacted within 24 hours. The District shall contract a Secretary of the Interior qualified archaeologist to evaluate the find, and, if CRHR-eligible, make recommendations for mitigating impacts through preparation and implementation of a treatment plan.
- Adverse effects to historic properties shall be resolved through implementation of a Historic Properties Treatment Plan. Mitigation may include, but not be limited to, avoidance and data recovery of a representative sample of the NRHP-eligible historic property.
- In the event human remains are identified, the District shall, in accordance with state law, immediately contact the San Bernardino County Coroner‘s Office (California Health and Safety Code §7050.5) and all activities in the immediate area of the find must cease until appropriate and lawful measures have been implemented. If the coroner determines that the remains are Native American, the coroner shall contact the NAHC (California Public Resources Code §5097.98). The NAHC would designate a Most Likely Descendent who may make recommendations concerning the consignment of the remains, in consultation with the Lead Agency and Project Archaeologist.

4.11 CUMULATIVE EFFECTS

4.11.1 Introduction

This section describes the degree of cumulative effects that could occur as a result of land exchange between the BLM and District.

Guidelines prepared by the CEQ for implementing NEPA broadly define the cumulative effects. The term ―cumulative effects" is generally used to describe the phenomenon of changes in environment that result from numerous human-induced, small-scale alterations. This effect can result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions (40 CFR 1508.7).

CEQ regulations state that the cumulative effect analysis should include anticipated environmental effects resulting from ―the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time" (40 CFR 1508.7).

Effects of the Proposed Action and No Action Alternative presented in this EIS were assessed for cumulative effects with other past, present, and reasonably foreseeable future actions in the region. Unless otherwise specified, the region of influence for each resource in the cumulative analysis is the same as the area defined within the Wash Plan EIR.

This analysis considers the effects of each alternative as evaluated in Section 4.0, *Environmental Consequences*, when combined with the effects of other past, present, and future actions in the affected region. Since the Proposed Action is to exchange land and involves no ground-disturbing activities, direct effects that would contribute to cumulative conditions in the affected area would not occur. Cumulative actions evaluated in this section include subsequent proposed land actions and use of those lands, and other reasonably foreseeable future actions.

As previously noted, a cumulative effect assessment must identify all reasonably foreseeable actions on the affected landscape. In the Wash Plan Area in particular, activities and usage include mining activities, utility corridors, water conservation, recreation, street widening, and habitat conservation. All of these activities affect similar elements of the environment in that they remove surface vegetation, reduce native species and habitat, may introduce invasive species, cause sedimentation to surface water bodies, introduce hazardous materials, effect traffic patterns, and cause other effects.

4.11.2 Past, Present, and Reasonably Foreseeable Actions

The proposed land exchange in the Wash Plan Area may have an adverse cumulative effect on one or more elements of the environment when combined with other activities in the region. Proposals currently being considered in the area include: the aggregate mining proposed by both Cemex and Robertson‘s; the Wash Plan Trail Plan; the Orange Street/Boulder Avenue Street widening project; and Phase III of the District‘s Water Conservation area.

4.11.2.1 Aggregate Mining (Cemex & Robertson's)

Lands within the Wash Plan Area include properties that are currently leased from the District for sand and gravel aggregate mining by both Cemex and Robertson's. These leases allow the mining operators to remove sand, gravel, and rock at defined royalty rates. Under both leases, it is the responsibility of the mining operator to secure the permits necessary to conduct mining operations. Both leases contain provisions which allow the District to continue its water-conservation activities on the leased property. However, water conservation activities are required to be coordinated with any active mining operations. The Proposed Action would indirectly contribute to cumulative effects associated with mining operations. If the No Action Alternative is selected, there is potential for Robertson's and Cemex to seek future permits to mine in Sections 7 and 12, respectively.

4.11.2.2 Upper Santa Ana River Wash Land Management Plan Trail Plan

There are no designated developed trails within the Wash Plan Area; therefore, no acreage is allocated for trails. The Wash Plan designates certain existing maintenance roads and abandoned rights-of-way for use as recreational trails and formalizes their use under specific limiting conditions. Some of the proposed trails traverse the Project Area. The cities of Redlands and Highland would need to amend the applicable elements of their respective general plans to show trail alignments consistent with these new trail alignments and how they relate and interconnect with other regional trail networks.

4.11.2.3 Orange Street/Boulder Avenue Street Widening

Orange Street-Boulder Avenue traverses in a north-south direction through the middle of the BLM Selected Lands that are being disposed of to the District as part of the land exchange. The street widening plan includes the widening of the roadway south of the Orange Street Bridge for about 1,000 feet, to its ultimate width of two lanes in both directions. Dedication of this additional right-of-way would allow for the potential future expansion of roadway capacity. This increase in capacity would be a positive cumulative impact to traffic congestion in the Project Area.

4.11.2.4 Phase III of the District's Water Conservation Area

Water conservation in the Project Area is accomplished by recharging the Bunker Hill Groundwater Basin through the use of 14 percolation basins[14]. The percolation basins are owned by the District and are located in three recharge areas within the Wash Plan Area.

The three recharge areas are: 1) the Seven Oaks Dam Borrow Pit (Phase I); 2) the area west of the borrow pit and east of Section 12 (Phase II): and 3) 31 percent of the eastern 160 acres of Offered Lands within Section 12 (Phase III). Recharge facilities currently exist in both the Phase I and Phase II areas and will remain. Enhancements in Phase I have been initiated. The District has established certain recharge basins in the Phase 1 area, and is currently studying the efficacy of establishing more, in the Phase 1 and Phase 2 areas. Potential expansion of water recharge facilities is contemplated in these areas, but specifics of the

[14] Basins are typically areas of shallow excavation where water percolation takes place. Flow of water into these basins brings suspended sediment, which is dropped to the basin floor with percolation of the water. This sediment requires periodic removal for percolation rates to remain efficient.

need, design, and location of such facilities is presently unknown. Biological impacts resulting from such potential expansions are contemplated in the ratios of mitigation land identified in the HEP, and the contemplated HCP, that will attend Wash Plan implementation. Site-specific environmental review will follow once the specifics of the proposed facilities are known. Quantifying effects for the Phase III recharge basin is speculative at this point since the District has yet to design specific facilities and conduct a site-specific environmental review. Once the land exchange has been completed, the District would further collaborate with BLM to implement further environmental review before the implementation of Phase III.

Ground disturbance resulting from the removal of chamise chaparral is anticipated from Phase III. This area has the lowest value for habitat. Chaparral would be removed and intermediate Riversidean alluvial fan sage scrub, spineflower, and Santa Ana River woolly-star habitat would be created on this land.

4.11.3 Cumulative Effects by Resource

4.11.3.1 Air Quality

Consistency with Plans

The existing AQMP provides a program for obtaining attainment status based on existing and future air pollution emissions resulting from employment and residential growth projections. A SIP contains the criteria and procedures for local and state agencies to assess the conformity of transportation plans, programs, and projects consistent with 40 CFR 93. Future activities in the Offered and Selected Lands would not result in an increase in population or employment and would not result in an increase in emissions that were not accounted for in the current AQMP and SIP.

Construction and Operational Effects

Expansion of mining and water recharge activities would contribute to NO_x and particulate matter emissions in an area that is in nonattainment status for these criteria pollutants. These cumulative projects would be subject to environmental effects assessment and mitigation formulation in a separate review process. The Proposed Action would not contribute to any long-term emissions because there would not be an increase in operational activity as a result of the land exchange. By setting aside the Offered Lands for future ACEC designation by the BLM, the Proposed Action allows the BLM to consolidate future land use activities that restrict the land from poorly planned development and other uses that would result in degradation of the air quality within the Project Area. On the Selected Lands, the District would enforce dust-suppression efforts identified in the Wash Plan EIR in connection with expanded water conservation and mining operations. The land exchange would not directly result in construction and subsequent operational emissions beyond what has already been discussed under Section 4.2, *Air Quality*. Therefore, the land exchange would not directly contribute to cumulative effects.

CO Hot Spot Analysis

The CO hot spot analysis is cumulative in nature in that it is based on the traffic study which includes vehicular trips from all present and future projects in the vicinity of the Project

Area. No cumulative CO hot spots are anticipated to be identified on roadway corridors or intersections where CO hot spots would concentrate as a result of increased vehicular activities associated with mining and water operations. The long-term operational and maintenance activities of the District would not be affected by the land exchange. While there is potential for future water recharge facilities to be located within the Offered Lands, the specific location, size, and type of facilities are unknown at this time. Similarly, while there is a potential for mining activities to expand on Selected Lands, project-specific environmental analysis would commence prior to the construction and operation of the facilities that support the future expansion of water recharge operations. Therefore, no cumulative CO effect on local air quality is anticipated in the vicinity of the Project Area and no mitigation is necessary.

Health Risk Assessment

The study included in the ―Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant" (June 1998) estimated that the population-weighted average outdoor diesel exhaust to PM_{10} presents a carcinogenic health risk to virtually all residents of California exposed to large doses of diesel exhaust PM_{10}. The concentration of diesel particulates through the cumulative projects in the vicinity of the exchange area is below the established cancer and chronic-risk threshold of 10 and 1 in one million. Individuals living and working in California may be exposed to levels of diesel emissions that are cumulative; however, the Proposed Action would not result in the utilization of toxic chemicals or emission of diesel exhaust. Therefore, the concentration of diesel particulates would not result in a cumulatively considerable contribution to health risk through diesel emissions in the region.

GHG Emissions

The Proposed Action and other projects in the vicinity would generate carbon dioxide primarily in the form of vehicle and equipment exhaust. However, the total carbon dioxide contribution to GHG would not have a direct significant influence on global climate change. In the absence of an established GHG emissions inventory, the methods of qualitatively analyzing GHG emissions have been elaborated in Section 4.2, *Air Quality*. Measures that reduce vehicle emissions, vehicular trips, HFC and PFC emissions would reduce GHG emissions. Practices that increase building and water use efficiencies would also reduce GHG emissions. Hence, the issue of global climate change in the context of this EIS is largely confined to an analysis of cumulative effects discussed in Section 4.2, *Air Quality*. Since the Proposed Action is consistent with the strategies proposed under Executive Order S-3-05, the cumulative contribution to climate change effects is thus negligible.

4.11.3.2 Geology and Mineral Resources

Indirect effects resulting from the Proposed Action include topography changes caused by new or expanded mining operations. The extent of disturbances or excavation resulting from the construction of haul roads, excavation pits, and associated structures is unknown. Individual mining operations would be required to prepare a mine reclamation plan and site-specific environmental assessments, which would recommend mitigation, if needed. The cumulative effects from mining are not expected to result in seismic events, renewable resource depletion, landslides, or other geologic hazards.

4.11.3.3 Hydrology and Water Quality

The Proposed Action would not directly change drainage patterns within the Project Area. However, it is anticipated that ground-disturbing activities from mining operations and District water operations and maintenance will have a cumulative effect and would be required to comply with existing regulations to reduce erosion and siltation.

In the event future water conservation facilities are implemented in the area designated as Phase 3, ground disturbance might result from such facilities, depending upon their precise design and location. At this juncture, the need, specification, location, and function of such facilities is as yet speculative, but is not anticipated to result in cumulative impacts, because overall ground disturbances would be limited to 31% of the designated Phase 3 area. In addition, such facilities would be subject to project-specific environmental review.

It is unlikely that other activities in the Wash Area would have a cumulative effect on hydrology when combined with other actions. Generally, erosion and runoff can be reduced by minimizing soil disturbances and complying with state and federal regulations, such as the National Pollutant Discharge Elimination System (NPDES).

4.11.3.4 Biological Environment

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the Project Area considered in this section. As described, the Proposed Action will continue to provide for the types of activities which are currently carried out within Offered and Selected Lands. Future activities are anticipated to have positive effects on preservation and consolidation of habitats on the Offered Lands. Increased habitat values are anticipated through conservation and improved linkages to the woolly-star, spineflower and SBKR habitat. It is anticipated that the future landowner (i.e., BLM and District) will consult with USFWS, and other responsible resource agencies, prior to initiating any soil-disturbing activities that have the potential to affect local, state, and federally protected plant and animal species, or their habitats.

4.11.3.5 Land Use Planning and Recreation

Future activities on the exchanged lands are anticipated to have positive effects on land use. The resulting land use pattern allows consolidation of mining on the Selected Lands and habitat preservation on the Offered Lands. Increased habitat value on the Offered Lands through conservation and improved linkages between the Santa Ana River woolly-star, spineflower, and SBKR habitats throughout the Wash Plan are anticipated following the exchange.

There are currently no recreational activities associated with the Proposed Action nor are there designated parks, trails, or facilities within the Project Area. The adopted Wash Plan has incorporated a trails plan which would integrate the planned trails in the cities of Redlands and Highland. As proposed by the Wash Plan, trail additions include a portion of the Orange Street-Boulder Avenue Trail, portions of Greenspot Road Trail (east of Plunge Creek to the Historic Iron Bridge), a portion of Old Rail Line Trail (connecting Old Rail Line Trail and Cone Camp Road Trail), and the Borrow Pit South Rim Trail in its entirety. Trail removals include the northernmost portions of the Church Street to Panorama Point Trail and

Santa Fe-Mentone Trail in the City of Redlands, and minor portions of trails that are in close proximity to the proposed Cone Camp Road Trail and the Pole Line Trail in the City of Highlands (see Figure 4.4, *Proposed Wash Plan Trail Plan*). All trails would be located on existing service roads and old railroad beds. Off-road vehicles and equestrian uses would not be allowed. Barricades may be placed to direct trail users away from habitat conservation, flood control, water conservation, and mining areas. The BLM has no official plans for trails in the Santa Ana River Wash ACEC under the SCRMP. The BLM would consider amending ACEC plans to coincide with future recreational activities within the Wash Plan on a case-by-case basis.

4.11.3.6 Socioeconomics

From an economic standpoint, implementation of the Proposed Action would be cumulatively beneficial to individuals, families, and populations within the region. In conjunction with other mining activities in the region, mining activities in the Project Area are expected to persist over a longer period of time and would provide economic gain in the region. Therefore, the Proposed Action would contribute a positive incremental cumulative effect on socioeconomics.

4.11.3.7 Transportation Systems and Facilities

New and expanded mining operations would increase traffic activity within the Project Area through new or expanded mining operations. Traffic effects from construction or operation would not be greater than effects from the No Action Alternative. Construction-related traffic would be short-term. Cumulatively, operational traffic due to potential mining operations would increase in the Wash Plan Area. The cumulative contribution to traffic effects would be mitigated through change in access points, scheduling of traffic to avoid peak hours, and contributions in the form of traffic and signal effect fees.

4.11.3.8 Visual Resources

The ground disturbance and quarry expansion activities that are reasonably foreseeable as an indirect effect of the Proposed Action, in combination with the existing mining on land adjacent to the Selected Lands, would contribute to an increase in the severity of existing degraded visual quality in the near view areas of the mining operations. The anticipated indirect effects of quarry expansion on lands acquired by the District from the BLM would add to the visual dominance of mining activity in the westerly portion of the Wash Plan area.

It is unlikely that the widening of Orange Street to two lanes in both directions would cause effects to visual resources within the surrounding areas. Appropriate landscape features, which may include planting of trees and the use of landscaped berms adjacent to the widened roads, would be installed to reduce adverse visual effects of expended mining activity on the Selected Lands.

4.11.3.9 Cultural Resources

As a cumulative effect, aggregate mining or other surface-disturbing activities in the Project Area may affect buried resources by disturbing unknown archeological resources. The widening of Orange Street in previously disturbed areas is not anticipated to contribute to

disturbance of existing cultural resources. Subsequent ground-clearing or ground-disturbance activity would require cultural resource monitoring to identify and protect resources that are uncovered. All cumulative projects would be required to comply with state law with regard to the discovery or disturbance of archaeological resources. It is also anticipated that similar mitigation measures would be required for any cumulative projects in the Project Area, which would reduce any potential cumulative effects. Project-specific environmental analysis and mitigation would be required for individual projects within the Wash Plan Area.

4.12 IRREVERSIBLE EFFECTS

NEPA requires an analysis of significant irreversible effects. Resources irreversibly or irretrievably committed to a Proposed Action are those utilized on a long-term or permanent basis. This includes the use of nonrenewable resources such as metal, wood, fuel, mineral resources, and other natural or cultural resources. An example of an irreversible effect is depletion of mineral resources or alteration to the topography of the region through activities on site. These resources are considered non-retrievable in that they would be used for the Proposed Action rather than conserved or used for other purposes. Another effect that falls under the category of irreversible and irretrievable commitment of resources is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

4.12.1 Vegetation

There are no anticipated irreversible effects to vegetation. In the long-term, up to 259 acres could be affected by potential mining operations. In areas where plant habitat is lost or adversely affected due to surface-disturbing activities or construction, remediation and revegetation techniques can be used to restore vegetation.

4.12.2 Wildlife

Potential expansion of mining and water operations would affect special status species habitat. This effect would be negligible due to the degraded and disturbed nature of existing habitats. It is expected that approved mitigation measures and adaptive management plans would minimize this effect.

4.12.3 Visual Resources

The Project Area and surrounding areas could be designated as Class IV due to the proximity to heavy cultural modification and the highly disturbed nature of the land. However, the Selected Lands for BLM acquisition are Class III landscape and are far less disturbed. Hence, the land exchange would not degrade existing visual resources. There would be no irreversible visual effects.

4.13 SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT

Short-term effects associated with construction activities described in Section 2.0, *Proposed Actions and Alternatives*, include effects to air quality, cultural resources, recreation, and biological resources. These can be compared to the long-term cumulative benefits of the proposal, such as production of significant mineral resources for a growing regional population and economy.

5.0 CONSULTATION AND COORDINATION

This Draft EIS represents the efforts and involvement of a broad range of participants, including other federal agencies, American Indian tribal groups, private organizations, and state and local governments. Consultation and coordination have occurred in a variety of ways throughout the EIS process. Both formal and informal efforts have been made to involve the public.

This section describes the consultation and coordination activities the BLM has carried out while preparing this EIS. Public comments on the Draft EIR and BLM responses to them will be included in this section of the final EIS.

This project is a multi-faceted, multi-agency, and multi-property owner project which provides for the consultation, coordination, and accommodation of existing and anticipated future land activities in the Wash Plan Area located in southwestern San Bernardino County. The BLM and the District conducted and attended many meetings throughout the planning process to keep all interested parties informed, and to solicit opinions and public input. Production of this document required consultation, coordination, and public involvement through public scoping meetings, the *Federal Register* notice, and written comments received by the District and the BLM. All interested parties were invited into the process by means of various formal and informal methods, including meetings, scoping meetings, and e-mail correspondence.

The BLM is required by law to prepare NEPA analysis and documentation ~~in~~ cooperation with State and local governments" and other agencies with jurisdiction by law or special expertise (42 U.S.C. 4331(a), 4332(2)). Qualified agencies, tribes, or other governments that enter into formal cooperation under this provision are called cooperating agencies. In support of the cooperating agency mandate, the BLM invited a broad range of federal, state, tribal, and local agencies to become cooperating agencies in the development of the EIS. In addition, representatives from other interested federal and state agencies and tribes provided BLM with ongoing verbal and/or written comments, and provided planning information, including Geographic Information System (GIS) data layers and information. Table 5.1, *List of Organizations and Agencies Consulted*, lists organizations and agencies that were formally or informally consulted in this EIS process.

Table 5.1 List of Organizations and Agencies Consulted

Organization	Specialist

Table 5.1 List of Organizations and Agencies Consulted		
Organization		**Specialist**
Federal	BLM	Greg Hill, Planning & Environmental Coordinator Holly Roberts, Associate Field Manager Wanda Raschkow, Archaeologist/Coordinator Larry LaPre, District Wildlife Biologist Thomas Gey, Realty Specialist Michael Bennett, Supervisor of Lands, Minerals and Recreation
	Fish and Wildlife Service	Nancy Ferguson, Biologist
Local	San Bernardino Valley Water Conservation District	Randy Scott, AICP, Wash Plan Project Manager Burnell Cavender, AICP Claud Seal R. Robert Neufeld David B Cosgrove
	San Bernardino County Flood Control District	David Lovell
	Robertson's Ready Mix	Christine Goeyvaerts
	Cemex	Christine Jones Scott Hess
	Lilburn Corporation	Marty Derus, VP

5.1 PUBLIC INVOLVEMENT AND SCOPING

Public participation is a dynamic process that continues throughout the EIS process. In addition to formal public participation, informal contact has occurred with public land users and interested parties.

The planning process was initiated on April 26, 2004, with the publication of a NOI in the *Federal Register*. In May 2004, the BLM and the District hosted two public scoping meetings to provide information and a forum for public input into the process, one in the City of Highland and the other in the City of Redlands (Table 5.2, *Scoping Meetings*). Additionally, the NOI provided supplementary project information, BLM contact information for comments, and a list of the predominant issues.

Table 5.2 Scoping Meetings	
Location of Scoping Meeting	**Date**
City of Highland Council Chambers, 27251 Base Line, Highland, CA	May 12, 2004

City of Redlands Council Chambers, 35 Cajon Street, Redlands, CA	May 19, 2004

The scoping period lasted 46 days, and ended on June 11, 2004. A total of eight written communications regarding the land exchange were received during the scoping period. Public comments and concerns are summarized in Table 5.3, *Index of Comments*, and are also included in Appendix D, *Scoping Comments*. Additionally, the comments are on file in the BLM Palm Springs-South Coast Field Office and are included as part of the Administrative Record. As shown in Table 5.3, *Scoping Meetings*, the predominant issues identified during public scoping included: threatened, endangered, and other special status species; mineral resources; water resources; recreation; noise; visual resources; cultural resources; land management; and traffic management.

Table 5.3 Index of Comments

Land Exchange Comments Received During Public Scoping

Date of Correspondence	Name/Title of Correspondent	Organization Represented	Primary Issue(s) of Concern	Sections Addressed
May 25, 2004	Adam P. Fischer, Environmental Scientist, Region 8 401 Certification Coordinator	RWQCB, Santa Ana Region	Clean Water Act Compliance (Section 404 Permit).	Sections 3.4 and 4.4, *Hydrology and Water Quality*
May 26, 2004	Christian G. Spies	-	Protection of the Santa Ana River woolly-star and the slender-horned spineflower.	Sections 3.5 and 4.5, *Biological Resources*
May 3, 2004 and May 4, 2004	Rich Miller	Resident	Cone Camp Road becoming a daily access route to mining.	Sections 3.8 and 4.8, *Transportation Systems and Traffic*
May 18, 2004	Kay L. Dyk	Resident	Expanding mining operations in the Wash Plan Area. Air quality impacts of increased mining. Noise associated with mining at night. Visual/aesthetic impacts of open mining pits.	Sections 4.2, *Air Quality*; Section 4.9, *Visual Resources* and Table 1.1
May 4, 2008	Dr. David F. Adame	Resident, City of Highland	Expansion of mining operations in the Wash Plan Area. Impacts to property values, traffic, and air quality as a result of expanded mining.	Sections 4.2, *Air Quality*; Section 4.7, *Socioeconomics*; and Section 4.8, *Transportation Systems and*

Table 5.3 Index of Comments				
Land Exchange Comments Received During Public Scoping				
Date of Correspondence	**Name/Title of Correspondent**	**Organization Represented**	**Primary Issue(s) of Concern**	**Sections Addressed**
				Traffic
June 11, 2004	Jonathan Baty, Founder	www.bikecommuter.com	Impacts to aesthetics, endangered species, and continued economic growth. Impacts to local air quality and increased traffic impacts a result from expanded mining.	Section 4.5, *Biological Resources*; Section 4.2, *Air Quality*; Section 4.9, *Visual Resources*; Section 4.7, Socioeconomics; and Section 4.8, *Transportation Systems and Traffic*
June 14, 2004	Mark Stuart, Southern District Chief	Department of Water Resources, Southern District	Impacts to Existing State Water Project (SWP) Facilities.	Wash Plan EIR and Table 1.1

Public involvement in planning for the Final EIS is ongoing and various opportunities for public involvement will continue to be available.

