



FINAL ENVIRONMENTAL IMPACT REPORT
HEBER DUNES SVRA
GENERAL PLAN
DECEMBER 2011



FINAL

Heber Dunes SVRA General Plan Environmental Impact Report

Prepared for:

California State Parks
Off-Highway Motor Vehicle Recreation Division
Ocotillo Wells District
5172 Highway 78
Borrego Springs, CA 92004

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December 2011



NOTICE OF DETERMINATION

TO: State Clearinghouse
Office of Planning and Research
1400 Tenth Street, Room 222
P.O. Box 3044
Sacramento, California 95812-3044

FROM: Department of Parks and Recreation
OHMVR Division
1725 23rd Street, Suite 200
Sacramento, CA 95816-7100

SUBJECT: Filing of the Notice of Determination in compliance with Section 21108 of the Public Resources Code.

STATE CLEARINGHOUSE NUMBER: 20100011067

PROJECT TITLE: Heber Dunes State Vehicular Recreation Area (SVRA) General Plan

PROJECT LOCATION: Heber Dunes SVRA, Imperial County

CONTACT PERSON: Kirk Shea, Sector Superintendent **PHONE NO.:** (760) 767-1329
5172 Highway 78, #10
Borrego Springs, CA 92004

PROJECT DESCRIPTION: The General Plan outlines goals and guidelines that apply to the entire Heber Dunes SVRA. These goals and guidelines address existing issues and provide ongoing guidance for management activities. This plan describes a long term vision for Heber Dunes SVRA to provide a convenient place for visitors to enjoy an outdoor recreational setting through Off-Highway Vehicle (OHV) activity and other compatible recreational uses. In addition, the Off-Highway Motor Vehicle Recreation (OHMVR) Division approved multiple improvements to provide park facilities related to administration, maintenance operations, and recreation opportunities in the near term (within 2 years). Facility improvements include picnic areas, OHV tracks, park infrastructure such as an entrance station, maintenance facility, administrative building, visitor center, staff residence area, and associated upgrading of utilities and roads.

This is to advise that the California Department of Parks and Recreation OHMVR Commission and OHMVR Division have approved the above project on December 1, 2011 and made the following determinations regarding the above described project:

1. The project will have a significant effect on the environment.
2. An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA
3. Mitigation measures were were not made a condition of the approval of the project.
4. A Mitigation reporting or monitoring plan was was not adopted for this project.
5. A Statement of Overriding Considerations was was not adopted for this project.
6. Findings were were not made pursuant to the provisions of CEQA.

This is to certify that the Final EIR with comments and responses and record of project approval is available to the general public at the California Department of Parks and Recreation, OHMVR Division Headquarters (address listed above), and at the Ocotillo Wells District Office, 5172 Highway 78, Borrego Springs, CA 92004.

Daphne Greene
Deputy Director
OHMVR Division

December 1, 2011

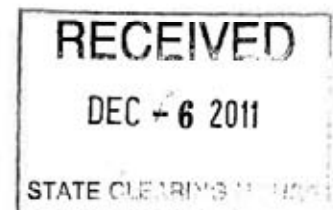


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List of Acronyms

AB	Assembly Bill
ADT	average daily trips
ANSI	American National Standards Institute
APCD	Air Pollution Control District
APS	Alternative Planning Strategy
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ATV	all terrain vehicle
B.P.	before present
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan
BLM	U.S. Bureau of Land Management
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CBC	California Building Code
cc	cubic centimeter
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CH ₄	methane
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂ e	CO ₂ equivalent
County	Imperial County