5.2 LIST OF PREPARERS

This Draft EIS was prepared by an interdisciplinary team of specialists from the BLM Palm Springs – South Coast Field Office, assisted by the District and URS Corporation. Table 5.4, *List of Preparers* shows the list of preparers and individuals involved in the preparation of this Draft EIS.

Table 5.4 List of Preparers		
Name	**Draft EIS Responsibilities**	**Education**
Bureau of Land Management Palm Springs – South Coast Field Office		
Greg Hill	Planning and Environmental Coordinator	
Holly Roberts	Associate Field Manager	
Wanda Raschkow	Archaeologist/Coordinator	
Larry LaPre	District Wildlife Biologist	
Thomas Gey	Realty Specialist	
Mike Bennett	Supervisor of Lands, Minerals and Recreation	
San Bernardino Valley Water Conservation District		
Randy Scott, AICP	Wash Plan Project Manager	
URS Corporation		

Table 5.4 List of Preparers		
Name	**Draft EIS Responsibilities**	**Education**
Brian Wynne	Principal-in-Charge	AA, Oceanographic Studies
Jeff Rice	Project Manager	MBA BS, Urban and Regional Planning
Ginger Torres	Project Coordinator	BS, Earth Systems Science
Richard Burke	Senior Technical Advisor	MS, Technology and Public Policy BS, Interdepartmental Studies
Kavita Mehta	Technical Advisor	MPI, Planning
Jay Abbott	Socioeconomics, Environmental Justice	MS, Resource Economics
Hossein Azarmnia	Hydrology	PhD, Engineering
Noel Casil	Transportation and Traffic	BS, Civil Engineering
Kim Castruita	Socioeconomics, Land Use and Recreation, Utilities and Public Services	BS, Urban Planning
Charles Chan	Consultation and Coordination	BS, Environmental Science
Pei-Ming Chou	Cumulative Impacts	MA, Historic Preservation Planning BA, English Literature
Joe Devoy	Geographic Information System	BS, Mechanical Engineering Registered Civil Engineer in California
Cynthia Gabaldon	Water Quality	BS, Civil Engineering Registered Civil Engineer in California
Brian Glenn	Cultural Resources	MA, Archaeology BA, Anthropology and Geography
Lincoln Hulse	Biological Resources	BS, Environmental Science/Wildlife Biology
Dustin Kay	Cultural Resources	BS, Anthropology
Lucy Lin	Air Quality, Land Use and Recreation, Cumulative Impacts	MPI, Planning BS, Molecular Environmental Biology
Ted Lindberg	Noise	BA, Mathematics
Corinne Lytle	Visual Resources	BA, Environmental Studies
Leonard Malo	Biological Resources	MS, Environmental Management
Jeff Muller	Hazards and Hazardous Materials	MS, Marine Science BS, Environmental Science
Paul Peterson	Geological and Mineral Resources	BS, Geological Science
Chandra Puramsetty	Hazards and Hazardous Materials	MS, Environmental Studies
Joe Stewart	Paleontological Resources	PhD, Systematics and Ecology

5.3 LIST OF RECIPIENTS OF THE EIS

The following is a list of recipients of the Draft EIS, in alphabetical, order sorted by category.

Federal Agencies

U.S. Bureau of Land Management

- California State Office
- California Desert District Office
- Palm Springs Field Office
- Washington D.C. Office

U.S. Environmental Protection Agency

- San Francisco, California Office
- Washington, D.C. Office

U.S. Fish and Wildlife Service

- Region 8, formerly the California and Nevada Operations Office (CNO)

State and Local Agencies

City of Highland

City of Redlands

San Bernardino County

- Flood Control District (SBCFCD)
- Regional Parks Department

San Bernardino Valley Municipal Water District

San Bernardino Valley Water Conservation District

Southern California Association of Governments (SCAG)

State of California

- Department of Fish and Game (CDFG)
- Department of Toxic Substances Control (DTSC)
- Department of Transportation (Caltrans)
- Office of Planning and Research (OPR)

Indian Tribes

Native American Heritage Commission (NAHC)

Organizations

Center for Biological Diversity

San Bernardino Valley Audubon Society

Sierra Club – San Gorgonio Chapter

APPENDIX A: BIBLIOGRAPHY

AccessGeneology.com. 2005. Retrieved Jan. 31, 2006. Available online at http://www.accessgeneology.com/native/tribes/shoshoni/serranoindianhist.htm.

Adams, F. 1916. *Irrigation Districts in California, 1887-1915*. Sacramento, CA: California State Printing Office.

American Civil War Society. n.d. The Civil War in California? Web Publication of the American Civil War Society, Inc., Yucca Valley, California http://www.acws.net/california.html.

Basgall, M.E., M.C. Hall and K.R. McGuire. 1988. *The Late Holocene Archaeology of Drinkwater Basin, Fort Irwin, San Bernardino, California*. Report of file at the San Bernardino Archaeological Information Center, Redlands, California.

Bean, L.J. 1962-72. [Serrano Fieldnotes] (Manuscript in Bean's Possession.).

Bean, L.J. 1978. ―Cahuilla." In *California*, edited by R.F. Heizer, pp. 575-587. Handbook of North American Indians, Volume 8. William C. Sturtevant, general editor. Washington DC: Smithsonian Institution.

Bean, L.J. and C.R. Smith. 1978. ―Serrano." In *California*, edited by R.F. Heizer, pp. 570-574. Handbook of North American Indians, Volume 8. William C. Sturtevant, general editor. Washington DC: Smithsonian Institution.

Bean, L.J. and K.S. Saubel. 1972. ―Temalpakh (From the Earth)." *Cahuilla Indian Knowledge and Usage of Plants*. Banning, CA. Malki Museum Press.

Bean, L.J. and S.B. Vane (CSR, Inc.). 1979. *Cultural Resources and the Devers-Mira Loma 500Kv Transmission Line Route (Valley to Mira Loma Section): A Study of the Paleontology, History and Archaeology of the Vicinity of the Line*. On file, Eastern Information Center, University of California, Riverside.

Beattie, K. 1994. ―A Brief History of Highland." Highland Area Historical Society. Retrieved on January 21, 2009. Available online at: http://www.highlandhistory.org/ABriefHistory ofHighlandByKayBeattie(June1994).html.

Beatty, K. 2009. ―The Kite Shaped Track." Highland Area Historical Society. Retrieved on January 22, 2009. Available online at: http://www.highlandhistory.org/THEKITESHAPED TRACK.html.

Belden, L. B. 1960. ―San Bernardino Sesquicentennial." *The San Bernardino Sun-Telegram*, May 20, 1960. Available online at: http://www.ci.san-bernardino.ca.us/about/history/ sesquicentennial/s_1_sesquicentennial_cover.asp.

Bettinger, R. L. and R. E. Taylor. 1974. Suggested Revision in Archaeological Sequences of the Great Basin and Interior Southern California. *Nevada Archaeological Survey, Research Paper* 5:1-26. Reno.

Bettinger, R.L. and M. A. Baumhoff. 1982. ―The Numic Spread: Great Basin Cultures in Competition." *American Antiquity* 47: 485.

Bolton, H.E. 1916. *Spanish exploration in the Southwest, 1542-1706*. Original narratives of early American history. New York: C. Scribner's Sons. Available online at: http://books.google.com/books. Accessed on January 20, 2009.

Brooks, R.H., R. Wilson and S. Brooks. 1980. *An Archaeological Inventory Report of the Owlshead/Amargosa-Mojave Basin Planning Units of the Southern California Desert Area*. Archaeological Research Center, Museum of Natural History, University of Nevada, Las Vegas.

Brown, J. and J.P. Boyd. 1922. *History of San Bernardino and Riverside Counties, Volume III*. pps. 1345-1346. Accessed on January 20, 2009. Available online at: http://books.google.com/books.

California Air Resources Board. April 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. Available online at: www.arb.ca.gov/ch/handbook.pdf. (CARB 2005).

California Environmental Protection Agency. April 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. Available online at: www.climatechange.ca.gov/climate_action_team/reports/index.html.

California Department of Conservation. January 2000. *California Surface Mining and Reclamation Policies and Procedures: Guidelines for Classification and Designation of Mineral Lands*.

California Department of Employment Development. 2008. *Labor Force & Unemployment Data*. Available online at http://www.labormarketinfo.edd.ca.gov/?pageid=164.

California Energy Commission. July 2006. *Our Changing Climate*. Publication CEC-500-2006-077. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.pdf. (CEC 2006).

California Regional Water Quality Control Board, Santa Ana Region. January 1995. *Water Quality Control Plan Santa Ana River Basin (8)*. Available online at: http://www. waterboards.ca.gov/santaana/pdf/R8BPlan.pdf.

Campbell, E.W.C. 1931. ―An Archaeological Survey of the Twenty-nine Palms Region." *Southwest Museum Papers* 7:1-93, Los Angeles.

Campbell, E.W.C. 1936. ―Archaeological Problems in the Southern California Deserts." *American Antiquity* 1(4):295-300.

Campbell, E.W.C. and W.H. Campbell. 1935. ―The Pinto Basin Site." *Southwest Museum Papers* 9:1-51. Los Angeles.

Campbell, E.W.C., W.H. Campbell, E. Antevs, C.A. Amsden, J.A. Barbieri, and F.D. Bode. 1937. ―The Archeology of Pleistocene Lake Mojave." *Southwest Museum Papers 11*. Los Angeles.

Chapman, C.E. 1921. *A History of California: The Spanish Period*. New York, New York: Macmillan Company.

Chartkoff, J. and K. Chartkoff. 1984. *The Archaeology of California*. Stanford, California: Stanford University Press.

City of Highland. *City of Highland General Plan Update,* Updated March 14, 2006. Available online at http://www.ci.highland.ca.us/GeneralPlan/.

City of Highland. *City of Highland Municipal Code*. Passed October 28, 2008. Available online at http://www.ci.highland.ca.us/.

City of Redlands. *City of Redlands Municipal Code*. Last updated by Ordinance No. 2641 passed May 16, 2006. Available online at http://www.ci.redlands.ca.us/plans/municipal_code.htm.

City of Redlands. 1995. *City of Redlands General Plan*. Adopted October 15, 1995, as amended on December 12, 1997. Available online at http://www.ci.redlands.ca.us/plans/general_plan.htm.

Clinch, B.J. 1904. *California and its Missions: Their history to the Treaty of Guadalupe Hidalgo*. San Francisco, CA: Whitaker & Ray Co., Inc.

Crafts, E.P.R. 1906. *Pioneer Days in the San Bernardino Valley*. Redlands, CA: Press of Kingsley, Moles & Collins Co.

Davis, E.L. 1978. ―The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country." *Natural History Museum of Los Angeles County Science Series* 29. Los Angeles, CA.

Dudek & Associates, Inc. October 2008. *Habitat Conservation Plan for Upper Santa Ana River*.

Dudek & Associates, Inc. October 2008. *Final Existing Biological Conditions Report for the Upper Santa Ana River Habitat Conservation Plan.*

Duvall, J. and W.T. Venner. 1979. ―A Statistical Analysis of the Lithics from the Calico Site (SBCM 1500A), California." In *Journal of Field Archaeology*, Vol. 6, No. 4: 455

Fagan, B.M. 1995. *Ancient North America: The Archaeology of a Continent*. New York, New York: Thames & Hudson.

Fagan, B.M. 2003. *Before California: an archaeologist looks at our earliest inhabitants*. Walnut Creek, California: AltaMira Press.

Federal Emergency Management Agency (FEMA), Federal Insurance Administration, National Flood Insurance Program. August 28, 2008. *Flood Insurance Rate Map, San Bernardino County, California, Panel Number 8726H*.

Gibbon, G.E. and K.M. Ames. 1998. *Archaeology of Prehistoric Native America: An Encyclopedia*. New York and London: Taylor & Francis Group.

Gilreath, A.J. and W.R. Hildebrandt. 1991. *National Register of Historic Places Registration Form: Sugarloaf Archaeological District*. USDI, National Park Service, Washington, D.C.

Grant, C., J.W. Baird and J.K. Pringle. 1968. ―Rock Drawings of the Coso Range, Inyo County, California." *Maturango Museum Publication* 4. China Lake, California.

Greenwood, R.S. 1988. *Cultural Resources Survey, Upper Santa Ana River, California*. On file at the Archaeological Information Center, San Bernardino County Museum.

Hall, M.C. and M.E. Basgall. 1994. ―Lessons to Learn from Newberry/Gypsum Period Archaeology of the Mojave Desert." In *Kelso Conference Papers 1987-1992: A Collection of Papers and Abstracts from the First Five Kelso Conferences on the Prehistory of the Mojave Desert*, edited by G.D. Everson and J.S. Schneider, pp.84-94. California State University, Bakersfield, Museum of Anthropology Occasional Papers in Anthropology No. 4.

Hall, S.A. 1985. ―Quaternary Pollen Analysis and Vegetational History of the Southwest." In *Pollen Records of Late Quaternary North American Sediments*, edited by V. M. Bryant, Jr., and R. G. Holloway, pp. 95.

Hall, W.H. 1888. *Irrigation in California [Southern]: The Second Part of the Report of the State Engineer of California on Irrigation and the Irrigation* Question. Sacramento: J. D. Young.

Harrington, M. and R.D. Simpson. 1961. ―Tule Springs, Nevada, With Other Evidences of Pleistocene Man in North America." *Southwest Museum Papers* 18. Los Angeles.

Harrington, M.R. 1957. ―A Pinto Site at Little Lake." *Southwest Museum Papers* 17. Los Angeles.

Heizer, R.F. and M.A. Whipple, eds. 1971. *The California Indians: A Sourcebook*. Berkeley, California: University of California Press.

Hicks, F. 1958. ―Archaeological Investigations in the Yucaipa Valley." *San Bernardino County Museum Association 6:1.* November 1958.

Horne, M. and C. Inoway. 1998. *Archaeological Site Record Supplement for CA-SBR-6874H*. On file at the San Bernardino Archaeological Information Center (SCIC), located at the San Bernardino County Museum. Available only to qualified individuals.

Hunt, A.P. 1960. ―Archaeology of the Death Valley Salt Pan." *University of Utah Anthropological Papers* 47, Salt Lake City.

The Interorganizational Committee on Principles and Guidelines for Social Impact Assessment. 2003. ―Principles and guidelines for social impact assessment in the USA." *Impact Assessment and Project Appraisal, 21, Part 3 (2003).* P. 231-250.

Jones, T. L and K.A. Klar. 2007. *California Prehistory: Colonization, Culture, and Complexity*. Lanham, Maryland: AltaMira Press.

King, C. and Casebier, D.G., 1976. *Background to Historic and Prehistoric Resources of the East Mojave Desert Region*, Prepared for the United States Department of Interior Bureau of Land Management, California Desert Planning Program. Archaeological Research Unit, University of California, Riverside.

Kohler, Susan L. California Geological Survey, Department of Conservation. 2006. *Aggregate Availability in California: Fifty-Year Aggregate Demand Compared to Permitted Aggregate Resources* [map]. 1:1,100,000.

Kroeber, A.L. 1976. *Handbook of the Indians of California*. New York, New York: Dover Publications, Inc.

Lamb, S. M., 1958. ―Linguistic Prehistory of the Great Basin." *International Journal of American Linguistics* 24: 95.

Lanning, E. P. 1963. ―The Archaeology of the Rose Spring Site (INY-372)." *University of California Publications in American Archaeology and Ethnology* 49(3):237-336, Berkeley.

Lewis Publishing Company. 1890. ―San Bernardino County History." *An Illustrated History of Southern California.* Chicago, IL: Lewis Publishing Co. Retrieved on January 22, 2009. Available online at: http://www.calarchives4u.com/history/sanbernardino/index.htm.

Lilburn Corporation. *Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Mine and Reclamation Plan for the Upper Santa Ana River Wash Aggregate Lands to be Operated by Cemex Construction Materials L.P*. Updated March 2006.

Lilburn Corporation. *Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Mine and Reclamation Plan for the Upper Santa Ana River Wash Aggregate Lands to be Operated by Robertson's Ready Mix.* Updated March 2006.

LSA Associates, Inc. 2008, *Final Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Environmental Impact Report (EIR)* (State of California Clearinghouse No. 2004051023). San Bernardino Valley Water Conservation District. Certified November 5, 2008. Available online at http://www.sbvwcd.dst.ca.us/projects/washplan.shtml.

LSA Associates, Inc. January, 2007. *Traffic Study Upper Santa Ana River Wash, San Bernardino County, California*.

Lyneis, M.M. 1982. ―Prehistory of the Southern Great Basin." In *Man and Environment in the Great Basin*, edited by D. Madsen and J. F. O'Connell, pp. 172.

Madsen, D. and D. Rhode (eds.). 1994. *Across the West: Human Population Movement and the Expansion of the Numa*. Salt Lake City, UT: University of Utah Press.

Marshall, J. 1998. *Protecting the Gold.* Los Angeles Westerners Corral, pp. 13-15.

Miles, S.R. and C.B. Goudey. 1997. *Ecological Subregions of California: section and subsection descriptions*. R5-EM-TP, 005. San Francisco, California: USDA Forest Service, Pacific Southwest Region.

Moratto, M. 1984. *California Archaeology*. Florida: Academic Press.

Office of Historic Preservation. 1995. *Instructions for Recording Historical Resources*. Sacramento, California: Office of Historic Preservation. Accessed on January 20, 2008. Available online at: http://ohp.parks.ca.gov/pages/1054/files/manual95.pdf.

Roberts, N. 1989. *The Holocene: An Environmental History*. Malden, MA: Blackwell Publishers.

Rogers, M.J. 1939. *Early Lithic Industries of the Lower Basin of the Colorado and Adjacent Desert Regions*. San Diego Museum Papers, No. 3 (May).

Rogers, M.J. 1945. ―An Outline of Yuman Prehistory." *Southwestern Journal of Anthropology* 1(1):167-198.

Rolle, A.F. 2003. *California: A History*. New York, NY: Crowell.

Rumble, J. R. 1937. *History: The Mill Creek Zanja, San Bernardino County, State of California, 1819-1937*. United States Works Progress Administration.

San Bernardino Valley Water Conservation District. 2008. *Upper Santa Ana River Wash Land Manegement and Habitat Conservation Plan (SCH 2004051023)*, certified on November 5, 2008. (SBVWCD 2008).

Santa Ana Regional Water Quality Control Board. 2006. *2006 CWA Section 303 (d) List of Water Quality Limited Requiring TMDLS*. Retrieved on December 18, 2008. Available online at http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r8_06_303d_reqtmdls.pdf.

Santa Ana Watershed Project Authority (SAWPA). 2008. *Santa Ana River Trail*. Available online at http://www.sawpa.org/projects/planning/sart.htm.

Shea, J.G. 1969. *History of the Catholic Missions Among the Indian Tribes of the United States, 1529-1854*. New York, NY: Arno Press.

Southern California Association of Governments. 2004. *Growth Forecasting: City Projections*. Available online at http://www.scag.ca.gov/forecast/downloads/2004GF.xls.

Spaulding, W. G. 1985. *Vegetation and Climates of the Last 45,000 Years in the Vicinity of the Nevada Test Site, South-Central Nevada*. United States Geological Survey Professional Paper 1329.

Spaulding, W.G. 1990. ―Vegetational and Climatic Development of the Mojave Desert: The Last Glacial Maximum to the Present." In *Packrat Middens: The Last 40,000 Years of Biotic Change*, edited by J. L. Betancourt, P. S. Martin, and T. R. Van Devender, pp. 166-199. Tucson, AZ: University of Arizona Press.

Spaulding, W.G. 1991. ―A Middle Holocene Vegetation Record from the Central Mojave Desert and its Paleoclimatic Significance." *Quaternary Research* 35:427-437.

Spaulding, W.G. 1995. ―Environmental Change, Ecosystem Responses, and the Late Quaternary Development of the Mojave Desert." In *Quaternary Environments and Deep History: A Tribute Paul S. Martin*, edited by J. I. Mead and D. S. Steadman. Rapid City, SD: Fenske Printing, Inc.

Strong, W.D. 1929. ―Aboriginal Society in Southern California". *University of California Publications in American Archaeology and Ethnology 26*. Berkeley, California.

Sugranes, E.J. 1909. *The Old San Gabriel Mission: historical notes taken from old manuscripts and records*.

Sutton, M.Q. 1988. ―An Introduction to the Archaeology of the Western Mojave, California." *Archives of California Prehistory* 14. Salinas, CA: Coyote Press.

Sutton, M.Q. 1996. ―The Current Status of Archaeological Research in the Mojave Desert." *Journal of California and Great Basin Anthropology* 18 (2):221.

Sutton, M.Q. et al. 2007. ―Advances in Understanding the Mojave Desert Prehistory." In *California Prehistory Colonization, Culture and Complexity*, edited by T.L. Jones and K.A. Klar, pp.229-245. Altamira Press, Lanham, MD.

Tang, B. and M. Hogan. 2006. *Identification and Evaluation of Historic Properties, Mountain View IV Windfarm Project.* Prepared by CRM TECH for Bureau of Land Management, Palm Springs-South Coast Field Office, October 26, 2006. Available online at: http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pdfs/palmsprings_pdfs/mountainview4.Par.28634.File.dat/Mtn%20View%20IV%20Archeo%20Study-Old.pdf. Accessed on January 20, 2009.

Teal, G. 1980. *Archaeological Site Record Update for CA-SBR-4220H*. On file at the San Bernardino Archaeological Information Center (SCIC), located at the San Bernardino County Museum. Available only to qualified individuals.

Transportation Research Board. 1985. *Highway Capacity Manual, Special Report 209*. Washington, DC.

URS Corporation. 2007. *San Bernardino County General Plan*. Adopted March 13, 2007. Available online at http://www.sbcounty.gov/landuseservices/general_plan/Default.asp.

URS Corporation. 2000a. *San Bernardino Merriam's kangaroo rat Trapping Survey in Section 12 and 13, (T1S, R3W) on Redlands USGS 7.5 Minute Topographic Quadrangle Map*. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2000b. *SBMKR Water Recharge Basin Survey Report, Section 7 T1S, R2W and Section 12, T1S, R3W*. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2001. *Biological Feasibility Report: Proposed Water Recharge Basin Sites*. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003a. *Amendment Report: San Bernardino kangaroo rat Trapping Survey in the Northeast Quarter of Section 9, Township 1 South, 3 West on Redlands US GS 7.5 Minute Topographic Quadrangle Map*. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003b. *San Bernardino kangaroo rat Habitat Assessment and Trapping Survey in Section 10 and Portions of Section 15, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map*. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003c. *San Bernardino kangaroo rat Habitat Assessment and Trapping Survey in the East Half of Section 9, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map*. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003d. *San Bernardino kangaroo rat Trapping Survey in the Northeast Quarter of Section 9, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map*. Santa Ana, CA: San Bernardino Valley Water Conservation District.

U.S. Census Bureau. *Census 2000 Summary File 3 (SF 3)*. Retrieved on January 2, 2009. Available online at http://factfinder.census.gov/servlet/DatasetMainPageServlet?_ds_name=DEC_2000_SF1_U&_program=DEC&_lang=en.

U.S. Department of Agriculture, U.S. Soil Conservation Service. 1980. *Soil Survey of San Bernardino County, Southwestern Part, California*, U.S. Government Printing Office, Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management. January 2008. *National Environmental Policy Act Handbook (H-1790-1).* Washington, D.C.: The Bureau.

U.S. Department of the Interior, Bureau of Land Management. June 1996. *Santa Ana Wash Area of Critical Environmental Concern Research Natural Area Proposed Management Plant and Environmental Assessment*.

U.S. Department of the Interior, Bureau of Land Management, Palm Springs – South Coast Resource Area. 1994. *South Coast Resource Management Plan and Record of Decision*. Palm Springs, CA: The Bureau.

U.S. Department of the Interior, Bureau of Land Management. 1986. *Visual Resource Management Inventory (BLM Manual Handbook H-84101-1).* Washington, D.C.: The Bureau.

U.S. Department of the Interior, Bureau of Land Management. 1986. *Visual Resource Contrast Rating (BLM Manual Handbook H-8431-1).* Washington, D.C.: The Bureau.

U.S. Department of Interior, Fish and Wildlife Service. 2008. *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Bernardino kangaroo rat (Dipodomys merriami parvus); Final Rule*.

U.S. Department of Interior, Fish and Wildlife Service. 1987. *Endangered Status Final Rule for Eriastrum densifolium ssp. sanctorum (Santa Ana River woolly star) and Centrostegia leptoceras (Slender-horned Spineflower)*. Federal Register 52(187):36265-36270.

U.S. Department of Interior, Fish and Wildlife Service. 1998. *Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino Kangaroo Rat as Endangered (63 FR 51005)*.

U.S. Department of Interior, Fish and Wildlife Service. 2007. *Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the San Bernardino Kangaroo Rat; Proposed Rule (50 CFR Part 17)*.

U.S. Department of the Interior, National Park Service. 1995. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation.* National Park Service, Washington, D.C.

Wallace, W. J. 1958. ―Archaeological Investigations in Death Valley National Monument, 1952-1957." Pp. 7-22 in Current Views on Great Basin Archaeology. *University of California Archaeological Survey Reports* 42. Berkeley.

Wallace, W.J. 1962. ―Prehistoric Cultural Development in the Southern California Deserts." *American Antiquity* 30(4):434-441.

Wallace, W.J. 1977. *Death Valley National Monument's Prehistoric Past: An Archaeological Overview*. Report on File, Western Archaeological Center, National Park Service, Tucson.

Warren, C. N. 1967. ―The San Dieguito Complex: A Review and Hypothesis." *American Antiquity* 32(4), pp. 168-185.

Warren, C.N. 1980a. "Pinto Points and Problems in Mojave Desert Archaeology." In *Anthropological Papers in Memory of Earl H. Swanson, Jr.*, edited by L. B. Harton, Claude N. Warren, and Donald R. Tuohy, pp. 67-76. Pocatello, ID: Idaho Museum of Natural History.

Warren, C.N. 1980b. "The Archaeology and Archaeological Resources of the Amargosa-Mojave Basin Planning Units." In *A Cultural Resource Overview for the Amargosa-Mojave Basin Planning Units*, edited by C. N. Warren, M. Knack, and E. von Till Warren, pp. 1-134. Cultural Resource Publications, Anthropology-History. USDI Bureau of Land Management, Riverside, CA.

Warren, C.N. 1984. "The Desert Region." In *California Archaeology*, edited by M. J. Moratto. New York: Academic Press.

Warren, C.N. 1990. "Archaeological Investigations at Nelson Wash, Fort Irwin, California." *Fort Irwin Archaeological Project Research Report No. 23, Volumes I and II*. Interagency Archaeological Services, National Park Service, Western Region, San Francisco.

Warren, C.N. and R.H. Crabtree. 1986. "Prehistory of the Southwestern Area." In *Great Basin*, edited by W.L. d'Azevedo, pp.183-193. Handbook of North American Indians, Vol.11. W.C. Sturtevant, general editor. Washington D.C.: Smithsonian Institution.

Whitehead, R.E. 1978. *Lugo, A Chronicle of Early California*. Redlands, CA: San Bernardino County Museum Association.

APPENDIX B: GLOSSARY

Active Fault. A fault that has moved recently and that is likely to move again. It is usually defined as one that has shown movement within the last 11,000 years and can be expected to move again within the next 100 years.

Administrative Record. The administrative record includes the compilation of notices, background reports, and environmental review documents that provide a record of the environmental review, public involvement, and decision-making processes required by NEPA that are related to a project.

Aesthetics. The perception of artistic elements, or elements in the natural or human-made environment, that are pleasing to the eye.

Air Quality Criteria. Air quality criteria are the levels of pollution and length of exposure at which adverse effects on human health and welfare occur.

Air Quality Standards. Air quality standards are the prescribed level of pollutants in the outside air that cannot be exceeded legally during a specified time in a specified geographical area.

Alluvial Fan. A fan-shaped accumulation of disintegrated soil material, deposited by water and located in a position where the water departs from a steep, narrow course to enter upon a flat plain or an open valley bottom.

Alquist-Priolo Special Study Zone. In 1972, the State of California began delineating Special Studies Zones around active and potentially active faults in the state. The zones extend about 660 feet on either side of identified fault traces. No structures for human occupancy may be built across an identified fault trace. An area of 50 feet on either side of an active fault trace is assumed to be underlain by the fault unless proven otherwise. Proposed construction within the Special Studies Zone can take place only following completion of a geotechnical report prepared by a California Registered Geologist or Certified Engineering Geologist.

Ambient Air. Ambient air is that portion of the atmosphere, outside of buildings, to which the general public has access.

Area of Critical Environmental Concern (ACEC). A Special Area designation established through the Bureau of Land Management‘s land use planning process (43 CFR 1610.7-2) where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes; or to protect life and safety from natural hazards. The level of allowable use within an ACEC is established through the collaborative planning process. Designation of an ACEC allows for resource use limitations to protect identified resources or values.

Arterial (Transportation). An arterial is a major street carrying the traffic of local and collector streets to and from freeways and other major streets, with controlled intersections, and generally providing direct access to non-residential properties.

Assessor‘s Parcel Number (APN). Given to a parcel or specified area of land by the county tax assessor.

Attainment. Attainment means that there is compliance with state and federal ambient air quality standards within an air basin.

A-Weighted Decibel (dBA). The dB on the A-weighted scale is the sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.

Basins. Basins are typically areas of shallow excavation where water percolation takes place. Flow of water into these basins brings suspended sediment, which is dropped to the basin floor by percolation of the water. This sediment requires periodic removal, which also tills the basin floor for percolation rates to remain efficient.

Biological Assessment (BA). A Biological Assessment is information prepared by, or under the direction of, a federal agency to determine whether a Proposed Action is likely to: (1) adversely affect listed species or designated critical habitat, (2) jeopardize the continued existence of species that are proposed for listing, or (3) adversely modify proposed critical habitat. Biological assessments must be prepared for "major construction activities.” The outcome of this biological assessment determines whether formal consultation or a conference is necessary.

Biological Opinion (BO). A Biological Opinion is a document that includes (1) the opinion of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service as to whether a Federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat.

BLM Lands. Any public lands managed by the Bureau of Land Management (BLM).

California Environmental Quality Act (CEQA). Enacted in 1970, CEQA requires state and local agencies to estimate and evaluate the environmental implications of their actions. It aims to prevent environmental effects of the agency‘s actions by requiring agencies, when feasible, to avoid or reduce the significant environmental impacts of their decisions. If a proposed activity has the potential for a significant adverse environmental impact, an environmental impact report (EIR) must be prepared and certified as to its adequacy before taking action on the proposed project (California Public Resources Code §§ 21000 et seq.)

Candidate Species. Plant and animal taxa considered for possible addition to the List of Endangered and Threatened Species. These are taxa for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list; but issuance of a proposed rule is currently precluded by higher priority listing actions.

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 time period under prevailing roadway, traffic, and control conditions.

Collector (Transportation). A relatively low-speed, low-volume street that provides circulation within and between neighborhoods. Collectors usually serve short trips and are intended for collecting trips from local streets and distributing them to the arterial network.

Conditional Use Permit (CUP). Pursuant to a zoning ordinance, a conditional use permit may authorize uses not routinely allowed on a particular site. Conditional use permits require a public hearing, and if approval is granted, are usually subject to the fulfillment of certain conditions by the developer. Approval of a conditional use permit is not a change in zoning.

Council of Governments (COG). There are 25 Councils of Governments in California, made up of elected officials from member cities and counties. Councils of Governments are regional agencies concerned primarily with transportation planning and housing; they do not directly regulate land use. An example of a Council of Government is the Southern California Association of Governments.

Critical Habitat. Habitat designated by the U.S. Fish and Wildlife Service pursuant to Section 4 of the Endangered Species Act, under the following criteria: (1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features (a) essential to conservation of the species, and (b) which may require special management or protection; or (2) specific areas outside the geographical area occupied by the species at the time it is listed but considered essential to the conservation of the species.

Cultural Resources. Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or a community for scientific, traditional, religious, or any other reason.

Cultural Site. A physical location of past human activities or events. Cultural resource sites are extremely variable in size and range, from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features. Prehistoric and historic sites, which are recorded as cultural resources, have sociocultural or scientific value and meet the criterion of being more than fifty years old.

Culverts. Typically, pipes or boxes used to pass water in a canal beneath a road crossing.

Cumulative Impact. The total impact resulting from the accumulated impacts of individual projects or programs over time.

Decibel (dB). The standard unit of measurement for sound pressure level and vibration level. Technically, a decibel is the unit of level which denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm of this ratio. Also written as dB. Disturbed Habitat. Disturbed habitat refers to areas that lack vegetation entirely but do not contain an impermeable surface. These areas are generally the result of severe or repeated mechanical perturbation.

Diversion Structures. Structures that divert water into basins. The diversion structures typically consist of concrete or cement block, with wooden gates and associated hardware. Activities include clearing encroaching vegetation, clearing of debris or sediment from the nearby canal, repair of the nearby canal, and repair of damage to the structure itself.

Emission Standard. The maximum amount of pollutant legally permitted to be discharged from a single source, either mobile or stationary.

Endangered Species. As defined in the Federal Endangered Species Act, any species which is in danger of extinction throughout all of a significant portion of its range. For terrestrial species, the U.S. Fish and Wildlife Service determines endangered status.

Environment. The physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historic or aesthetic significance.

Environmental Impact Report (EIR). A report required pursuant to the California Environmental Quality Act that assesses all the environmental characteristics of an area, determines what effects or impacts will result if the area is altered or disturbed by a proposed action, and identifies alternatives or other measures to avoid or reduce those impacts.

Erosion. The loosening and transportation of rock and soil debris by wind, rain, or running water or the gradual wearing away of the upper layers of earth.

Exotic Species. A species of plant or animal that is not native to the area in which it is found. Any species that is not indigenous, native, or naturalized.

Expansive Soils. Expansive soils generally have a significant amount of clay particles which can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The extent of shrink/swell is influenced by the amount and kind of clay in the soil. The occurrence of these soils is often associated with geologic units having marginal stability. The distribution of expansive soils can be widely dispersed, and they can occur in hillside areas as well as low-lying alluvial basins.

Fault Zone. Represents a collection of relatively smaller-scale fault segments and fault strands which typically have a similar strike, dip, and sense of movement.

Fault. A fault is a fracture in the earth‘s crust that forms a boundary between rock masses that have shifted.

Feasible. Capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, social, and technological factors.

Federal Land. Land owned by the United States, without reference to how the land was acquired or which federal agency administers the land, including mineral and coal estates underlying private surface.

Fill. This category is a catch-all for a wide range of aggregate uses ranging from general construction fill for altering landforms to trench backfill and pipe bedding. Depending on the use, this material can consist of crushed and graded aggregate and sand.

Flood Insurance Rate Map (FIRM). For each community, FIRM is the official map on which the Federal Insurance Administration has delineated areas of special flood hazard and the risk premium zones applicable to that community.

Flood, 100-Year. The 100-year flood is the magnitude of a flood expected to occur, on average, every 100 years, based on historical data. The 100-year flood has a $1/100_{th}$, or 1.0 percent, chance of occurring in any given year.

Floodplain. A lowland or relatively flat area adjoining inland or coastal waters that is subject to a 1.0 percent or greater chance of flooding in any given year (i.e., 100-year flood).

Freeway. A high-speed, high-capacity, limited-access road serving regional and countywide travel. Such roads are free of tolls, as contrasted with turnpikes or other toll roads. Freeways generally are used for long trips between major land use generators. Major streets cross at a different grade level.

General Plan. A fundamental policy document for a local government (i.e., county or city) usually including a plan establishing zones of allowable land uses and intensity of use (e.g., residential, commercial, industrial, open space).

Ground Failure. Ground movement or rupture caused by strong shaking during an earthquake. It includes landslide, lateral spreading, liquefaction, and subsidence.

Ground Shaking. Ground movement resulting from the transmission of seismic waves during an earthquake.

Groundwater Recharge. The natural process of infiltration and percolation of rainwater from land areas or streams through permeable soils into water-holding rocks that provide underground storage (aquifers).

Groundwater. Water under the earth‘s surface, often confined to aquifers capable of supplying wells and springs.

Habitat Conservation Plan (HCP). A comprehensive planning document pursuant to Section 10(a)(2) of the Endangered Species Act that is a mandatory component of an incidental take permit for a project with no federal nexus.

Habitat. The physical location or type of environment in which an organism or biological population lives or occurs.

Hazardous Material. A substance or combination of substances that because of its quantity, concentration, or physical, chemical or infectious characteristics, may either: (1) cause, or significantly contribute to, an increase in mortality or an increase in serious, irreversible, or incapacitating, reversible illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous Waste. Hazardous material that cannot be reused or recycled.

Historic Preservation. The preservation of historically significant structures and neighborhoods in order to facilitate restoration and rehabilitation of the building(s) to a former condition.

Inactive Fault. An inactive fault is one that shows no evidence of movement in recent geologic time and no potential for movement in the relatively near future.

Incidental Take. Take of any listed species under the Federal and State Endangered Species Acts that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Also referred to as ~~"~~take".

Land Use. Any land use is the determination by a governing authority of the use to which land within its jurisdiction may be put so as to promote the most advantageous development of the community.

Lead Agency. The public agency that has the principal responsibility for carrying out or approving a project. The Lead Agency decides whether an EIR or Negative Declaration is required for a project and causes the appropriate document to be prepared.

Level of Service (LOS). LOS is a qualitative measure describing operational conditions within a traffic stream and how motorists and/or passengers perceive them.

Liquefaction. Liquefaction is the state or process in which soil material is transformed from a solid into a liquid state, due to increased pore pressure and reduced effective stress. Soil may become liquefied, for example, during and immediately following an earthquake.

Local Cooperation Agreement. A Local Cooperation Agreement is the same as a Project Cooperation Agreement, which is a legally binding contract between the U.S. Army Corps of Engineers and a non-federal sponsor that sets forth the responsibilities of each party in the implementation of a project. This document includes the items of local cooperation.

Migratory Bird Treaty Act (16 U.S.C. § 703 [1994]), as amended. The Migratory Bird Treaty Act was originally drafted in 1916 and later agreed on between the United States and Canada, and subsequently between the United States and Mexico. The Migratory Bird Treaty Act, along with subsequent amendments, provides legal protection for almost all breeding bird species occurring in the United States. The Migratory Bird Treaty Act restricts the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. The treaty allows hunting of certain game bird species, for specific periods, as determined by federal and state governments. The intent of the Migratory Bird Treaty Act is

to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey.

Mineral Resource Zones (MRZs). MRZs are zones that have been identified as having potential mineral and aggregate resources. The California State Mining and Geology Board recommends that MRZ lands be preserved as open space or used for interim uses to allow for future extraction.

> MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone shall be applied where well-developed lines of reasoning, based upon economic geologic principles and adequate data, demonstrate that the likelihood for occurrence of significant mineral deposits is nil or slight.

> MRZ-2: Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. This zone shall be applied to known mineral deposits or where well-developed lines of reasoning, based upon economic geologic principles and adequate data, demonstrate that the likelihood for occurrence of significant mineral deposits is high.

Mitigation Measure. A change in a project designed to avoid, minimize, rectify, reduce, or compensate for a significant environmental impact.

National Ambient Air Quality Standards (NAAQS). National standards established under the Clean Air Act by the Environmental Protection Agency (EPA). These standards prescribe levels of pollution in the outdoor air which may not be exceeded. There are two levels of NAAQS: primary, set at a level to protect the public health from air pollution damage; and secondary, set at a level to protect public welfare from air pollution damage.

National Historic Preservation Act of 1966 (NHPA). The primary federal law providing for the protection and preservation of cultural resources. The NHPA established the National Register of Historic Places (NRHP), the Advisory Council on Historical Preservation (ACHP), and the State Offices of Historic Preservation (OHP).

National Pollutant Discharge Elimination System (NPDES) Permits. According to the NPDES Program (Federal Clean Water Act), any person responsible for the discharge of a pollutant or pollutants into any waters of the United States from any point source must apply for and obtain a permit. According to Section 402 of the CWA, the Environmental Protection Agency is the issuing authority for all NPDES permits in a state until such time as the state elects to take over the administration and obtains EPA approval of its programs. (The State Water Resources Control Board [SWRCB] has this authority in California.) Dischargers are required to disclose the volume and nature of their discharges. Further, the EPA or equivalent state agency has the authority to specify limitations to be imposed on discharges and to require monitoring and reporting as to compliance or non-compliance.

National Register of Historic Places (NRHP). A list of buildings, sites, districts, structures and objects significant in American history, architecture, archeology, and culture maintained by the Secretary of the Interior. Expanded as authorized by Section 2(b) of the Historic Sites Act of 1935 (16 U.S.C. 463) and Section 101(a)(1)(A) of the National Historic Preservation Act.

Native (Indigenous) Species. A species of plant or animal that naturally occurs in an area and that was not introduced by humans.

Natural Community Conservation Planning (NCCP). Regional conservation planning efforts that have been conducted in accordance with the Natural Community Conservation Planning (NCCP) Act of 1991 are designed to provide protection and conservation to threatened and endangered species through a multi-species habitat-based and long-term approach which both ensures a balance between the conservation of the species and habitats and the economic growth of the community in which they exist. The NCCP process provides an alternative to protecting species on a single-species basis, as in the Federal Endangered Species Act (ESA) and California Endangered Species Act (CESA). Under the NCCP Act, the California Department of Fish and Game (CDFG) is responsible for implementing process planning and conservation guidelines for NCCP programs. Local governments and landowners may then prepare the NCCPs so that they comply with both the ESA and CESA. The first program under the NCCP Act addressed coastal sage scrub habitat and the species that inhabit or use coastal sage scrub, focusing on coastal sage scrub habitat protection and the preparation of NCCPs within southern California, including portions of Los Angeles, San Bernardino, Riverside, San Diego, and Orange Counties.

Noise. Any sound that is undesirable because it interferes with speech and/or hearing, or is intense enough to damage hearing, or is otherwise annoying (unwanted sound).

Occupied Critical Habitat. Critical habitat that contains individuals of the species at the time of the project analysis. A species does not have to occupy critical habitat throughout the year for the habitat to be considered occupied (e.g., migratory birds). Subsequent events affecting the species may result in this habitat becoming unoccupied.

Offered Lands. Land owned by the San Bernardino Valley Water Conservation District that will be acquired by the BLM as a result of the land exchange aspect of the Proposed Action.

Ozone. A colorless gas formed by a complex series of chemical and photochemical reactions of reactive organic gasses, principally hydrocarbons, with the oxides of nitrogen, which is harmful to the public health, the biota, and some materials; a molecule of three oxygen atoms, O3. A principle component of ~~"~~oxidant" in photochemically polluted atmospheres.

Particulate Matter (particles). Very fine-sized solid matter or droplets, typically averaging one micron or smaller in diameter.

Peak Hour (Transportation). 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.

Percolation Basin. Aboveground storage place built so as to encourage the percolation of water contained therein underground.

Potentially Active Fault. A potentially active fault can be: (1) A fault that last moved within the Quaternary Period before the Holocene Epoch (the last 2 million to 11 thousand years); and/or (2) a fault that, because it is judged to be capable of ground rupture or shaking, poses an unacceptable risk for a proposed structure.

Project Description. A project description describes the basic characteristics of the project; including location, need for the project, project objectives, technical and environmental characteristics, project size and design, project phasing, and required permits. The level of detail provided in the project description varies according to the type of environmental document prepared.

Recharge Basins. Recharge basins were constructed on-site by the San Bernardino Valley Water Conservation District. These basins contain standing water intermittently during the year. The water in the recharge basins filters through the soil to the groundwater basin and does not remain on the surface long enough to provide habitat for sensitive species. When dry, the basins can be characterized as similar to disturbed habitat.

Right-of-way. An easement, lease, permit, or license across an area or strip of land to allow access or to allow a utility to pass through public or private lands.

Riparian. Riparian land is of or relating to land lying immediately adjacent to a river or stream and having specific characteristics of that transitional area (e.g., riparian vegetation).

Riprap. Large cobble or boulders generally in excess of one foot in diameter. Riprap is used to protect creek banks and shorelines from the erosive forces of currents or wave action. It is also used at culvert outflows to absorb energy and prevent soil erosion.

Riversidean Alluvial Fan Sage Scrub. Riversidean alluvial fan sage scrub is a Mediterranean shrubland type that occurs in washes and on gently sloping alluvial fans. Alluvial scrub is made up predominantly of drought-deciduous soft-leaved shrubs, but with significant cover of larger perennial species typically found in chaparral (Kirkpatrick and Hutchinson 1977). Riversidean alluvial fan sage scrub occurs on alluvial benches throughout the Wash Plan Area, in various stages of succession. More mature areas tend to have woodier vegetation, a higher percentage of cover, and greater diversity than younger areas.

Riversidean Sage Scrub. Dominated by a characteristic suite of low-stature, aromatic, drought-deciduous shrubs and subshrub species. It is a more xeric expression of coastal sage scrub, occurring further inland in drier areas where moisture and climate are not moderated by proximity to the marine environment. Riversidean sage scrub typically occurs on steep slopes, severely drained soils, or clays that are slow to release stored soil moisture (Holland 1986).

Ruderal. Ruderal refers to a species or plant community that occurs on a highly disturbed site.

Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*). The Santa Ana River woolly-star is a perennial herb that blooms in the summer. The entire plant is woolly, with blue, star-like flowers. It is Federal endangered, California State endangered, and California Native Plant Society List 1B.

Section 4 of the Endangered Species Act of 1973, as amended. Section 4 outlines procedures and criteria for: (1) identifying and listing threatened and endangered species; (2) identifying, designating, and revising critical habitat; (3) developing and revising recovery plans; and (4) monitoring species removed from the list of threatened or endangered species.

Section 7 of the Endangered Species Act of 1973, as amended. Section 7 outlines procedures for interagency cooperation to conserve federally listed species and designated critical habitats. Section 7(a)(1) requires federal agencies to use their authority to further the conservation of listed species. Section 7(a)(2) requires federal agencies to consult to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Other paragraphs of this section establish the requirement to conduct conferences on proposed species, allow applicants to initiate early consultation, and require the U.S. Fish and Wildlife Service and National Marine Fisheries Service to prepare biological opinions and issue incidental take statements. Section 7 also establishes procedures for seeking exemptions from the requirements of Section 7(a)(2) from the Endangered Species Committee.

Section 9 of the Endangered Species Act of 1973, as amended. Section 9 prohibits the taking of endangered species of fish and wildlife. Additional prohibitions include: (1) import or export of endangered species or products made from endangered species; (2) interstate or foreign commerce in listed species or their products; and (3) possession of unlawfully taken endangered species.

Section 10 of the Endangered Species Act of 1973, as amended. Section 10 provides exceptions to Section 9 prohibitions. The exceptions most relevant to Section 7 consultations are takings allowed by two kinds of permits issued by the U.S. Fish and Wildlife Service and National Marine Fisheries Service: (1) scientific take permits; and (2) incidental take permits. The U.S. Fish and Wildlife Service and National Marine Fisheries Service can issue permits to take listed species for scientific purposes, or to enhance the propagation or survival of listed species. The U.S. Fish and Wildlife Service and National Marine Fisheries Service can also issue permits to take listed species incidental to otherwise legal activity.

Selected Lands. BLM lands selected for disposal to the San Bernardino Valley Water Conservation District as part of the land exchange aspect of the Proposed Action.

Sensitive Receptors. Sensitive receptors are people or institutions with people, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics) that are particularly susceptible to illness from environmental pollution or noise, and persons engaged in strenuous exercise.

Slender-horned spineflower (*Dodecahema leptoceras)*. The slender-horned spineflower is an annual spreading herb that blooms in the spring. The flower petals and sepals are white to

pink, and hairy. It is Federal endangered, California State endangered, and California Native Plant Society List 1B.

Special Status Species. Plant or animal species listed as endangered, threatened, candidate, or sensitive by federal or state governments.

Streambed Alteration Agreement (California Fish and Game Code, Sections 1600 et seq.). Defines the responsibilities of CDFG and requires public and private applicants to obtain an agreement for projects which would –divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by CDFG in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or would use material from the streambed designated by the department." CDFG wardens and/or unit biologists typically have the responsibility for formulating and issuing Streambed Alteration Agreements.

Subsidence. Ground subsidence is typically a gradual settling or sinking of the ground surface, with little or no horizontal movement, although fissures (cracks and separations) are common. Subsidence can range from small or local collapses to broad regional lowering of the earth's surface. The causes of subsidence are as diverse as the forms of failure, and include: dewatering of peat or organic soils; dissolution in limestone aquifers; first-time wetting of moisture-deficient, low-density soils (hydrocompaction); natural compaction; liquefaction; crustal deformation; subterranean mining; and withdrawal of fluids (groundwater, petroleum, or geothermal). Most of the damage caused by subsidence is the result of oil, gas, or groundwater extraction from below the ground surface, or the organic decomposition of peat deposits. Ground subsidence may occur as a response to natural forces, such as earthquake movements, which can cause abrupt elevation changes of several feet.

Take. To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect listed species, or attempt to engage in any such conduct. Harm is defined by U.S. Fish and Wildlife Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by U.S. Fish and Wildlife Service as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering.

Threatened Species. Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Total Suspended Particulates. Solid or liquid particles small enough to remain suspended in air. PM_{10} is the portion of TSP that can be inhaled.

Utility Corridor. A linear corridor usually designed for facilities such as power lines, pipelines, fiber-optic cables, roads, etc.

Viewshed. The landscape that can be directly seen under favorable atmospheric conditions from a viewpoint or along a transportation corridor.

Volume (Transportation). The volume of traffic is the total number of vehicles that pass over a given point or section of a roadway during a given time interval. Volumes may be expressed in terms of annual, daily, hourly, or sub-hourly periods.

Wastewater. Wastewater is water carrying dissolved or suspended solids from homes, farms, businesses, and industries. The wastewater treatment process includes any process that modifies characteristics of the wastewater, usually for the purpose of meeting effluent standards.

Water Spreading Basins. Also called recharge basins, water spreading basins are surface facilities used to increase the infiltration of surface water into a groundwater basin.

Watershed. A region drained by a stream, lake, or other body of water. In other words, it is a bowl or basin-shaped area in which all water within the area (rain, snow, etc.) will flow to the same outlet point. The Santa Ana River watershed is located in southern California, south and east of the City of Los Angeles. The watershed includes much of Orange County, the northwestern corner of Riverside County, the southwestern corner of San Bernardino County, and a small portion of Los Angeles County.

Wetlands. Lands traditionally between upland and aquatic environments. Wetlands are generally highly productive environments with abundant fish, wildlife, esthetic, and natural resource values. For this reason, coupled with the alarming rate of their destruction, they are considered valuable resources, and several regulations and laws have been implemented to protect them.

Zoning. Regulation by zone districts of the height, use, and area of structures, the use of land, and the density of population and intensity of allowable uses.

APPENDIX C: INDEX

A

ACEC · 2, 4, 1, 2, 3, 6, 8, 9, 10, 1, 2, 7, 13, 14, 18, 45, 46, 77, 78, 87, 90, 91, 18, 19, 20, 21, 23, 25, 26, 27, 31, 45, 47
aggregate mining · 2
Aggregate Mining · 83
aggregate resources · 5, 2, 3, 4, 37, 32
Air Quality · 3, 8, 21, 22, 23, 1, 2, 45, 3, 4, 5, 1
Alquist-Priolo Earthquake Fault Zone · 28
ambient air quality standards (AAQS) · 23
American Period · 109, 110
AQMP · 22, 23, 2, 45
Area of Potential Effect
APE · 105
Assembly Bill 32 (AB 32) · 25

B

Biological Environment · 4, 8, 45

C

California ambient air quality standards
CAAQS · 21
California Department of Fish and Game (CDFG) · 6
California Endangered Species Act (CESA) · 12
CARB
California Air Resource Board · 22, 23, 24, 9
Cemex · 13, 26, 83, 91, 99, 6, 10, 11, 12, 25, 43, 44, 2
Census Block Groups · 92
Census Tracts · 92
chlorofluorocarbons (CFC) · 25
City of Redlands, City of Highlands · 91
Clean Air Act · 21, 22, 25
Clean Water Act · 43, 18, 3
CO
Carbon monoxide · 22, 23, 24, 2, 6, 7, 9, 10, 45, 46
Conditional Use Permit (CUP) · 82, 2, 33
conservation easement · 2, 2, 18, 21
Construction Materials, LP (Cemex) · 37
Council on Environmental Quality
CEQ · 1, 7
criteria pollutants · 21, 24, 2, 6, 45
cultural resources · 3, 5, 8, 78, 105, 106, 110, 40, 41, 42, 48, 49, 2
Cultural Resources · 5, 9, 105, 119, 40, 48, 5

D

D Dike · 7, 85, 88, 20, 26
Designated Critical Habitat (DCH) · 46

E

endangered species · 2, 6, 11, 12, 7, 1, 4
Executive Order S-3-05 · 8, 9, 46
Expansive soils · 33, 4

F

Federal Endangered Species Act (ESA) of 1973 · 12
Federal Land Policy and Management Act of 1976
FLPMA · 1, 13, 75, 77
Federal Register · 3, 7, 8, 1, 2
floodplain · 4, 43, 45, 13

G

General Plan · 13, 22, 33, 81, 82, 83, 89, 91, 27, 44
Geology and Mineral Resources · 3, 8, 27, 11, 46
GHG · 25, 8, 9, 46
Global Climate Change · 25, 8
Greenhouse Gases (GHG) · 25
Groundwater · 44

H

Habitat Conservation Area · 2
hydrologic related hazards · 13
Hydrology and Water Quality · 8, 13, 46

L

Landslides · 33
Lead · 1, 7, 13, 75
lead (Pb) · 23
Liquefaction · 29, 30, 35

M

Management Inventory and Contrast Rating System · 34
MBTA · 18
Metropolitan Planning Organization (MPO) · 22
Mexican Period · 109
Mine Reclamation Plans · 12

Mineral Resource Zone-2 · 11
mineral resource zones · 13
mineral resources · 37
mining permits · 40
Mitigation measures · 1
Mitigation Measures · 40

N

national ambient air quality standards (NAAQS) · 21
National Historic Preservation Act
NHPA · 105
National Register of Historic Places
NRHP · 105, 40
Native American · 108, 110, 42, 7
nitrogen dioxide (NO_2) · 23
Non-native Grassland (NNG) · 52
Notice of Intent (NOI) · 3
NO_x
Nitrogen · 23, 8, 10, 45

O

ozone (O_3) · 23

P

PM_{10} · 21, 23, 24, 26, 3, 6, 10, 46
$PM_{2.5}$ · 21, 23, 24, 6, 10

R

Research Natural Area (RNA) · 14
Riversidean alluvial fan sage scrub · 51
Robertson‘s · *See* Robertson Ready Mix
Robertson‘s Ready Mix
Robertson's · 3, 6, 2
ROD · 8
Ruderal vegetation · 53

S

San Andreas Fault · 27
San Bernardino County Association of Government‘s (SANBAG‘s) · 2
San Bernardino County Flood Control District (SBCFCD) · 6
San Bernardino kangaroo rat · 14, 58, 59
Santa Ana River Wash Land Management Plan
Wash Plan · 6, 11
Santa Ana River Wash Land Management Plan:Wash Plan" \b · 44
Santa Ana River woolly-star · 7, 14, 45, 51, 57, 58, 77, 3
SCAQMD · 3, 22, 24, 26, 27, 2, 3, 7, 10, 11
Section 303(d) · 43
Seven Oaks Dam · 44
slender-horned spineflower · 2, 3, 7, 14, 51, 57, 58, 77, 3
SMARA · 13, 12
Socioeconomics · 9, 91, 31, 48, 3, 4, 5
Soil resources · 37
South Coast Resource Management Plan (SCRMP)
SCRMP · 1, 1, 10, 75, 99
Southern California Association of Governments
SCAG · 21, 92, 6, 7
Spanish Period · 109
special status plant species · 57
special status wildlife species · 58
State Historic Preservation Officer
SHPO · 106
State Implementation Plan (SIP) · 22
State Water Resources Control Board
SWRCB · 43
subsidence · 33

T

Task Force · 6
Total Maximum Daily Loads (TMDL) · 43
Toxic Air Contaminants (TACs) · 24
trails · 11, 81, 82, 89, 90, 91, 3, 10, 27, 28, 44, 47
Trails · 89
Transportation Systems and Traffic · 5, 9, 32

V

Visual Resource Management (VRM) · 99
Visual Resources · 5, 9, 99, 33, 48, 49, 3, 4, 5
Visual simulations · 35
Visual Sphere of Influence (VSOI) · 101
VRM · 5, 99, 101, 105, 34
VRM classification · 5, 34

W

wildlife corridors · 59
Woolly Star Preserve Area (WSPA) · 3, 46, 59, 17, 18, 21
woolly-star · 3

APPENDIX D: SCOPING COMMENTS

California Regional Water Quality Control Board
Santa Ana Region

Terry Tamminen
Secretary for Environmental Protection

3737 Main Street, Suite 500, Riverside, California 92501-3348
(909) 782-4130 • Fax (909) 781-6288
http://www.swrcb.ca.gov/rwqcb8

Arnold Schwarzenegger
Governor

copy

May 25, 2004

Greg Hill
Santa Ana River Wash Project
Bureau of Land Management
690 West Garnet Avenue
PO Box 581260
North Palm Springs, CA 92258

COMMENTS ON NOTICE OF PREPARATION (NOP) FOR THE UPPER SANTA ANA RIVER WASH LAND MANAGEMENT AND CONSERVATION HABITAT PLAN

Dear Mr. Hill:

Thank you for providing the opportunity to comment on the above-referenced Notice of Preparation. The proposed project involves a wide variety of activities that will require the issuance of a 404 Permit by the U.S. Army Corps of Engineers (Corps). The issuance of a 404 Permit necessitates the issuance of a Clean Water Act Section 401 Water Quality Standards Certification (Certification) by the Santa Ana Regional Water Quality Control Board (Regional Board) accompanied by general waste discharge requirements (WDRs) in accordance with Porter-Cologne Water Quality Control Act in addition to the permitting responsibilities noted in the NOP.

Several existing Corps' 404 Nation Wide Permits (NWPs) authorize a variety of the water conservation and flood control activities discussed in the NOP. Although 401 Certifications may not have been sought for these activities, appropriate Certifications and authorizations under Porter-Cologne are necessary.

Since the issuance of 401 Certifications are subject to CEQA, Regional Board staff believes that the proposed EIR is an opportunity to legitimately authorize discharges of dredge and fill associated with maintenance according to conservation and flood control activities. Regional Board staff would appreciate the opportunity to work with the discharging agencies to evaluate the range of maintenance activities and consider the issuance of one or more programmatic certifications in order to streamline the permitting process.

Santa Ana River Wash Project - 2 - May 25, 2004

If you have any questions, please do not hesitate to contact me at (909) 320-6363 or by electronic message at afischer@rb8.swrcb.ca.gov.

Sincerely,

Adam P. Fischer
Environmental Scientist
Region 8 401 Certification Coordinator

APF:401/CEQA comments/upper SAR wash land management~

California Environmental Protection Agency

Recycled Paper

1089

26 May 04

Re: proposed land exchange with San Bernardino Valley Water Conservation District to protect Ericastrum densiflorum and Dodecahema leptoceras

Please add my name to your mailing list for the EIS for the South Coast RMP amendment.

Thank you

Christian Spies

C.G. Spies
P.O. Box 154
Ocean Beach, NY 11770-0154

copy

>
>
>
> Greg Hill
> Planning & NEPA Coordinator
> BLM Palm Springs-South Coast Field Office
> (760) 251-4840
>
>
>
>
> Richard Miller <REMiller@linkline.com>
> 05/03/2004 04:55 PM
>
>
> To: <gchill@ca.blm.gov>, Richard Miller <RMiller@TVN.com>,
Richard Miller
> <REMiller@linkline.com>
> cc:
> Subject: Upper Santa Ana River Wash Land Mgmt - Question and
CONCERNS
>
>
>
> Greg,
>
> I am one of two residents with property physically touching Cone Camp Road
> in Highland California. My neighbors have received letters from LSA
> regarding Land IMPACT and public comment re: the Upper Santa Ana River
> Wash
> Land Mgmt Conservaton and Habitation Plan.
>
> I have NOT received a copy of the letter and I would like to attend the
> meeting.
>
> Can you send me a copy of the LSA letter?
>
> Rich Miller
> P.O. Box 697
> Highland, CA 92346
>
>
>

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
Established 1932

1630 West Redlands Boulevard, Suite A
Redlands, CA 92373-8032
(909) 793-2503
Fax: (909) 793-0188

P.O. Box 1839
Redlands, CA 92373-0581
Email: info@sbvwcd.dst.ca.us

RECEIVED
AUG 12 AM 11:35

Memorandum

To: All Interested Parties

From: Lawrence Libeu, General Manager

Subject: Extension of Deadline for Public Comment on Draft Environmental Impact Report for the Santa Ana River and Mill Creek Water Rights Application and Groundwater Management Plan, SCH# 2003071003

Date: August 10, 2004

San Bernardino Valley Water Conservation District is extending the deadline for public comments on the draft environmental impact report for the Santa Ana River and Mill Creek Water Rights Application and Groundwater Management Plan, SCH# 2003071003. The new deadline for public comments is 5:00pm on August 27, 2004.

BOARD OF DIRECTORS
Bert Marcum, Jr.
Clare Henry Day
Arnold L. Wright
Sterling Woodbury
Cheryl A. Tubbs
Melody Henriques
Manuel Aranda, Jr.
GENERAL MANAGER
Lawrence M. Libeu

COPY

Kay Dyk
<kpjogging@yahoo.com>
05/18/2004 12:03 PM

To: gchill@ca.blm.gov
cc:
Subject: Santa Ana River proposed projects

Dear Mr. Hill,

My husband and I are homeowners in Redlands on the northside and sit next to the southern bluffs of the Santa Ana River.

I am writing to let you know that we are opposed to allowing the sand and gravel operations to expand in the wash. Redlands has some of the worst air pollution in So. California. To allow the mining operations to expand would put more particulates in the air. I have 2 boys with asthma problems that don't need to breath in anymore particulates than they already do. Also this is the dirtiest place I have ever lived in terms of dust in the house. A neighbor who also lives next to the bluff also made the same comment completely unsolicited by me. I grew up on a Montana wheat farm surrounded by wheat fields so I am no stranger to dirt and dust.

We are also concerned that expansion of the gravel operations means mining 24 hrs a day and maybe 7 days a week. Currently mining operations are basically limited to daylight hours and aren't done on weekends. When the companies are mining we can quite clearly hear the sound of rocks being dumped and the backup beepers on the loaders. In the past late at night we've heard this noise and found it quite annoying and disruptive to our sleep.

Also these open pits are an eyesore. There is one next to Alabama street that isn't the last time I looked being used. Why isn't that pit being relandscaped? Is this what we have to look forward to is looking at unused open pits that haven't been reclaimed?

Again, our vote is no to expanding the mining operations.

Sincerely,

Mrs. Kay L. Dyk

Do you Yahoo!?
SBC Yahoo! - Internet access at a great low price.

COPY

remiller@linkline.com
05/04/2004 10:07 AM

To: Greg_Hill@ca.blm.gov
cc: remiller@linkline.com, rmiller@tvn.com
Subject: Re: Upper Santa Ana River Wash Land Mgmt - Question and CONCERNS

Greg,

Thanks for the info. I'll copy and peruse it when I get home tonight.

I have looked over my neighbors LSA letter and my first impression is that this actually puts our properties in a good position (no neighbors).

Of greatest concern: My neighbors tell me that they have talked to at least two people in the City of Highland government who tell them that the street, Cone Camp Road to Greenspot Road, then Greenspot Road, is scheduled to be used as access to the sand and gravel mining operation. -- A back door if you will -- They have been told that the mining company will be using Cone Camp Road and Greenspot Road on a daily basis.

To put it mildly, if this is true, it is unacceptable.

Can you shed some light on this information? My neighbors are about to contact the residents in the 350 homes on the north side of Greenspot Road.

Rich Miller

PS: Thanks for the call this AM. My wife relayed the information to me and I have accessed my personal email via the internet at work.

Greg_Hill@ca.blm.gov writes:

> Dear Mr. Miller,
> Attached in this e-mail is a copy of the Notice of Intent to Prepare an
> Environmental Impact Statement for Preparation of a Habitat Conservation
> Plan. I'll also make sure you get a copy of the letter that LSA sent out.
>
> This project proposal is being developed by the San Bernardino Valley
> Water Conservation District, but also involves public lands managed by the
> Bureau of Land Management, and private lands used for sand and gravel
> mining. The intent is to improve water recharge and conservation on Water
> Conservation Lands, allow continued sand and gravel mining, and protect
> some of the last remaining habitat for sensitive species in the Santa Ana
> River Wash. LSA and associates are the consultants that will prepare the
> Environmental Impact Statement for the Water Conservation District and the
> BLM. Public scoping meetings, to describe the proposed action and gather
> public input, will be conducted in Highland on May 12, and in Redlands on
> May 19. This proposal does not substantially change the uses of the area,
> and should not affect private lands outside the proposed project area.
>
> Let me know if you have further questions. You can also mail concerns or
> comments to LSA, the Water Conservation District, or the BLM. Our address
> is:
> Bureau of Land Management
> Palm Springs-South Coast Field Office
> PO Box 581260
> N. Palm Springs, CA 92258

copy

RECEIVED
BUREAU OF LAND MANAGEMENT
04 MAY 12 PM 1:05
BLM SERVICE CENTER SOUTH COAST
RESOURCE AREA

Greg Hill
Santa Ana River Wash Project
BLM
P.O. Box 581260
North Palm Springs, CA 92258

Mr. Hill:

I am writing this letter to you to express my opposition to the sand and gravel mining operations expansion plans being considered in conjunction with the Upper Santa Ana River Wash Land Management and Conservation Habitat Plan. I reside at 30357 Mission St., Highland, CA. Greenspot Road basically acts as the only buffer between our home and the expanded mining operations that are being proposed. Last estimated appraised value of these homes ranged from $500,000.00 to $700,000.00. One can only imagine what a sand and gravel mining operation would do to the environment of our neighborhood, with all the dirt, dust, and overall contaminants released into the air on a daily basis, to say nothing about the property values. Along with the noise pollution, and truck traffic along Cone Camp Road, and Greenspot Road, the safety for pedestrians, bicyclists, and joggers, can only be severely compromised! Overall, not a good situation in my humble opinion.
I am wholeheartedly in favor of the creation of a habitat conservation area, the continuation of a flood management program, continuation/reservation of a trail system, and even some expansion of public roadways. However, on the expansion of the mining operations, I will remain firm in my utter opposition! I hope that the City of Highland will listen to the voice of it's citizens and do it's best to take heed to their wishes. I would like to ask the BLM for their foremost, and judicial evaluation of this situation, and thank them for their indulgence of my comments and feelings in this matter.

Respectfully,
Dr. David F. Adame
Dr. David F. Adame

Greg Hill
Santa Ana River Wash Project
Bureau of Land Management
Palm Springs-South Coast Field Office
P.O. Box 581260
North Palm Springs
CA92258
Fax: (760) 251-4899

Regarding :
Department of the Interior
Bureau of Land Management
[CA669-04-1610-DO-083A]
Notice of Intent to prepare an amendment to the South Coast Resource Management Plan for the Santa Ana River Area of Critical Environmental Concern

June 11, 2004

To whom this concerns:

The Santa Ana River Wash is a resource that need to be preserved to maintain the quality of living in North Redlands and the greater East Valley region, encompassing Redlands, Mentone, Highland, and Greenspot. Any change to the existing zoning for the Santa Ana River Area of Critical Environmental Concern must be done with regulation to insure the (1) aesthetic beauty, (2) health, and (3) protection of endangered species and (4) the continued economic growth of the region.

As a resident of Redlands whose wife and child both suffer from respiratory health issues, I cannot be more emphatic about the criticality of insuring no additional PM10 or PM2.5 is introduced to the local air as a result of any proposed ammendment to the Plan. Any expansion of the existing gravel/cement operations will result in serious impacts to our local air quality as well as the integrity of our surface streets.

Critical Habitat in the Santa Ana Watershed has already had to deal with multiple incursions from the MWD water pipeline project to the extensive pits created by the construction of Seven Oaks dam. Restoration of the watershed with an interpretive trail along the historic Railroad right of way linking Mentone to Highland may serve as a more appropriate use of the area and insure a higher quality of life for the residents of the East Valley.

Please be cognizant of these concerns when considering any amendment to the South Coast Resource Management Plan for the Santa Ana River Area of Critical Environmental Concern.

Sincerely
Jonathan Baty
Founder
www.bikecommuter.com

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
770 FAIRMONT AVENUE, SUITE 102
GLENDALE, CA 91203-1035

RECEIVED
BUREAU OF LAND MANAGEMENT
04 JUN 21 AM 11:32
PALM SPRINGS-SOUTH COAST
RESOURCE AREA

JUN 1 4 2004

Mr. Greg Hill
Santa Ana River Wash Project
Bureau of Land Management
Post Office Box 581260
North Palm Springs, California 92258

Dear Mr. Hill:

The California Department of Water Resources offers the following comments on the Notice of Preparation/Notice of Intent for the Upper Santa Ana Wash Land Management and Conservation Habitat Plan.

Potential Impacts to Existing State Water Project Facilities

The Department has constructed State Water Project facilities immediately southeast of the existing Greenspot Pump Station and is proposing new facilities in other parts of the project area of the Upper Santa Ana Wash Land Management and Conservation Habitat Plan. Southern California Edison has located electrical lines along the western edge of Greenspot Road that are critical to the operation of the State Water Project facilities. The SWP facilities and SCE utilities that may be affected by the proposed new bridge are: 1) Greenspot Pump Station and an 800-foot surge line along the east side of the existing Greenspot Bridge; 2) Southern California Edison 33 kV Santa Ana No.1 power line that crosses Greenspot Road; 3) fiber optics communication, directed eastward from the pump station; and 4) upgraded and expanded Morton Canyon Valve Facility, and new control building, and an extended 12 kV line from the west side of Greenspot Road.

The Department requests that the Environmental Impact Report/Environmental Impact Statement for the proposed project analyze and discuss potential impacts of the proposed project to the facilities described above. Additionally, the City of Highland is requested to: 1) Submit the design of the proposed bridge widening and realignment to the Department for review and comment; 2) assume all aspects of construction management, including waste removal; and 3) schedule and coordinate potential power outages to the pump station or to the Morton Canyon Valve Facility due to construction activities with Sebastian Perez, Chief of the Department of Water Resources, Division of Operations and Maintenance, Southern Field Division at (661) 944-8519.

Mr. Greg Hill
JUN 1 4 2004
Page 2

Potential Impacts to Proposed East Branch Extension Project, Phase II

The Department requests the Lead Agencies analyze cumulative effects of the proposed project to include other current and probable future projects, such as Phase II of the East Branch Extension Project. Last year, the Department discussed the Phase II project with the San Bernardino Water Conservation District on three occasions, each time sharing with the District the potential alignment routes under reconnaissance-level evaluation. The Department is currently evaluating several pipeline alignments to achieve this objective, but all alignments must cross the Santa Ana River Wash to maintain the economic feasibility of the Phase II project. At this time, the Department plans to complete construction of the East Branch Extension Project, Phase II within the next 5-10 years. Attached are maps of the currently proposed alignments, which are only rough approximations and therefore, the subject to extensive future refinement. Questions related to the Phase II project should be directed to Dave Samson, SWP Project Coordinator at (916) 653-5597.

The Department appreciates the opportunity to provide comments supportive of the preparation of the necessary environmental documents for the project. If you have any questions about these comments, please direct them to Mary Miller, Chief of the Recreation and Environmental Studies Section, Southern District at (818) 543-4698.

Sincerely,

Mark Stuart, Chief
Southern District

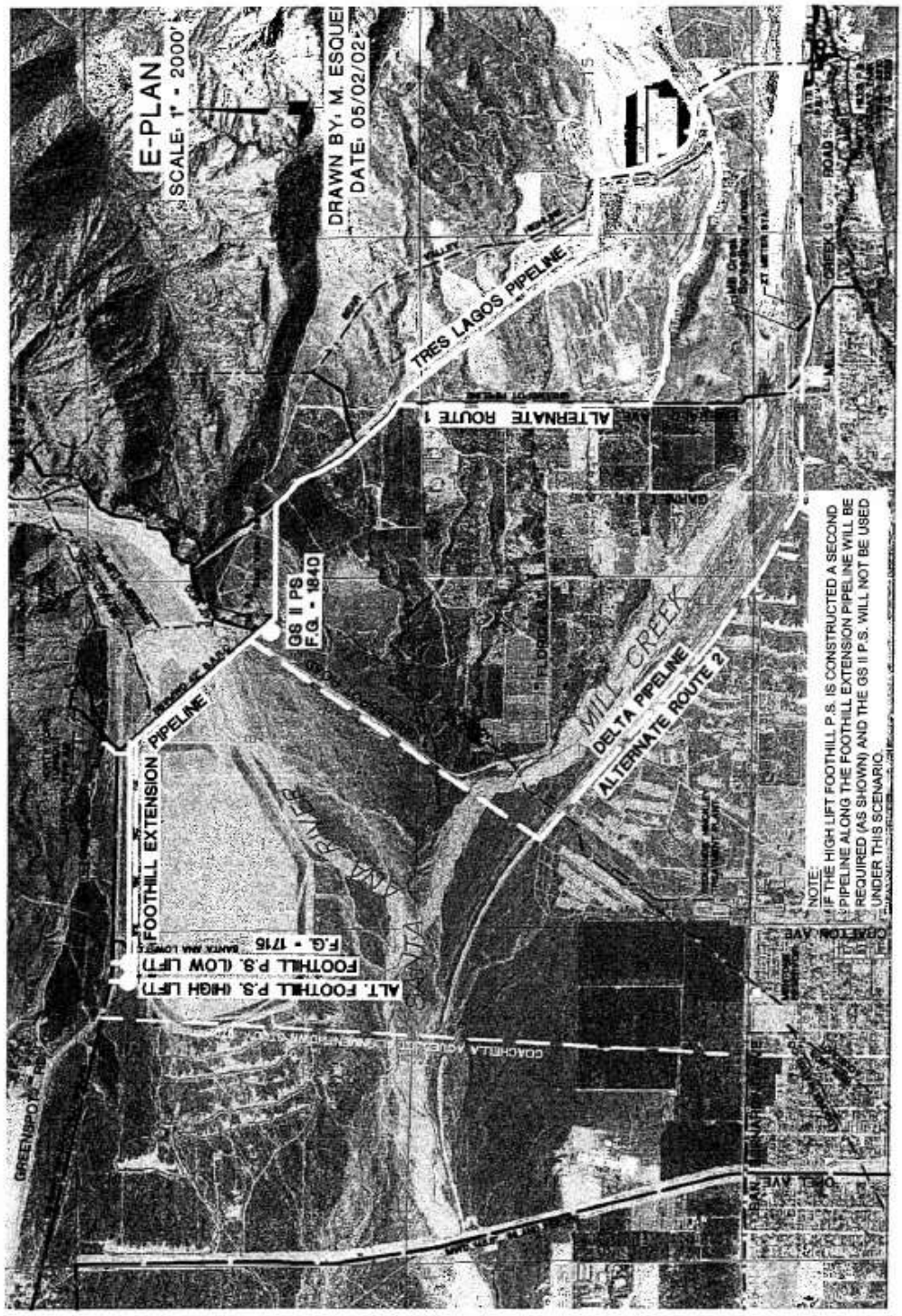
Attachments

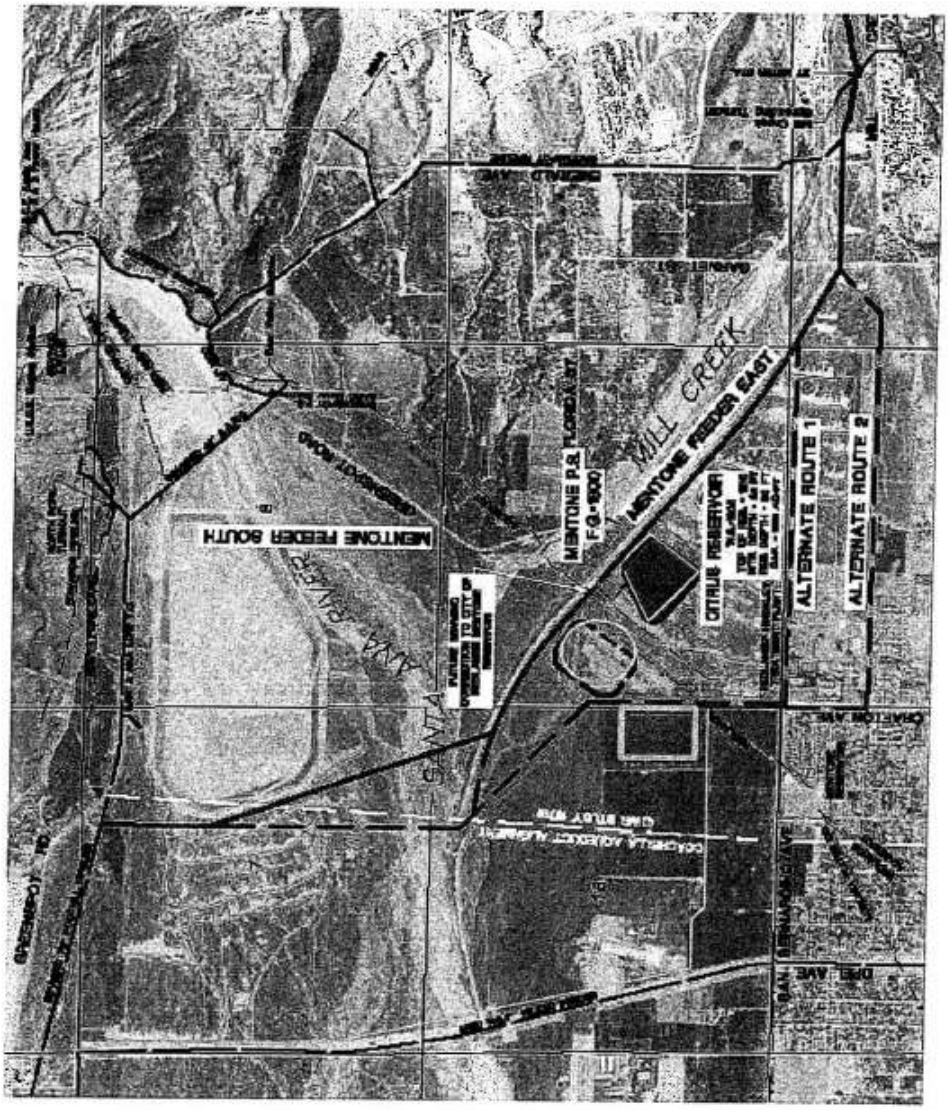
Same letter sent to: Mr. Walter Christensen
Santa Ana River Wash Project
San Bernardino Valley Water Conservation District
Post Office Box 1839
Redlands, California 92373

Mr. Greg Hill
JUN 14 2004
Page 3

cc: Mr. Robert Reiter, General Manager
San Bernardino Valley Municipal Water District
1350 South E Street
San Bernardino, California 92408-2725

Mr. Steve Stockton, General Manager
San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, California 92223


E-PLAN
SCALE: 1" = 2000'
DRAWN BY: M. ESQUE
DATE: 05/02/02
TRES LAGOS PIPELINE
ALTERNATE ROUTE 1
GS II PS
F.G. = 1840
MILL CREEK
DELTA PIPELINE
ALTERNATE ROUTE 2
FOOTHILL EXTENSION PIPELINE
ALT. FOOTHILL P.S. (HIGH LIFT)
FOOTHILL P.S. (LOW LIFT)
F.G. = 1715
SANTA ANA RIVER
COACHELLA
GREENSPOT
NOTE:
IF THE HIGH LIFT FOOTHILL P.S. IS CONSTRUCTED A SECOND PIPELINE ALONG THE FOOTHILL EXTENSION PIPELINE WILL BE REQUIRED (AS SHOWN) AND THE GS II P.S. WILL NOT BE USED UNDER THIS SCENARIO.


MILL CREEK
MENTONE FEEDER EAST
MENTONE FEEDER SOUTH
MENTONE P.S.
F.G.=800
CITRUS RESERVOIR
ALTERNATE ROUTE 1
ALTERNATE ROUTE 2
SANTA ANA RIVER
CONFLUENCE AVE
DEL AVE
SAN BERNARDINO AVE
GREENSPOT RD

APPENDIX E: CURRENT ACEC DESIGNATION UNDER SCRMP

Riverside-San Bernardino County Management Area

Resource Condition Objectives

1. Emphasize protection and enhancement of sensitive species habitats and open space values.

2. Improve management effectiveness within the management area through disposal of isolated parcels and consolidation of BLM public land ownership, including substantial acquisition within the management area.

3. Provide recreation opportunities which are compatible with sensitive species management objectives.

4. Allow mineral development and other uses while maximizing protection of sensitive resources.

5. Protect Native American values associated with the Pechanga Historical Site.

Land Use Allocations

1. Designate 1,030 acres as the Potrero Area of Critical Environmental Concern (ACEC) and Research Natural Area (RNA) for preservation of Stephens' kangaroo rat habitat.

   - Acquire 11,952 acres for addition to the ACEC.

   - The ACEC is unavailable for mineral material sales.

   - The ACEC is proposed for closure to mineral leasing and entry under the 1872 mining law (as amended).

   - Grazing could be permitted only if it is found to be compatible with habitat management, as determined in the activity plan.

   - The ACEC is a right-of-way avoidance area.

2. Designate three parcels (107-021, 107-101, 107-121) totalling 760 acres in the upper Santa Ana River wash as the Santa Ana River ACEC and RNA for protection of Santa Ana River woolly-star and slender-horned spineflower.

   - The ACEC is unavailable for mineral material sales, is closed to motorized vehicle use, and is unavailable for livestock grazing.

   - The ACEC is a right-of-way avoidance area.

APPENDIX F: BLM LAND EXCHANGE PROCEDURE

Form 1221-2
(June 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
2-294
Date
12/16/05

Subject

H - 2200-1 Land Exchange Handbook (public)

1. Explanation of Material Transmitted: This release transmits an updated Land Exchange Handbook. The Handbook provides specific guidance for the consideration of land exchanges to ensure that statutory and regulatory requirements are followed and that the public interest is protected. It provides further direction related to the objectives, authorities, responsibilities, and policy considerations outlined in Manual Section 2200, Exchange of Public Lands.

   As described in the BLM Directives Manual (1221.13), handbook and manual sections have equal force and effect, and instructions provided in this Handbook are mandatory unless otherwise indicated.

   Change: This release transmits pen and ink corrections to Release 1-1695 dated 08/29/05. The release number assigned is incorrect. Please change Rel. 1-1695 on (1) the manual transmittal sheet in upper right corner and under "insert" and (2) on all Handbook sheets in the footer section on lower right side to **Rel. 2-294**.

2. Reports Required: None.

3. Material Superseded: Handbook H-2200-1 Release Number 2-286, dated August 14, 1997 and Release Number 2-288, dated June 4, 1999.

4. Filing Instructions: File as directed below.

REMOVE:	INSERT:
All of Rel. 2-286 and 2-288	All of Rel. 2-294 (H - 2200-1)
(Total: 76 sheets)	(Total: 91 sheets)

Thomas Lonnie
Assistant Director
Minerals, Realty and Resource Protection

Form 1221-2
(June 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
1-1695

Date
08/29/05

Subject

H - 2200-1 Land Exchange Handbook (public)

1. Explanation of Material Transmitted: This release transmits an updated Land Exchange Handbook. The Handbook provides specific guidance for the consideration of land exchanges to ensure that statutory and regulatory requirements are followed and that the public interest is protected. It provides further direction related to the objectives, authorities, responsibilities, and policy considerations outlined in Manual Section 2200, Exchange of Public Lands.

   As described in the BLM Directives Manual (1221.13), handbook and manual sections have equal force and effect, and instructions provided in this Handbook are mandatory unless otherwise indicated.

2. Reports Required: None.

3. Material Superseded: Handbook H-2200-1 Release Number 2-286, dated August 14, 1997 and Release Number 2-288, dated June 4, 1999 (Chapter 7 and 8).

4. Filing Instructions: File as directed below.

REMOVE:	INSERT:
All of Rel. 2-286 and 2-288	All of Rel. 1-1695 (H-2200-1)
(Total: 76 sheets)	(Total: 91 sheets)

Thomas Lonnie
Assistant Director
Minerals, Realty and Resource
Protection

Bureau of Land Management

Land Exchange Handbook H-2200-1 (Public)

APPENDIX G: BIOLOGICAL TECHNICAL REPORT

BIOLOGICAL TECHNICAL REPORT FOR THE PROPOSED SANTA ANA RIVER WASH LAND USE PLAN AMENDMENT AND LAND EXCHANGE

Prepared for:

UNITED STATES BUREAU OF LAND MANAGEMENT
Palm Springs – South Coast Field Office
Palm Springs, CA 92262

April, 2009

URS

2020 East First Street, Suite 400
Santa Ana, CA 92705
714.835.6886 Fax: 714.433.7701

TABLE OF CONTENTS

SECTION 1 INTRODUCTION 1-1

SECTION 2 METHODS 2-1

SECTION 3 RESULTS 3-1

3.1 CURRENT LAND USE 3-1
3.2 BIOLOGICAL RESOURCES 3-3
3.3 VEGETATION COMMUNITIES 3-3
3.4 WILDLIFE 3-7
3.5 SPECIAL STATUS PLANT SPECIES 3-7
3.6 SPECIAL STATUS WILDLIFE 3-7
3.7 WILDLIFE CORRIDORS 3-8

SECTION 4 CONCLUSION 4-1

SECTION 5 REFERENCES 5-1

List of Appendices, Figures, and Tables

APPENDIX

APPENDIX A BOTANICAL SPECIES DETECTED WITHIN THE STUDY AREA
APPENDIX B. WILDLIFE SPECIES DETECTED WITHIN THE STUDY AREA
APPENDIX C. SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA
APPENDIX D. SPECIAL STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

FIGURE

FIGURE 1: PROJECT LOCATION 1-4
FIGURE 2: BIOLOGICAL RESOURCES 1-5
FIGURE 3: VEGETATION COMMUNITIES 3-6

TABLES

TABLE 1: DISTRICT OFFERED LANDS 1-2
TABLE 2: BLM SELECTED LANDS 1-2
TABLE 3: PARCEL 108-081 1-2
TABLE 4: SPECIAL DESIGNATIONS FOR EXISTING AND PROPOSED LAND OWNERSHIP 3-3
TABLE 5: VEGETATION COMMUNITIES AND LAND COVER TYPES 3-5

Section 1 Introduction

The Final Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Environmental Impact Report1 (Wash Plan) addressed land use activities throughout a roughly 4,467-acre portion of San Bernardino County, California (LSA, November 2008). As part of the implementation of Wash Plan, the Bureau of Land Management (BLM) and the San Bernardino Valley Water Conservation District (District) are executing a land exchange. The proposed land exchange will hereafter be referred to as the "Project".

- As described, the Project will secure establishment of a contiguous corridor from San Bernardino kangaroo rat (*Dipodomys merriami parvus*, "SBKR") designated critical habitat (DCH) along Plunge Creek southward through BLM Areas of Critical Environmental Concern (ACEC) and numerous Santa Ana River Woolly Star Preservation Area (WSPA) Units which connect with DCH along the Santa Ana River..

Consequently, the Offered Lands to be acquired by the BLM from the District will be identified as an addition to the South Coast Resource Management Plan (SCRMP) with a land use designation of Areas of Critical Environmental Concern (ACEC)[2].

- As an isolated action by the BLM, but within the aforementioned amendment to the SCRMP, a portion of undeveloped open space within Parcel 108-081 that has not been historically impacted by mineral extraction activities is also proposed to be designated as ACEC as well - therefore, it is being included in this analysis.

The BLM's isolated management decision to propose the designation of ACEC within a portion of Parcel 108-081 will complement the Project's indirect effect of securing the establishment of a contiguous corridor from DCH along Plunge Creek southward to connect with DCH along the Santa Ana River – supporting the long-term preservation of the ecological processes within the region. The Project, and BLM's isolated management action are therefore intended to ensure that needed wildlife linkages and functional connectivity are to be maintained within San Bernardino County to benefit a wide variety of plant and wildlife species, including those protected by state and federal Endangered Species Act (ESA) statutes.

This Biological Technical Report (BTR) is intended to disclose and evaluate the on-site habitat conditions and determine the potential for occurrence of biological resources[3], common and special status species[4] and their habitats within the Project's study area.

---

[1] State of California Clearinghouse No. 2004051023

[2] ACEC is a designation applied to BLM lands where special management attention is needed to protect, and prevent irreparable damage to important historic, cultural, and scenic, fish or wildlife resources - or other natural systems or processes. Secondary designations can also be attached to an ACEC depending on the type of resources contained in the area - secondary designations include Research Natural Area (RNA), Cultural Area, Hazard Area, and Outstanding Natural Area (ONA).

For the purposes of this BTR, the Project's "study area" has been defined as the following three (3) distinct locales; District "Offered Lands," BLM "Selected Lands," and "Parcel 108-081" (Figure 1). The Offered Lands and Selected Lands are located within the Redlands, California, U.S. Geological Survey (USGS) 7.5 minute quadrangle, and Parcel 108-081 is located within the Yucaipa quadrangle (USGS, 1980 and 1988 [Tables 1, 2 and 3]).

TABLE 1: District Offered Lands			
	Assessor's Parcel No.	Legal Description	Acres
Core Exchange *Parcels*	0291-151-01, 0291-151-02, 0291-151-05	NW 1/4 Section 12, TP 1S, R 3W NE 1/4 Section 12, TP 1S, R 3W Section 12, TP 1S, R 3W	320
Equalization Parcels	0290-271-03	SE 1/4 Section 9, TP 1S, R 3W	60

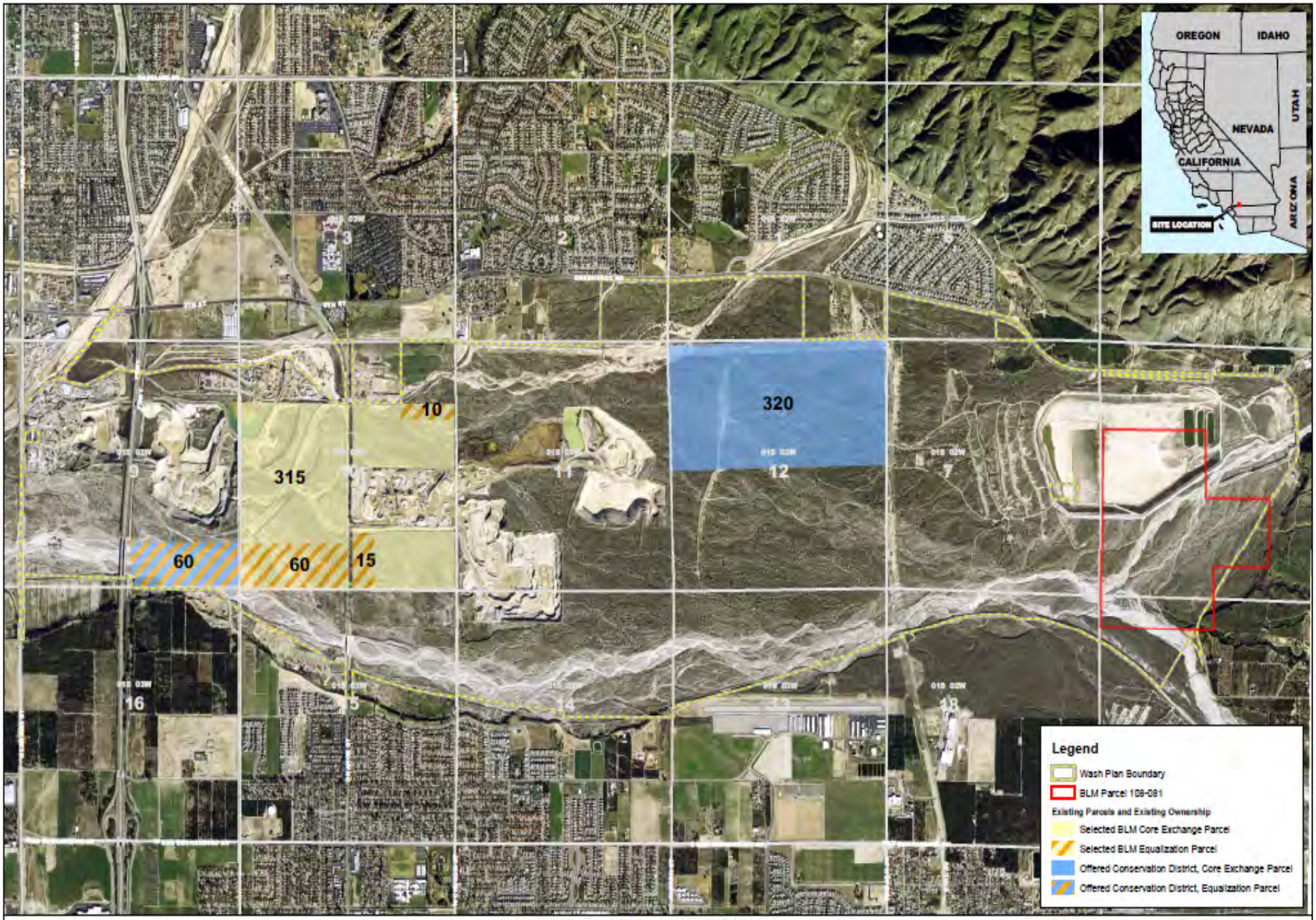
TABLE 2: BLM Selected Lands			
	Assessor's Parcel No.	Legal Description	Acres
Core Exchange Parcels	0291-111-03, 0291-121-01, 0291-112-03, 0291-122-02	S 1/2 NW 1/4 Section 10, TP 1S, R 3W SW 1/4 Section 10, TP 1S, R 3W S 1/2 NE 1/4 Section 10, TP 1S, R 3W NE 1/4 NE 1/4 Section 10, TP 1S R 3W	315
Equalization Parcels	0291-112-03, 0291-121-01, 0291-122-05, 0291-122-04, 0291-122-03	S 1/2 NE 1/4 Section 10, TP 1S, R 3W SW 1/4 Section 10, TP 1S, R 3W N 1/2 W 20 AC S 1/2 SE 1/4 Section 10, TP 1S, R 3W N 1/2 S 1/2 W 20 AC S 1/2 SE 1/4 Section 10, TP 1S, R 3W S 5 AC W 20 AC S 1/2 SE 1/4 Section 10, TP 1S, R 3W	85

TABLE 3: Parcel 108-081		
Assessor's Parcel No.	Legal Description	Acres

[3] For the purposes of this document, "biological resources" include the terrestrial and aquatic plants, wildlife, and habitats that occur, or have the potential to occur, within the Project's defined study area.

[4] For the purposes of this analysis, "special-status species" include any species that has been afforded special recognition by federal, state, or local resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS], BLM, California Department of Fish and Game [CDFG]) and/or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. Nonetheless, MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

0291-122-05	Section 8, TP 1S, R 2W Section 17, TP 1S, R 2W	299

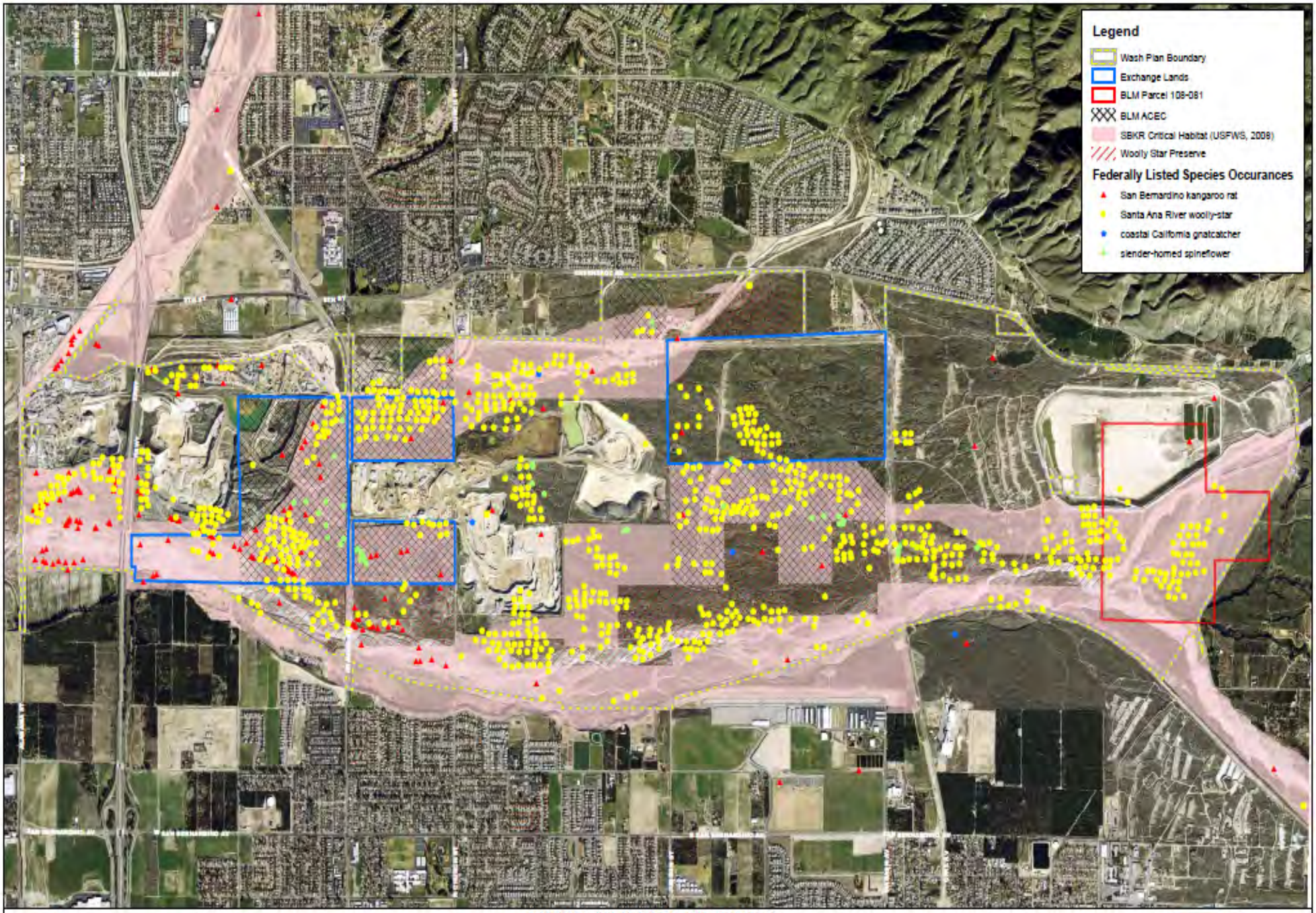


0 1,000 2,000 Feet

SBVWCD/BLM LAND EXCHANGE
PROJECT LOCATION

Figure 1

URS



0 1,000 2,000 Feet

SBVWCD/BLM LAND EXCHANGE
BIOLOGICAL RESOURCES

Figure 2

URS

Section 2 Methods

Available information was reviewed from the SCRMP and other technical documents containing information on biological resources in the study area to determine the locations and types of biological resources that could potentially exist in the study area. The environmental baseline for this analysis was derived in part from an intense literature review, field surveys, informal consultation with resource experts, and analysis of the vegetation communities, habitats, species, and current land use within the study area. The pertinent documents, scientific studies, technical publications, and resource specialists consulted include, but are not limited to, the following:

- Final Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Environmental Impact Report (EIR) (State of California Clearinghouse No. 2004051023) (LSA, 2008)
- Final Existing Biological Conditions Report for the Upper Santa Ana River Habitat Conservation Plan (Dudek, October 2008)
- BLM Santa Ana Wash Area of Critical Environmental Concern Research Natural Area Proposed Management Plan and Environmental Assessment (June 1996)
- Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino kangaroo rat as Endangered (USFWS, 1998)
- Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the San Bernardino kangaroo rat; Proposed Rule (USFWS, 2007)
- Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Bernardino kangaroo rat (Dipodomys merriami parvus); Final Rule (USFWS, 2008)
- Endangered Status Final Rule for Eriastrum densifolium ssp. sanctorum (Santa Ana River woolly - star) and Centrostegia leptoceras (Slender-horned spine flower) (USFWS, 1987)
- URS Corporation. 2000a. San Bernardino Merriam's kangaroo rat Trapping Survey in Section 12 and 13, (T1S, R3W) on Redlands USGS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.
- URS Corporation. 2000b. SBMKR Water Recharge Basin Survey Report, Section 7 T1S, R2W and Section 12, T1S, R3W. Santa Ana, CA: San Bernardino Valley Water Conservation District.
- URS Corporation. 2001. Biological Feasibility Report: Proposed Water Recharge Basin Sites. Santa Ana, CA: San Bernardino Valley Water Conservation District.

- URS Corporation. 2003a. Amendment Report: San Bernardino kangaroo rat Trapping Survey in the Northeast Quarter of Section 9, Township 1 South, 3 West on Redlands US GS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

- URS Corporation. 2003b. San Bernardino kangaroo rat Habitat Assessment and Trapping Survey in Section 10 and Portions of Section 15, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

- URS Corporation. 2003c. San Bernardino kangaroo rat Habitat Assessment and Trapping Survey in the East Half of Section 9, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

- URS Corporation. 2003d. San Bernardino kangaroo rat Trapping Survey in the Northeast Quarter of Section 9, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

- Ferguson, N. 2008 USFWS, Carlsbad Field Office, California. Personal communications with URS Corporation.

- Scott, R. 2008. District, Redlands, California. Personal communications with URS Corporation.

- Derus, M. 2008 Lilburn, San Bernardino, California. Personal communications with URS Corporation.

- LaPre, L. 2008. BLM, Moreno Valley, California. Personal communications with URS Corporation

This report also includes a synthesis of California Natural Diversity Database (CNDDB) (CDFG, 2008b) and California Native Plant Society (CNPS, 2008) records that are organized by USGS 7.5-minute topographic quadrangle maps. The Redlands and Yucaipa quadrangles were used. The species list was augmented and refined through discussions with plant and wildlife specialists with knowledge of the study area and focused field surveys (McKernan and Crook 1995, Sweetwater 1996, MEC 2000, URS 1999, URS 2000 and URS 2001). Dudek and LSA compiled the majority of the most recent biological survey information and prepared the baseline reports used for the preparation of this document. The aforementioned Dudek and LSA baseline reports are provided in the Wash Plan (LSA, 2008). Recent field surveys were also performed by URS within the study area to verify general and dominant vegetation types, community sizes, habitat types, and species present within communities.

During these recent surveys, community type definitions were based on observed dominant vegetation composition and density. Vegetation classifications of plant communities in the study area were derived from the criteria and definitions of Holland (1986) and Sawyer and Keeler-Wolf (1995). Plants of

uncertain identity were collected and subsequently identified from taxonomic keys (Hickman, 1993) and field guides (Lightner, 2006; Stuart & Sawyer, 2001). This method of floristic survey was conducted to ensure that special-status plant species were not inadvertently overlooked due to the plant community based assessment. Scientific and common species names were recorded according to *The Jepson Manual: Higher Plants of California* (Hickman, 1993).

The presence of a wildlife species was based on direct observation, wildlife sign (e.g., tracks, burrows, nests, scat), or vocalization. Field data compiled for wildlife included the species scientific name, common name, habitat, and evidence of sign when no direct observations were made. Wildlife of uncertain identity were documented and subsequently identified from specialized field guides and related literature (Borror & White, 1970; Burt & Grossenheider, 1980; CDFG, 2005; Elbroch, 2003; Evans & Hogue, 2006; Glassberg, 2001; Halfpenny, 2000; Sibley, 2000; Stebbins, 2003).

Furthermore, potential for occurrence of special status species were determined for the study area. The study area was assessed in the field for its potential to support both common and special status plant and animal species based on habitat suitability comparisons with reported occupied habitats. The following potential for occurrence definitions were utilized to assess Project-related effects:

Absent: Species distribution is restricted by substantive habitat requirements, which do not occur within the study area, and as a result no Project-related effects to species are expected.

Low: Species distribution is restricted by substantive habitat requirements, which are negligible within the study area, and as a result no Project-related effects to species are expected.

Moderate: Species distribution is restricted by substantive habitat requirements, which marginally or mostly occur within the study area, and an assessment of Project-related effects is warranted.

High: Species distribution is restricted by substantive habitat requirements, which occur within the study area, and an assessment of Project-related effects is warranted.

Present: Species or species sign (e.g., scat, tracks) were observed to be present, and an assessment of Project-related effects is warranted.

In summation, where there was no suitable habitat present for a particular special status species within the study area, or only negligible suitable habitat was present, the species was considered to be absent or to have a low probability of occurrence. Consequently, the absent and low categories correspond to alleviating the need to evaluate Project-related effects to species. Conversely, the moderate, high and present categories correspond to a recommendation to assess Project-related effects to species.

Section 3 Results

3.1 CURRENT LAND USE

Land uses within the study area include water conservation, aggregate mining, undeveloped open space, and habitat conservation. Land uses for each unique locale within the study area are described below in detail.

Selected Lands

Within BLM Selected Lands sensitive biological resources are protected through overlapping designations of ACEC by the BLM and DCH by the USFWS. However, in some locations, these lands have been adversely impacted by anthropogenic disturbance that results in a lack of functional wildlife, or hydrological connection between Plunge Creek and the Santa Ana River. Various roads, including Orange Street and unpaved haul routes traverse the Selected Lands providing for commercial trucking as well as local thoroughfare. Nonetheless, special management of these lands for biological resource avoidance, limited mineral sales, and restricted access are on-going.

Offered Lands

At present, one (1) District operated recharge basin exists within Offered Lands. Water conservation is accomplished by recharging the Bunker Hill Groundwater Basin through percolation. The percolation basin is approximately 15-acres within Section 12 (USGS, 1980, Figure 1). The District and its predecessors have been using water conservation facilities in the Upper Santa Ana River since the early 1900s. Existing open space that includes low quality chamise chaparral and non-native grassland habitats have also been identified for future water conservation activities within Offered Lands..

Within the District's Offered Lands, aggregate mining activities could be permitted under lease, but no mining has been authorized to date. Currently, only limited [5], water conservation, pipeline and utility operation and maintenance activities are allowed to occur within discrete areas of the Offered Lands. These Offered Lands also support well documented populations of federally protected plants and animals that currently lack adequate formal protection and conservation - even though they are adjacent to DCH and could be used to secure establishment of a historic connection between Plunge Creek and the Santa Ana River.

BLM Parcel 108-081

Parcel 108-081 is comprised of a Recharge Basin - which was initially the borrow pit utilized for material to construct the Seven Oaks Dam (Figure 1). The majority of the remaining open space that was not historically impacted by mineral extraction includes SBKR DCH and high quality Riversidean Alluvial fan Sage Scrub. The DCH within the parcel has the potential to support SBKR, Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*) and slender-horned spineflower (*Dodecahema leptoceras*). These open space areas and undisturbed habitats within Parcel 108-081 complement long-term preservation of the ecological processes within the region. Furthermore, BLM Parcel 108-081 is nestled

[5] Greater than ninety four percent (94%) of Selected Lands include undeveloped natural habitats.

within a broader mosaic of private and federal undeveloped open space (e.g., DCH, WSPA Units and existing ACEC's) - making its' preservation important to the cohesiveness and quality of the surrounding land for the stated ecological purposes.

USFWS Designated Critical Habitat

The USFWS DCH for the SBKR has been delineated within the study area's Selected and Offered Lands - and within Parcel 108-081 (Figure 2). This designation encompasses approximately 561 acres of the study area, as well as portions of land outside the study area which include the Santa Ana River, and Plunge Creek. This DCH was occupied at the time of listing, is currently occupied, and contains all of the features essential to the conservation of SBKR.

Santa Ana River Woolly Star Preservation Area

The Santa Ana River WSPA is a protected biological area comprised of three distinct parts that are located adjacent to Selected and Offered Lands, and BLM Parcel 108-081 (Figure 2). The protected area plays an important role in the Wash Plan and the value of the Offered Lands in Section 12. The WSPA is managed by the SBCFCD. The WSPA was established in 1988 by the United States Army Corps of Engineers to mitigate the effects of the Seven Oaks Dam on the federally endangered Santa Ana River woolly-star. This area of alluvial fan scrub near the low-flow channel of the river was identified for preservation because these sections of the Santa Ana River floodplain were thought to have the highest potential to maintain the hydrology necessary for the periodic regeneration of early phases of alluvial fan sage scrub that supports extensive populations of woolly-star.

Areas of Critical Environmental Concern

Selected Lands within the study area are currently designated as BLM ACEC. ACEC is a designation applied to BLM lands where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, scenic, fish, or wildlife resources, or other natural systems or processes. Lands proposed for ACEC designation (i.e., Offered Lands and a portion of Parcel 108-081) are nestled within a broader mosaic of private and federal undeveloped open space (e.g., DCH, WSPA Units, and existing ACEC parcels). For ecological purposes, lands proposed for ACEC designation are important to the cohesiveness and quality of the surrounding land. The ACEC designations will complement the project's indirect effect of securing the establishment of a contiguous corridor from DCH along Plunge Creek southward through numerous Santa Ana River Woolly Star Preserve Area (WSPA) Units, to connect with DCH along the Santa Ana River. These lands currently support two federally listed plant species, one federally listed mammal, provide DCH and allow for targeted water conservation activities (e.g., within low quality chamise chaparral and non-native grassland habitats).

Wash Plan Conservation Easements

The District proposes to establish conservation easements over portions of the Selected Lands as part of the land exchange and transfer of title. These easements will ensure that the exchanged lands acquired from the federal government will be managed for habitat conservation purposes consistent with the Wash Plan.

TABLE 4: Special Designations for Existing and Proposed Land Ownership

	EXISTING					
	BLM			District		
	Core Exchange (Selected)	Equalization Parcel (Selected)	Parcel 108-081	Core Exchange (Offered)	Equalization Parcel (Offered)	TOTAL
BLM ACEC	315[1]	85[2]	0	n/a	n/a	**400**
BLM Non-ACEC	0	0	280	n/a	n/a	**280**
DCH	218	85	193	12	60	**568**
Conservation Easement	0	0	0	0	0	**0**

	PROPOSED					
	BLM			District		
	Core Exchange (Offered)	Equalization Parcel (Offered)	Parcel 108-081	Core Exchange (Selected)	Equalization Parcel (Selected)	TOTAL
BLM ACEC	320	60	200	n/a	n/a	**580**
BLM Non-ACEC	n/a	n/a	80	n/a	n/a	**80**
DCH	12	60	193	218	85	**568**
Conservation Easement	0	0	0	56	85	**141**

3.2 BIOLOGICAL RESOURCES

URS biologists conducted pedestrian based surveys of the study area in October, 2008. Weather conditions during the surveys included sunny skies with temperatures ranging from 70-95 degrees Fahrenheit. The study area is within an alluvial plain - elevation range of approximately 1,200 feet above sea level to 1,500 feet above sea level. The study area also consists primarily of Soboba stony loamy sand. This soil forms on alluvial fans in granitic alluvium and typically contain stony loamy sand to a depth of approximately 60 inches (Dudek, October 2008; LSA, November 2008).

3.3 VEGETATION COMMUNITIES

The study area supports five (5) dominant vegetation communities / land cover types (Dudek, August 2008; Kirkpatrick & Hutchinson, 1977; LSA, November 2008; URS Corporation, 2001; URS Corporation, 2003a; URS Corporation, 2003b; URS Corporation, 2003c; URS Corporation, 2003d) - Riversidean alluvial fan sage scrub, chamise chaparral, Riversidean upland sage scrub, developed/ruderal, non-native grassland and recharge basins. The majority of the study area consists of Riversidean alluvial fan sage scrub. Vegetation communities identified within the study area are illuminated in Figure 3 and described below. Table 5 includes the total (acres) vegetation communities observed within the study area. Plant and wildlife species observed within the study area are listed in Appendices A and B, respectively.

Riversidean Alluvial Fan Sage Scrub

Riversidean Alluvial Fan Sage Scrub (RAFSS) vegetation communities occur on alluvial outwash fans along the base of the San Gabriel, San Bernardino, and San Jacinto mountains. Alluvial scrub communities are generally associated with infrequently scoured areas on floodplains and outwash fans in the Transverse and Peninsular ranges. Scalebroom (*Lepidospartum squamatum*) is considered to be an

indicator species of alluvial scrubs, and is usually described as a dominant or subdominant shrub in alluvial community descriptions, including the Scalebroom Series of Sawyer and Keeler-Wolf (1995) and the Lepidospartum-Eriodictyon-Yucca association described by Kirkpatrick and Hutchinson (1977).

RAFSS is frequently characterized by a mixture of drought-deciduous soft-leaved shrubs and larger chaparral species in alluvial soils (Kirkpatrick & Hutchinson, 1977). Species typically found in this community within the study area include white sage (*Salvia apiana*), spiny redberry buckthorn (*Rhamnus crocea*), California buckwheat (*Eriogonum fasciculatum*), chaparral yucca (*Yucca whipplei*), California croton (*Croton californicus*), valley cholla (Cylindropuntia sp.), tarragon (Artemisia dracunculus), yerba santa (*Eriodictyon* spp.), and mule fat (Baccharis salicifolia)

RAFSS occurs on alluvial benches throughout the study area, in various stages of succession. These four stages of succession (pioneer [P], intermediate [I], intermediate/mature [I/M], and mature [M]) generally represent the differences in species composition, growth forms (i.e., woodiness of plants) and percentage of cover. More mature areas tend to have woodier vegetation, a higher percentage of cover, and greater diversity than younger areas. Areas mapped as mature RAFSS or M-RAFSS are typically those areas least disturbed by human activity.

The vegetation consists of woody shrubs and fully developed subshrubs. Typical species include California juniper (*Juniperus californica*), chamise (*Adenostoma fasciculate)*, chaparral yucca, sugar bush (*Rhus ovata*), red berry buckthorn *(Rhamnus crocea)*, hollyleaf redberry (*Rhamnus ilicifolia*), and hoaryleaf ceanothus (*Ceanothus crassifolius*).

Areas mapped as intermediate RAFSS (I-RAFSS) typically lie between M-RAFSS and pioneer RAFSS (P-RAFSS). The vegetation is fairly dense and consists primarily of subshrubs. Typical species include California buckwheat (*Eriogonum fasciculatum*), coastal prickly pear (*Opuntia littoralis*), deerweed (*Lotus scoparius*), yerba santa (*Eriodictyon trichocalyx* var. *trichocalyx*), and chaparral yucca (*Yucca whipplei*). Areas mapped as I/M-RAFSS exhibit physical and vegetative characteristics found in both I-RAFSS and M-RAFSS. During various field studies conducted from 2000 to 2003, URS mapped pioneer, intermediate, and mature RAFSS within the study area (URS Corporation, 2001; URS Corporation, 2003a; URS Corporation, 2003b; URS Corporation, 2003c; URS Corporation, 2003d).

Chamise Chaparral

Chamise Chaparral within the study area includes 1 to 3 meters tall chaparral overwhelmingly dominated by chamise (*Adenostoma fasciculatum*). Mature stands are densely interwoven with very little herbaceous understory or litter (Holland, 1986). Chamise Chaparral occurs on shallow, dry soils or at somewhat lower elevations - often on xeric slopes and ridges, with adjacent, mesic sites mantled by Upper Sonoran Mixed Chaparrals. Chamise Chaparral occurs throughout much of the range of chaparral in California from approximately 9 to 1,830 meters in elevation above MSL. Areas of chamise chaparral within the study have been degraded due to invasive, non-native grasses, contributing to overall lower quality habitat.

Non-Native Grassland

Non-native Grassland (NNG) generally occurs on fine-textured loam or clay soils, which are moist or even waterlogged during the winter rainy season and very dry during the summer and fall. It is characterized by a dense to sparse cover of annual grasses, often with native and non-native annual forbs (Holland, 1986). This habitat within the study area is a disturbance-related community most often found in openings in native scrub habitats. This association has replaced native grassland and coastal sage scrub at many localities throughout Southern California. Typical grasses within the study area include wild oat (*Avena* sp.), soft chess (*Bromus mollis*), red brome (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), and foxtail fescue (*Vulpia megalura*). Characteristic forbs include red-stem filaree (*Erodium cicutarium*), mustard (*Brassica* sp.), tarweed (*Hemizonia* sp.), California goldfields (*Lasthenia chrysostoma),* and owl's clover (*Orthocarpus purpurascens*).

Developed/Ruderal

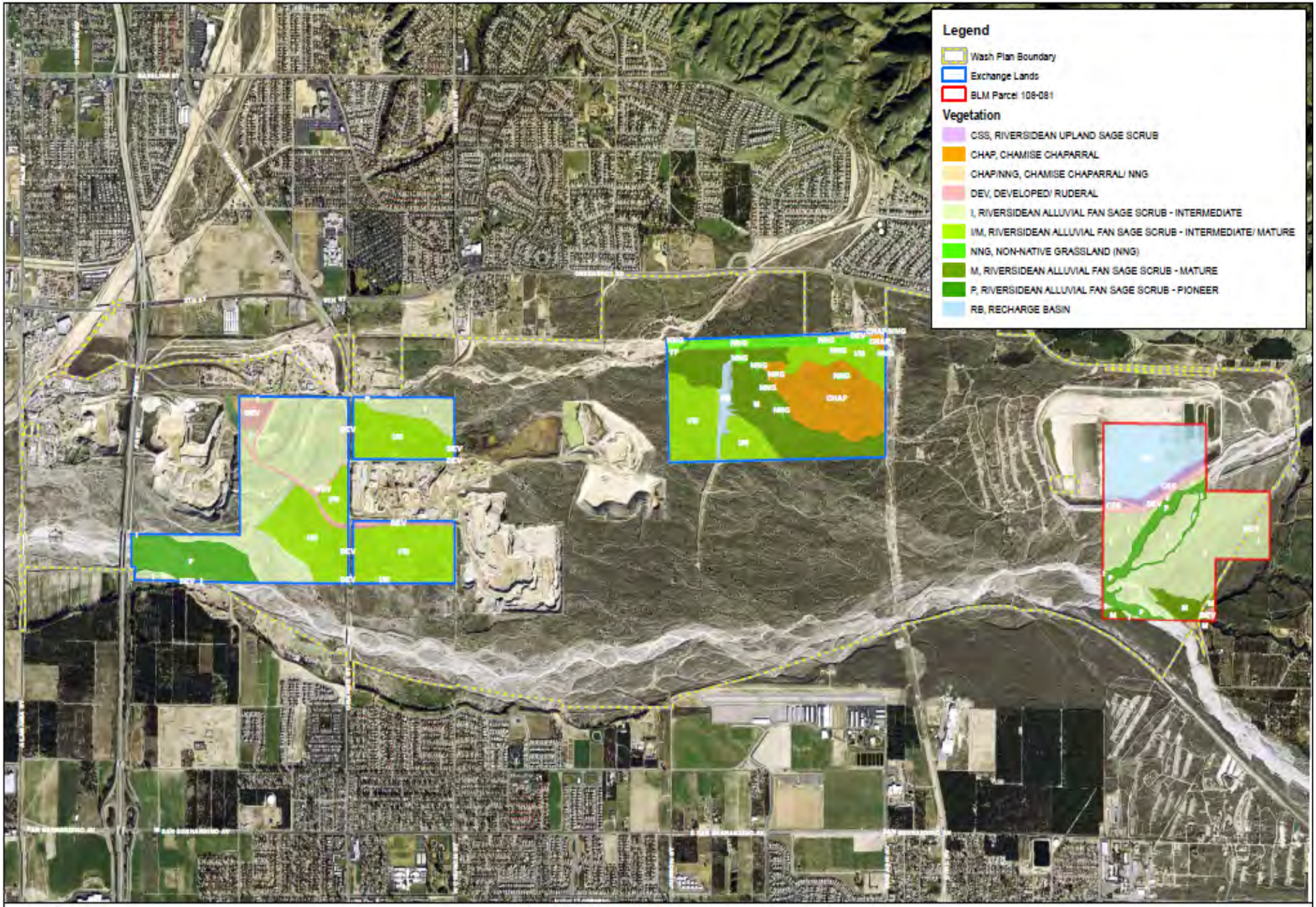
Developed areas include roads, built structures and associated mining and water conservation facilities within the study area. Areas generally considered developed include dirt and paved roads, settling ponds, transmission lines, underground gas pipelines, railroads, and any other permanent structures. Developed portions of the study area either lack vegetation entirely, are routinely disturbed by permitted activities, or are inundated with ornamental and/or ruderal vegetation. Ruderal vegetation is present under conditions of severe or repeated mechanical disturbance of the soil, herbicide treatment, or vehicle traffic. Ruderal vegetation in the study area consists primarily of non-native weedy species such as red brome (*Bromus madritensis* ssp. *rubens*), slender wild oat (*Avena barbata*), shortpod mustard (*Hirschfeldia incana*), and red-stem stork's bill (*Erodium cicutarium*)

Recharge Basin

Recharge Basins within the study area contain water intermittently during the year. The recharge basins allow water to pool and filter through the soil thus recharging the groundwater. When dry, the basins can be characterized as similar to the developed/ruderal land previously described.

TABLE 5: Vegetation Communities and Land Cover Types

Vegetation Community	Selected Lands Acreage	Offered Lands Acreage	BLM Parcel 108-081	Total Acreage
Chamise Chaparral	0	80	0	80
Riversidean Upland Sage Scrub	0	0	10	10
Developed	27	2	13	42
Non-native Grassland	0	29	0	29
RAFSS Pioneer	5	50	30	85
RAFSS Intermediate	167	11	154	332
RAFSS Intermediate / Mature	191	97	0	288
RAFSS Mature	0	100	16	116
Recharge Basin	0	0	76	76



0 1,000 2,000 Feet

SBVWCD/BLM LAND EXCHANGE
VEGETATION COMMUNITIES

Figure 3

URS

3.4 WILDLIFE

The Offered Lands support a diversity of wildlife species associated with chaparral, grassland, and alluvial fan sage scrub habitats. Common species detected during the field efforts include California ground squirrel (*Spermophilus beecheyi),* woodrat (*Neotoma sp.),* desert cottontail (*Sylivilagus audubonii*), California side-blotched lizard (*Uta stansiburinana elegans*), checkered white butterfly (*Pontia protodice*), and California horned lark (*Eremophila alpestris actia*). The Selected Lands and BLM Parcel 108-081 support many of the same species found within the Offered Lands. Common species detected during the field efforts include painted lady (*Vanessa cardui*), western fence lizard (*Sceloporus occidentalis*), California side-blotched lizard (*Uta stansiburinana elegans*), California quail (*Callipepla californica*), common raven (*Corvus corax*), western scrub jay (*Aphelocoma californica*), wrentit (*Chamaea fasciata*), California ground squirrel (*Spermophilus beecheyi*), mule deer *(Odocoileus hemionus)*, and raccoon (*Procyon lotor*). Additionally the Offered Lands support suitable habitat for those species associated with grassland and chaparral habitats not found on the Selected Lands and within the undisturbed portions of BLM Parcel 108-081.

3.5 SPECIAL STATUS PLANT SPECIES

It was determined that twenty five (25) special status plant species may occur within the study area. Appendix C summarizes the special status plant species and their potential to occur within the study area. Two state-listed and federally-listed plant species—Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*) and slender-horned spineflower (*Dodecahema leptoceras*) have been observed in the study area.

Twenty-one of the twenty-five special status plant species that may occur within the study area were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible. The remaining four plants, Parry's spineflower (*Chorizanthe parryi var. parryi*), Plummer's mariposa-lily (*Calochotus plummerae*), Santa Ana River woolly-star, and slenderhorned spineflower were determined to be present or have a moderate or high potential for occurrence due to the presence of suitable habitat within the Selected Lands, Offered Lands, and undisturbed habitats of Parcel 108-081.

3.6 SPECIAL STATUS WILDLIFE

It was determined that forty two (42) special status wildlife species may occur within the study area. Appendix D summarizes special status wildlife species and their potential to occur within the study area. Two federally-listed wildlife species—coastal California gnatcatcher (*Polioptila californica californica*) and SBKR have been observed within the study area.

Selected Lands

Twenty-one of the forty-two special status wildlife species that may occur within Selected Lands were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible within the study area. The remaining twenty-one wildlife species, including American badger, Bell's sage sparrow, coastal (San Diego) cactus wren, coastal California gnatcatcher, California horned lark, coast (San Diego) horned lizard, coastal

western whiptail, golden eagle, loggerhead shrike, Los Angeles pocket mouse, orange-throated whiptail, Northern red-diamond rattlesnake, Northwestern San Diego pocket mouse, SBKR, San Diego black-tailed jackrabbit, San Diego desert woodrat, short-eared owl, silvery legless lizard, western mastiff bat, western spadefoot, and white-tailed kite were determined to be present or have a moderate or high potential for occurrence due to the presence of suitable habitat within Selected Lands. Seven special status species were directly observed within the Selected Lands during the 2008 surveys: 1) California horned lark; 2) coastal California gnatcatcher; 3) coastal western whiptail; 4) Coastal San Diego cactus wren; 5) San Diego black-tailed jackrabbit; 6) SBKR; and 7) Northwestern San Diego pocket mouse.

Offered Lands

Nineteen of the forty-two special status wildlife species that may occur within Offered Lands were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible. The remaining wildlife species, including American badger, Bell's sage sparrow, coastal (San Diego) cactus wren, coastal California gnatcatcher, California horned lark, coast (San Diego) horned lizard, coastal western whiptail, golden eagle, loggerhead shrike, Los Angeles pocket mouse, orange-throated whiptail, Northern red-diamond rattlesnake, Northwestern San Diego pocket mouse, pallid bat, pocketed free-tailed bat, SBKR, San Diego black-tailed jackrabbit, San Diego desert woodrat, short-eared owl, silvery legless lizard, western mastiff bat, western spadefoot, and the white-tailed kite were determined to be present or have a "moderate" or "high" potential for occurrence due to the presence of suitable habitat within Offered Lands. Seven special status species were directly observed within the Offered Lands during the 2008 surveys: 1) SBKR; 2) Northwestern San Diego pocket mouse; 3) coastal California gnatcatcher; 4) coastal western whiptail; 5) American badger; 6) San Diego desert woodrat; and 7) shorteared owl.

Parcel 108-081

Twenty-one of the forty-two special status wildlife species that may occur within the open space areas and undisturbed habitats of Parcel 108-081 were determined to have an absent or low potential for occurrence because their distribution was restricted by substantive habitat requirements that are absent or negligible. The remaining twenty one wildlife species: American badger, Bell's sage sparrow, coastal (San Diego) cactus wren, coastal California gnatcatcher, California horned lark, coast (San Diego) horned lizard, coastal western whiptail, golden eagle, loggerhead shrike, Los Angeles pocket mouse, orange-throated whiptail, Northern red-diamond rattlesnake, Northwestern San Diego pocket mouse, SBKR, San Diego black-tailed jackrabbit, San Diego desert woodrat, short-eared owl, silvery legless lizard, western mastiff bat, western spadefoot, and white-tailed kite were determined to be present or have a moderate or high potential for occurrence due to the presence of suitable habitat within the undisturbed habitats of Parcel 108-081.

3.7 Wildlife Corridors

The San Bernardino County Land Use Plan Open Space Element Valley and Mountain Areas identifies two wildlife corridors associated with Plunge Creek and the Santa Ana River (Land Use Services Department August 2007). Both wildlife corridors occur within and adjacent to the Project. As such, the lands proposed for ACEC designation (i.e., Offered Lands and a portion of Parcel 108-081) complement both the San Bernardino County General Plan Open Space Element and the Proposed Action's indirect effect of securing the establishment of a contiguous corridor from DCH along Plunge Creek southward through WSPA Units and ACEC, to connect with DCH along the Santa Ana River.

Section 4 Conclusion

The services performed by URS and documented in this report have been conducted in a manner consistent with that level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied, and no warranty or guarantee is included or intended in this report.

Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data and actual conditions may vary from those encountered at the times and locations where the data were obtained - despite the use of due professional care. The services provided have been performed in accordance with a scope of work negotiated between the District and URS. Any reliance on this report by any other party shall be at such party's sole risk unless that party has written authorization from URS to use this work product. The purpose of this restriction is to attempt to protect the interests of parties for whom the work product may be appropriately directed.

Section5 References

BLM. June 1996. Santa Ana Wash Area of Critical Environmental Concern Research Natural Area Proposed Management Plan and Environmental Assessment. BLM.

Borror DJ, White RE. 1970. A Field Guide To Insects America North Of Mexico. New York, NY: Houghton Mifflin Company.

Burt WH, Grossenheider RP. 1980. A Field Guide To Mammals: North America; north of Mexico. New York, NY: Houghton Mifflin Company. 289 p.

California Invasive Plant Council. 2006. California invasive plant inventory, Cal-IPC Publication 2006-02. Berkeley, CA: Cal-IPC. p 39.

California Native Plant Society. 2008. CNPS Inventory of Rare and Endangered Plants for Redlands and Yucaipa USGS 7.5-Minute California Quadrangles. CNPS.

CDFG. 2008b. RareFind California Department of Fish and Game Natural Diversity Database (CNDDB) Version Commercial Version, 3.1.0. Sacramento, CA: California Department of Fish and Game, Biogeographic Data Branch.

Dudek. August 2008. Final Existing Biological Conditions Report for the Upper Santa Ana River Habitat Conservation Plan.

Elbroch M. 2003. Mammal Tracks & Sign, A Guide to North American Species. Mechanicsburg, PA: Stackpole Books. 779 p.

Evans AV, Hogue JN. 2006. Field guide to beetles of California. Berkeley and Los Angeles, CA: University of California Press.

Glassberg J. 2001. Butterflies Through Binoculars: The West: A Field Guide to the Butterflies of Western North America. New York, NY: Oxford University Press.

Halfpenny JC. 2000. Scats and Tracks of the Desert Southwest, A Field Guide to the Signs of 70 Wildlife Species. Helena, MT: Falcon Publishing, Inc. 144 p.

Hickman JC, editor. 1993. The Jepson Manual: Higher Plants of California. Berkeley: University of California Press.

Holland RF. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. In: California Department of Fish and Game The Resources Agency, editor. Sacramento, CA. p 156.

Integrated Taxonomic Information System. 2008. Integrated Taxonomic Information System on-line database, http://www.itis.gov. Integrated Taxonomic Information System.

International Union for Conservation of Nature and Natural Resources (IUCN), Species Survival Commission. 2008. IUCN Red List. IUCN.

Kirkpatrick JB, Hutchinson CF. 1977. The community composition of Californian coastal sage scrub. Plant Ecology 35(1):21 - 33.

August 2007. San Bernardino County Land Use Plan, GENERAL PLAN, Open Space Element,Valley and Mountain Areas. San Bernardino, CA: San Bernardino County.

LSA. November 2008. Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Environmental Impact Report (EIR) (State of California Clearinghouse No. 2004051023)

Sawyer, Keeler-Wolf. 1995. A Manual of California Vegetation. Sacramento, CA: California Native Plant Society. 471 p.

Sibley DA. 2000. National Audubon Society The Sibley Guide To Birds. New York, NY: Alfred A. Knopf, Inc. 544 p.

State of California. 1984. California Endangered Species Act (CESA). Fish and Game Code 2050 - 2098. USA.

Stebbins RC. 2003. A Field Guide To Western Reptiles and Amphibians. New York, NY: Houghton Mifflin. 533 p.

Stuart JD, Sawyer JO. 2001. Trees and shrubs of California. Berkeley and Los Angeles, CA: University of California Press.

URS Corporation. 2000a. San Bernardino Merriam's Kangaroo Rat Trapping Survey in Section 12 and 13, (T1S, R3W) on Redlands USGS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2000b. SBMKR Water Recharge Basin Survey Report, Section 7 T1S, R2W and Section 12, T1S, R3W. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2001. Biological Feasibility Report: Proposed Water Recharge Basin Sites. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003a. Amendment Report: San Bernardino Kangaroo Rat Trapping Survey in the Northeast Quarter of Section 9, Township 1 South, 3 West on Redlands US GS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003b. San Bernardino Kangaroo Rat Habitat Assessment and Trapping Survey in Section 10 and Portions of Section 15, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003c. San Bernardino Kangaroo Rat Habitat Assessment and Trapping Survey in the East Half of Section 9, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map. Santa Ana, CA: San Bernardino Valley Water Conservation District.

URS Corporation. 2003d. San Bernardino Kangaroo Rat Trapping Survey in the Northeast Quarter of Section 9, Township 1 South, 3 West on Redlands USGS 7.5 Minute Topographic Quadrangle Map.

USFWS. 1987. Endangered Status Final Rule for Eriastrum densifolium ssp. sanctorum (Santa Ana River woollystar) and Centrostegia leptoceras (Slender-horned Spine flower). Federal Register 52(187):36265-36270.

USFWS. 1998. Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino Kangaroo Rat as Endangered (63 FR 51005). In: U.S. Department of Interior, editor: USFWS. p 13.

USFWS. 2007. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the San Bernardino Kangaroo Rat; Proposed Rule (50 CFR Part 17). In: U.S. Department of the Interior, editor. Federal Register: USFWS. p 36.

USFWS. 2008. Carlsbad Fish & Wildlife Office Endangered and Threatened Species List. In: U.S. Department of the Interior, editor. Carlsbad, CA: USFWS.

USGS. 1980. 7.5-Minute Quadrangle Map Redlands, California: USGS.

USGS. 1988. 7.5-Minute Quadrangle Map Yucaipa, California: USGS.

Appendix A. Botanical Species Detected within the Study Area

Scientific Name	Common Name
FERNS AND FERN ALLIES	
PTERIDACEAE	BRAKE FAMILY
Pellaea mucronata	bird's-foot fern
SELAGINELLACEAE	SPIKE-MOSS FAMILY
Selaginella sp.	spike-moss
GYMNOSPERMS	
CUPRESSACEAE	CYPRESS FAMILY
Juniperus californica	California juniper
ANGIOSPERMS (DICOTYLEDONS)	
AMARANTHACEAE	AMARANTH FAMILY
Amaranthus albus	tumbling pigweed
ANACARDIACEAE	SUMAC OR CASHEW FAMILY
*Schinus molle**	Peruvian pepper tree
Rhus ovata	sugar bush
ASTERACEAE	SUNFLOWER FAMILY
Ambrosia acanthicarpa	annual bur-sage
Ambrosia confertiflora	weak-leaved burweed
Artemisia californica	California sagebrush
Artemisia dracunculus	tarragon
Baccharis salicifolia	mule fat
Bebbia juncea	sweetbush
Brickellia californica	California brickellbush
*Centaurea melitensis**	tocalote
*Cnicus benedictus**	blessed thistle
Encelia farinosa	brittlebush
Ericameria sp	goldenbush
Gutierrezia sp.	matchwee
Helianthus annuus	common sunflower
Heterotheca grandiflora	telegraph weed
Heterotheca sessiliflora	hairy golden-aster
Lepidospartum squamatum	scale-broom
Lessingia glandulifera	valley vinegar weed
Senecio flaccidus	shrubby butterweed
*Sonchus oleraceus**	common sow thistle
Stephanomeria sp.	Wreathplant
BORAGINACEAE	BORAGE FAMILY
Amsinckia sp.	Fiddleneck
Plagiobothrys sp.	popcorn flower
BRASSICACEAE	MUSTARD FAMILY
*Brassica nigra**	black mustard
Lepidium sp.	Peppergrass
CACTACEAE	CACTUS FAMILY
Cylindropuntia echinocarpa	golden cholla
Cylindropuntia ramosissima	pencil cholla
Cylindropuntia sp.	Cholla
Opuntia sp.	prickly pear
Opuntia littoralis	coastal prickly pear
CHENOPODIACEAE	GOOSEFOOT FAMILY
*Salsola traqus**	Russian thistle
CRASSULACEAE	STONECROP FAMILY
Dudleya sp.	dudleya

Appendix A. Botanical Species Detected within the Study Area

Scientific Name	Common Name
Cucurbita foetidissima	calabazilla
CUCURBITACEAE	GOURD FAMILY
Marah macrocarpus	wild cucumber
CUSCUTACEAE	DODDER FAMILY
Cuscuta sp.	Dodder
EUPHORBIACEAE	SPURGE FAMILY
Croton californicus	California croton
Eremocarpus setigerus	dove weed
FABACEAE	LEGUME FAMILY
Lotus scoparius	Deerweed
Lupinus sp.	Lupine
Melilotus sp.*	sweetclover
GERANIACEAE	GERANIUM FAMILY
*Erodium cicutarium**	red-stemmed filaree
HYDROPHYLLACEAE	WATERLEAF FAMILY
Eriodictyon sp.	yerba santa
Phacelia sp.	Phacelia
LAMIACEAE	MINT FAMILY
Salvia apiana	white sage
Salvia columbariae	Chia
Salvia mellifera	black sage
MYRTACEAE	MYRTLE FAMILY
*Eucalyptus sp.**	gum tree
POLEMONIACEAE	PHLOX FAMILY
Eriastrum densifolium ssp. sanctorum#	Santa Ana River woolly-star
Eriastrum sp.	eriastrum
PLATANACEAE	SYCAMORE FAMILY
Platanus racemosa	western sycamore
POLYGONACEAE	BUCKWHEAT FAMILY
Eriogonum fasciculatum	California buckwheat
Eriogonum gracile	slender woolly buckwheat
Rumex sp.	dock
RHAMNACEAE	BUCKTHORN FAMILY
Ceanothus crassifolius	hoary leaf ceanothus
Ceanothus cuneatus	buck brush
Ceanothus leucodermis	chaparral whitethorn
Rhamnus crocea	spiny redberry
Rhamnus ilicifolia	holly-leaf redberry
ROSACEAE	ROSE FAMILY
Adenostoma fasciculatum	chamise
SALICACEAE	WILLOW FAMILY
Populus fremontii	Fremont cottonwood
SALICACEAE	WILLOW FAMILY
Salix exigua	narrow-leaved willow
SOLANACEAE	NIGHTSHADE FAMILY
Datura wrightii	jimson weed
*Nicotiana glauca**	tree tobacco
TAMARICACEAE	TAMARISK FAMILY
Tamarix sp.*	tamarisk
VISCACEAE	MISTLETOE FAMILY
Phoradendron densum	dense mistletoe

Appendix A. Botanical Species Detected within the Study Area

Scientific Name	Common Name
ANGIOSPERMS (MONOCOTYLEDONS)	
LILIACEAE	LILY FAMILY
Calochortus sp.	mariposa lily
Dichelostemma capitatum	blue dicks
Yucca whipplei	chaparral yucca
Yucca schidigera	Mojave yucca
POACEAE	GRASS FAMILY
*Avena barbata**	slender wild oat
*Avena fatua**	wild oat
*Bromus diandrus**	ripgut grass
*Bromus hordeaceus**	soft chess
*Bromus madritensis**	foxtail chess
*Bromus tectorum**	cheat grass
Melica imperfecta	coast range melic
*Polypogon monspeliensis**	annual beard grass
*Schismus barbatus**	Mediterranean schismus
Vulpia sp.	fescue
TYPHACEAE	CATTAIL FAMILY
Typha sp.	Cattail

*Non-native species (California Invasive Plant Council 2006)

Appendix B. Wildlife Species Detected within the Study Area

Scientific Name	Common Name
CLASS INSECTA	**INSECTS**
APIDAE	**APID BEES**
Apis mellifera	honey bee
LIBELLULIDAE	**COMMON SKIMMERS**
Libellula saturata	flame skimmer
MUTILLIDAE	**VELVET ANTS**
Dasymutilla sp.	Velvet ant
NYMPHALIDAE	**Brush footed Butterflies**
Vanessa cardui	painted lady
PIERIDAE	**WHITE & SULFER BUTTERFLIES**
Pontia protodice	checkered white butterfly
POMPILIDAE	**spider wasps**
Pepsis sp.	tarantula hawk
TENEBRIONIDAE	**Darkling beetles**
Eleodes sp.	darkling ground beetle
CLASS REPTILIA	**REPTILES**
IGUANIDAE	**IGUANID LIZARDS**
Sceloporus occidentalis	western fence lizard
Uts Stansburiana	common side-blotched lizard
TEIIDAE	**WHIPTAILS**
Aspidoscelis tigris stejnegeri	western whiptail
VIPERIDAE	**VIPERS**
Crotalus oreganus helleri	southern pacific rattlesnake
CLASS AVES	**BIRDS**
ACCIPITRIDAE	**ACCIPITER HAWKS**
Accipiter cooperii	Cooper's hawk
ALAUDIDAE	**LARKS**
Eremophila alpestris actia	California horned lark
ANATIDAE	**SWANS, GEESE AND DUCKS**
Anas platyrhynchos	mallard
CERTHIIDAE	**CREEPERS**
Polioptila californica californica	Coastal California gnatcatcher
CORVIDAE	**JAYS & CROWS**
Corvus corax	common raven
Corvus brachyrhynchos	American crow
EMBERIZIDAE	**NEW WORLD SPARROWS**
Zonotrichia leucophrys	white-crowned sparrow
Pipilo maculates	spotted towhee
Pipilo crissalis	California towhee
EMPIDONAX	**FLYCATCHERS**
Sayonoris nigricans	black phoebe
Sayornis saya	Say's phoebe
FRINGILLIDAE	**FINCHES**
Carpodacus mexicanus	house finch
PARULIDAE	**WOOD-WARBLERS**
Dendroica coronata	yellow-rumped warbler
PICIDAE	**WOODPECKERS**
Colaptes auratus	northern flicker
TROGLODYTIDAE	**WREN**

Appendix B. Wildlife Species Detected within the Study Area

Scientific Name	Common Name
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren (San Diego)
TYRANNIDAE	**FLYCATCHERS**
Tyrannus vociferans	western Kingbird
PODICIPEDIDAE	**GREBES**
Podiceps auritus	horned grebe
Haemantopus mexicanus	black necked stilts
SCOLOPACIDAE	**SANDPIPERS**
Gallinago gallinago	Common snipe
STRIGIDAE	**OWLS**
Asio flammeus	short-eared owl
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's hummingbird
TROGLODYTIDAE	**WRENS**
Salpinctes obsoletus	rock wren
Thryomanus bewickii	Bewick's wren
Troglodytes aedon	house wren
TYRANNIDAE	**FLYCATCHERS**
Tryyannus voicferans	Cassin's kingbird
CLASS MAMMALIA	**MAMMALS**
CANIDAE	**DOGS AND OTHER CANIDS**
Canis familiaris	domestic dog
Canis latrans	coyote
CRICETIDAE	**MICE, RATS AND RELATIVES**
Neotoma sp.	woodrat sp. (sign)
FELIDAE	**CATS**
Felis rufus	bobcat (sign)
LEPORIDAE	**RABBITS AND HARES**
Sylvilagus auduboni	desert cottontail
Lepus californicus bennettii	San Diego black-tailed jack rabbit
MUSTELIDAE	**WEASELS**
Taxidea taxus	American badger
SCIURIDAE	**SQUIRRELS**
Spermophilus beecheyi	California ground squirrel

Appendix C. Special Status Plant Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Selected Lands	Offered Lands	BLM Parcel 108-081
Arenaria paludicola Marsh sandwort	Stoloniferous herb. Occurs in freshwater or brackish marshes or swamps. From 3 to 170 m in elevation.	May - Aug	FE SE CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Berberis nevinii Nevin's barberry	Evergreen shrub. Occurs in chaparral, cismontane woodland, coastal and riparian scrub. From 274 to 825 m in elevation.	Mar - Jun	FE SE CNPS: List 1B.1	LOW	LOW	LOW
Calochortus plummerae Plummer's mariposa-lily	Bulbiferous herb. Occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forests, and valley and foothill grasslands. From 100 to 1,700 m in elevation.	May - Jul	Fed: None State: None CNPS: List 1B.2	MODERATE	MODERATE	MODERATE
Caulanthus simulans Payson's jewel-flower	Annual herb. Occurs in chaparral and coastal scrub. From 90 to 2,200 m in elevation.	Mar – May	Fed: None State: None CNPS: List 4.2	ABSENT	ABSENT	ABSENT
Carex comosa Bristly sedge	Bogs and fens, freshwater marshes and swamps, and lake margins below 425 m. Known from Lake, San Bernardino, Santa Cruz, San Francisco, Shasta, San Joaquin, and Sonoma Counties, and Idaho, Oregon, and Washington. The last known occurrence of this species in San Bernardino County was in 1882 and is believed extirpated.	May- Sep	Fed: None State: None CNPS: List 2.1	ABSENT	ABSENT	ABSENT
Centromadia parryi ssp. *levis* Smooth tarplant	Annual herb. Grows within valley and foothill grassland, chenopod scrub, meadows, playas, and riparian woodland. Microhabitats include alkali meadow, alkali scrub and also in disturbed places. From 0-480 m in elevation.	Apr – Sep	Fed: None State: None CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Dudleya multicaulis Many-stemmed dudleya	Perennial herb. Occurs in coastal scrub, chaparral, and valley and foothill grassland, usually on clay soils or grassy slopes. Up to 2,590 feet in elevation.	Apr - Jul	Fed: None State: None CNPS: List 1B.2	LOW	LOW	LOW
Chorizanthe parryi var. parryi Parry's spineflower	Annual herb. Occurs within coastal scrub and chaparral on dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland. Found on dry sandy soils. From 40-1705 m in elevation.	Apr – Jun	Fed: None State: None CNPS: List 3.2	MODERATE	MODERATE	MODERATE
Cordylanthus maritimus ssp. *maritimus* Salt marsh bird's-beak	Hemiparasitic annual herb. Occurs in coastal dunes and marshes and swamps. Up to 30 m in elevation.	May – Oct	FE SE CNPS: List 1B.2	ABSENT	ABSENT	ABSENT
Dodecahema leptoceras slender-horned spineflower	Annual herb. Occurs within chaparral and coastal scrub (alluvial fan sage scrub). Found on flood-deposited terraces and washes; associates include Encelia, Dalea, Lepidospartum, etc. From 200-760 m in elevation.	Apr – Jun	FE SE CNPS: List 1B.1	PRESENT	PRESENT	HIGH
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woolly-star	Perennial herb. Occurs in chaparral and sandy or gravelly coastal scrub. From 299 to 2,001 feet in elevation.	May- Sep	FE SE CNPS: List 1B.1	PRESENT	PRESENT	HIGH
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	Rhizomatous herb. Occurs in coastal salt and freshwater marshes and swamps. From 33 to 5,495 feet in elevation.	Aug- Oct	Fed: None CA: N/A CNPS: List 1A	ABSENT	ABSENT	ABSENT
Horkelia cuneata ssp. *puberula* Mesa horkilia	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 70 to 825 meters elevation. Known from San Luis Obispo, Santa Barbara, Los Angeles, and Orange Counties. Believed extirpated from Ventura, San Bernardino, Riverside, and San Diego Counties.	Feb- Jul (Sep) (uncommon)	Fed: None CA: N/A CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Imperata brevifolia	Rhizomatous herb. Occurs in chaparral, coastal scrub, Mojave desert	Sep – May	Fed: None	LOW	LOW	LOW

Appendix C. Special Status Plant Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Selected Lands	Offered Lands	BLM Parcel 108-081
California saltmat	scrub, meadows and seeps (often alkali), and riparian scrub. Up to 500 m in elevation.		State: None CNPS: List 2.1			
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	Annual herb. Occurs in chaparral and coastal scrub. From 1 to 885 m in elevation.	Jan – Jul	Fed: None State: None CNPS: List 1B.2	LOW	LOW	LOW
Lycium parishii Parish's desert-thorn	Deciduous shrub of coastal scrub and Sonoran desert scrub at 305 to 1,000 m elevation. In California, known from Imperial and San Diego Counties. Known only historically from San Bernardino County (benches and/or foothills north of San Bernardino)	Mar- Apr	Fed: None State: None CNPS: List 2.3	ABSENT	ABSENT	ABSENT
Malacothamnus parishii Parish's bush-mallow	Deciduous shrub. Occurs in chaparral and coastal scrub. From 305 to 455 m in elevation.	Jun – Jul	Fed: None State: None CNPS: List 1A	LOW	LOW	LOW
Monardella macrantha ssp. *Hallii* Hall's monardella	Rhizomatous herb. Occurs in broadleaved upland forests, chaparral, cismontane woodland, lower montane coniferous forests, and valley and foothill grasslands. From 730 to 2,195 m in elevation.	Jun – Aug	Fed: None State: None CNPS: List 1B.3	ABSENT	ABSENT	ABSENT
Monardella pringlei Pringle's monardella	Sandy hills in coastal sage scrub at 300 to 400 m elevation. Known only from two occurrences west of Colton. Last seen in 1941. Habitat lost to urbanization. Presumed extinct.	May- Jun	Fed: None State: None CNPS: List 1A	ABSENT	ABSENT	ABSENT
Phlox dolichantha Big Bear Valley phlox	Perennial herb. Occurs in pebble plain and upper montane coniferous forests. From 1,830 to 2,970 meters.	May- Jul	Fed: None State: None CNPS: List 1B.2	ABSENT	ABSENT	ABSENT
Ribes divaricatum var. *parishii* Parish's gooseberry	Deciduous shrub. Occurs in riparian woodland. From 54 to 300 m in elevation.	Feb – Apr	Fed: None State: None CNPS: List 1A	ABSENT	ABSENT	ABSENT
Rorippa gambelii Gambel's water cress	Freshwater or brackish marshes and swamps; 5 to 330 m elevation. Known from Los Angeles, Orange, San Diego, and San Luis Obispo Counties and Baja California	Apr- Oct	FE State: SE CNPS: List 1B.1	ABSENT	ABSENT	ABSENT
Sidalcea hickmanii ssp. *Parishii* Parish's checkerbloom	Perennial herb. Occurs in chaparral, cismontane woodland, and lower montane coniferous forests. From 100 to 2,499 m in elevation.	Jun – Aug	Fed: None State: None CNPS: List 1B.2	LOW	LOW	LOW
Sidalcea neomexicana Salt spring checkbloom	Alkaline springs and marshes below 1,530 meters elevation. In California, known only from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and Ventura Counties	Mar- Jun	Fed: None State: None CNPS: List 2.2	ABSENT	ABSENT	ABSENT
Sphenopholis obtusata Prairie wedge grass	Cismontane woodland, meadows and seeps/mesic, in elevations ranging from 300 to 2,000 m, in Amador, Fresno, Inyo, Mono, Riverside, San Bernardino, and Tulare Counties	Apr- Jul	Fed: None State: None CNPS: List 2.2	ABSENT	ABSENT	ABSENT

Federal designations: (Federal Endangered Species Act, USFWS):

END: Federal-listed, endangered.

THR: Federal-listed, threatened.

California Native Plant Society (CNPS) designations:

List 1A: Plants presumed extinct in California.

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 in their range.

Appendix C. Special Status Plant Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Selected Lands	Offered Lands	BLM Parcel 108-081
List 3: Plants about which we need more information; a review list.						
List 4: Plants of limited distribution; a watch list.						
State designations: (California Endangered Species Act, CDFG)						
END: State-listed, endangered.						
THR: State-listed, threatened.						
RARE: State-listed as rare						
Threat Codes:						
1: Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)						
2: Fairly endangered in California (20-80% occurrences threatened) 3: Not very endangered in California (<20% of occurrences threatened or no current threats known)						

Appendix D. Special Status Wildlife Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat Description	Status Designations	Selected Lands	Offered Lands	BLM Parcel 108-081
Cardiella busckana Busck's gallmoth	Habitat requirements unknown	–	ABSENT	ABSENT	ABSENT
Rhaphiomidas terminatus abdominalis Delhi sands flower loving fly	Restricted to Delhi series sands in western Riverside and San Bernardino Counties	FE CA: None	ABSENT	ABSENT	ABSENT
Fish					
Catostomus santaanae Santa Ana sucker	The Santa Ana sucker's historical range includes the Los Angeles, San Gabriel, and Santa Ana River drainage systems located in southern California. An introduced population also occurs in the Santa Clara River drainage system in southern California. Found in shallow, cool, running water.	FT SSC	ABSENT	ABSENT	ABSENT
Gila orcutti Arroyo chub	Perennial streams or intermittent streams with permanent pools; slow water sections of streams with mud or sand substrates; spawning occurs in pools. Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita River systems; introduced in Santa Ynez, Santa Maria, Cuyama, and Mojave River systems and smaller coastal streams.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	Found in the headwaters of the Santa Ana and San Gabriel River drainages. Speckled dace occupy many isolated western drainages and have diversified into numerous subspecies, with those in swift water taking on streamlined forms, while those in slower water are relatively chubby and small finned.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Amphibians					
Spea (=Scaphiopus) hammondii Western spadefoot	Grasslands and occasionally hardwood woodlands; requires vernal pools (persisting for at least three weeks) for breeding; burrows in loose soils during dry season. Occurs in the Central Valley and adjacent foothills, the non-desert areas of southern California, and in Baja California.	Fed: None SSC BLM: S	MODERATE	HIGH	MODERATE
Rana muscosa Sierra Madre yellow-legged frog	Endemic to California. Inhabits lakes, meadow streams, isolated pools, sunny riverbanks in the Sierra Nevada. Open stream and lake edges with a gentle slope up to a depth of 5-8 cm. seem to be preferred. From 370 to over 3,660 m in elevation. Rarely occurs where predatory fishes have been introduced.	FE SSC	ABSENT	ABSENT	ABSENT
REPTILES					
Anniella pulchra pulchra Silvery legless lizard	Most common in coastal dune, valley-foothill, chaparral, and coastal sage scrub. Associated with friable soils with some moisture content and some vegetative cover. Has a broad thermal tolerance.	Fed: None SSC	MODERATE	HIGH	MODERATE
Aspidoscelis hyperythra Orange-throated whiptail	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes & other sandy areas with patches of brush & rocks. Perennial plants necessary for its major food- termites.	Fed: None SSC	MODERATE	MODERATE	MODERATE
Aspidoscelis tigris stejnegeri Coastal western whiptail	Wide variety of habitats including coastal sage scrub, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California.	Fed: None CA: None	PRESENT	PRESENT	HIGH
Crotalus ruber ruber Northern red-diamond rattlesnake	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation.	Fed: None SSC	HIGH	HIGH	HIGH

Appendix D. Special Status Wildlife Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat Description	Status Designations	Selected Lands	Offered Lands	BLM Parcel 108-081
	Morongo Valley in San Bernardino and Riverside Counties to Baja California.				
Diadophis punctatus modestus San Bernardino ringneck snake	Occurs in open relatively rocky areas often in moist microhabitats near intermittent streams. Found along the southern California coast from the Santa Barbara area south along the coast to San Diego County, and inland into the San Bernardino mountains.	Fed: None CA: None	LOW	LOW	LOW
Lampropeltis zonata (parvirubra) California mountain kingsnake (San Bernardino population)	Occurs in bigcone spruce and chaparral at lower elevations, in black oak, incense cedar, Jeffrey pine and ponderosa pine at higher elevations. Well-lit canyons with rocky outcrops or rocky talus.	Fed: None SSC	LOW	LOW	LOW
Phrynosoma coronatum (blainvilli population) Coast (San Diego) horned lizard	Occurs in coastal sage scrub, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species.	Fed: None SSC BLM: S	HIGH	HIGH	HIGH
Thamnophis hammondii Two-striped garter snake	Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth. Occurs from Coastal California from the vicinity of Salinas to northwest Baja California. From sea-level to about 7,000 feet in elevation.	Fed: None SSC	LOW	LOW	LOW
BIRDS					
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	Resident in southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass & forb patches.		LOW	LOW	LOW
Amphispiza belli belli Bell's sage sparrow	(Nesting) Occupies chaparral and coastal sage scrub from west central California to northwestern Baja California. Prefers semi-open habitats with evenly spaced shrubs 1-2 m high.	Fed: None CA: None	HIGH	HIGH	HIGH
Aquila chrysaetos Golden eagle	(Nesting and Wintering) Generally open country of the Temperate Zone worldwide. Nesting primarily in rugged mountainous country. Uncommon resident in southern California.	Fed: None CA: None	MODERATE	MODERATE	MODERATE
Asio flammeus Short-eared owl	(Nesting) Occurs in flat, open lands including grasslands. The short-eared owl occurs on all continents except Antarctica and Australia; thus it has one of the largest distributions of any bird. Nests are concealed by low vegetation, usually situated in the shelter of a grass mound, under a grass tuft, or among herbaceous ground cover.	Fed: None CA: None	MODERATE	PRESENT	MODERATE
Athene cunicularia Burrowing owl	(Burrow sites and some wintering sites) Open annual grasslands or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Dependent upon burrowing mammals (especially California ground squirrel) for burrows.	Fed: None CA: None BLM: S	LOW	LOW	LOW
Campylorhynchus brunneicapillus sandiegensis Coastal (San Diego) cactus wren	(San Diego & Orange Counties only) The cactus wren is a non-migratory resident of the coastal sage scrub plant community. Occupies southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub.	Fed: None SSC	PRESENT	MODERATE	MODERATE
Coccyzus americanus occidentalis western yellow-billed cuckoo	(Nesting) Inhabits riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Fed: None SSC	ABSENT	ABSENT	ABSENT

Appendix D. Special Status Wildlife Species Potentially Occurring within the Study Area

Scientific Name Common Name	Habitat Description	Status Designations	Selected Lands	Offered Lands	BLM Parcel 106-061
Dendroica petechia brewsteri Yellow warbler	(Nesting) Prefers wetlands and mature riparian woodlands dominated by cottonwoods, alders, and willows. Feeds on caterpillars, cankerworms, moth larvae, bark beetles, borers, weevils, small moths, aphids, grasshoppers, and spiders, and occasionally feeds on a few species of berries.	Fed: None SSC	LOW	ABSENT	LOW
Elanus leucurus White-tailed kite	(Nesting) Typically nests in riparian trees such as oaks, willows, and cottonwoods at low elevations. Forages in open country. Found in South America and in southern areas and along the western coast of North America.	Fed: None SE	HIGH	MODERATE	HIGH
Empidonax traillii extimus southwestern willow flycatcher	(Nesting) Occurs in riparian woodlands along streams and rivers with mature, dense stands of willows (*Salix* spp.), cottonwoods (*Populus* spp.) or smaller spring fed or boggy areas with willows or alders (*Alnus* spp.) It breeds in relatively dense riparian habitats from near sea level to over 2,600 meters.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Eremophila alpestris actia California horned lark	Desert scrub, short grass plains, grasslands interrupted by bare ground, grassy hillsides, mesas and ridges, plowed agricultural land, sagebrush flats, alpine meadows and fell-fields, alkali flats.	Fed: None FP	PRESENT	HIGH	HIGH
Falco mexicanus Prairie falcon	(Nesting) Open country in much of North America. Nests in cliffs or rocky outcrops; forages in open and valleys and agricultural fields. Rare in southwestern California.	FE SE	LOW	ABSENT	ABSENT
Icteria virens Yellow-breasted chat	(Nesting) summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forage and nest w/in 10 ft of ground.	Fed: None SSC	ABSENT	ABSENT	ABSENT
Lanius ludovicianus Loggerhead shrike	(Nesting) Occurs in broken woodlands, savannah, pinyon-juniper, joshua tree and riparian woodlands, desert oasis scrub and washes. Prefers open country for hunting, with perches for scanning and fairly dense shrubs and brush for nesting.	Fed: None SSC USFWS: BCC	HIGH	HIGH	HIGH
Polioptila californica californica Coastal California gnatcatcher	Occurs in coastal sage scrub vegetation on mesas, and hillsides, and in washes and nests almost exclusively in California sagebrush.	FT SSC	PRESENT	PRESENT	HIGH
Vireo bellii pusillus Least Bell's vireo	(Nesting) Resides in low riparian areas close to water or dry river beds. Their nests are usually constructed in bushes or within the branches of willows, mule fat, and mesquite. They are usually found below an elevation of 2,000 feet.	FE SE USFWS: BBC	LOW	ABSENT	LOW
MAMMALS					
Antrozous pallidus Pallid bat	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in open dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures.	Fed: None SSC BLM: S	LOW	MODERATE	LOW
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	Inhabits coastal scrub, chaparral, grasslands, sagebrush, etc. Found in western San Diego County in sandy, herbaceous areas, usually in association with rocks or coarse gravel.	Fed: None SSC	PRESENT	PRESENT	HIGH
Dipodomys merriami parvus San Bernardino kangaroo rat	Typically is found in RAFSS and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. Soil texture is a primary factor in this subspecies occurrence. Sandy loam substrates allow for the necessary digging	FE SSC	PRESENT	PRESENT	HIGH

Appendix D. Special Status Wildlife Species Potentially Occurring within the Study Area

Scientific Name *Common Name*	Habitat Description	Status Designations	Selected Lands	Offered Lands	BLM Parcel 108-081
	of simple, shallow burrows.				
Dipodomys stephensi Stephens' kangaroo rat	Primarily inhabits annual & perennial grasslands, but also occurs in coastal scrub & sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass & filaree. Will burrow into firm soil.	FE ST	LOW	LOW	LOW
Eumops perotis californicus Western mastiff bat	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	Fed: None SSC BLM: S	MODERATE	MODERATE	MODERATE
Lasiurus xanthinus Western yellow bat	Occurs in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Fed: None CA: None	ABSENT	ABSENT	ABSENT
Lepus californicus bennettii San Diego black-tailed jackrabbit	Variety of habitats including herbaceous and desert scrub areas, early stages of relatively open habitats. Restricted to the cismontane areas of southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain ranges.	Fed: None SSC	PRESENT	HIGH	HIGH
Neotoma lepida intermedia San Diego desert woodrat	Desert woodrats are found in a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.	Fed: None SSC	HIGH	PRESENT	HIGH
Nyctinomops femorosaccus Pocketed free-tailed bat	Occurs in a variety of arid areas in southern California, pine-juniper woodlands, desert oasis, desert wash, desert riparian and rocky areas with high cliffs.	Fed: None SSC	LOW	MODERATE	LOW
Perognathus longimembris brevinasus Los Angeles pocket mouse	Lower elevation grasslands & coastal sage communities in the Los Angeles basin. Open ground with fine sandy soils. May not dig extensive burrows, hiding under weeds & dead leaves instead.	Fed: None SSC	MODERATE	MODERATE	MODERATE
Taxidea taxus American badger	Most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils. Need sufficient food, friable soils and open uncultivated ground. Prey on burrowing rodents.	Fed: None SSC	HIGH	PRESENT	HIGH

Status Codes
Federal
FE = Federally listed Endangered
FT = Federally listed Threatened
BLMS = BLM Sensitive
State
ST = State listed Threatened
SE = State listed Endangered
FP = Fully protected
SSC = CA State Species of Concern
– = Other

URS
3500 Porsche Way, Suite 300, Ontario, California 91764
www.urscorp.com