CR	Cultural Resources
CRBRWQCB	Colorado River Basin Regional Water Quality Control Board
CRHR	California Register of Historic Resources
CSP	California State Parks
CWA	Clean Water Act
CY	cubic yard
CZ	Claypan Recreational Zone
dB	decibel
dB/DD	decibel per doubling of distance
dBA	A-weighted decibel
DEIR	draft environmental impact report
diesel PM	diesel particulate matter
DR	Dunes Recreational Zone
DTSC	Department of Toxic Substance Control
EIR	environmental impact report
EMFAC	EMission FACtors
EPA	Environmental Protection Agency
ER	Eastern Recreational Zone
ESA	Environmental Site Assessment
EU	Entrance Use Zone
FEIR	final environmental impact report
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Authority
G/S	Government/Special Public Zone
GHG	greenhouse gas
HFC	hydrofluorocarbon
HMS	Habitat Monitoring System
HU	Hydrologic Unit
HWCL	Hazardous Waste Control Law
I-8	Interstate 8
ICFD	Imperial County Fire Department
IE	Interpretation and Education
IID	Imperial Irrigation District
IPCC	HBA Heber Beach Activity Zone
kV	kilovolt
LCFS	Low Carbon Fuel Standard
LDL	Larson Davis Laboratories

LEED	Leadership in Energy and Environmental Design
Leq	Equivalent Noise Level
LID	Low-Impact Development
L _{max}	Maximum Noise Level
L _{min}	Minimum Noise Level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MEI	maximally exposed individual
MMT	million metric tons
mph	miles per hour
MPO	Metropolitan Planning Organization
N ₂ O	nitrogen dioxide
NAAQS	National Ambient Air Quality Standards
NAFTA	North American Free Trade Agreement
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOA	Notice of Availability
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPR	Natural and Physical Resources
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O ₃	ozone
°F	degrees Fahrenheit
OHMVR	Off-Highway Motor Vehicle Recreation
OHP	Office of Historic Preservation
OHV	off-highway vehicle
PFC	perfluorocarbon
PHO	Park Housing Overlay
PM ₁₀	Particulate Matter
PM _{2.5}	Fine Particle
PO	Park Use and Operations
PRC	Public Resources Code
RCP	Regional Comprehensive Plan
RCRA	Resource Conservation and Recovery Act

RM	Resource Management Zone
ROG	reactive organic gases
RTP	Regional Transportation Plan
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDG&E	San Diego Gas & Electric
SERG	Soil Ecology and Restoration Group
SF ₆	sulfur hexafluoride
SHRC	State Historical Resources Commission
SIP	State Implementation Plan
SLM	sound level meter
SLM	sound level meter
SO ₂	sulfur dioxide
SR	State Route
SSAB	Salton Sea Air Basin
SURCOM	Southern Communication Center
SVRA	State Vehicular Recreation Area
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TMDL	Total Maximum Daily Load
UBC	Uniform Building Code
UCD ITS	U.C. Davis Institute of Transportation Studies
UFC	Uniform Fire Code
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compounds
VUR	Visitor Use and Recreation
WHPP	Wildlife Habitat Protection Program
WZ	Welcome Zone

Summary

This Summary section of the Heber Dunes State Vehicular Recreation Area (SVRA) ~~Draft~~ ~~Final~~ Environmental Impact Report (~~DEIR~~~~FEIR~~) is provided in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123, which specifies that an EIR contain a brief summary of the proposed action and its consequences with clear and simple language. It also states that the summary identify each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; areas of controversy known to the lead agency, including issues raised by agencies and the public; and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects. Accordingly, this summary includes a brief description of the project, environmental impacts and mitigation, areas of known controversy, and alternatives to the project.

S.1 Project Overview

Heber Dunes SVRA offers a unique recreational experience in that it is located within several miles of Imperial Valley's population centers and provides an intimate recreational experience in a family-friendly atmosphere. Because Heber Dunes SVRA is relatively small, consisting of 340 acres as compared to other off-highway vehicle (OHV) recreational areas in the region and is open for day use only, most users are from the local area. There are a limited number of developed facilities to support recreation opportunities within Heber Dunes SVRA; the majority of the site is dedicated to open sand dune and trail use. Existing recreation-supporting facilities include a ranger/staff area with a residence, a ranger/staff office and workshop/tool area, a parking area for Off-Highway Motor Vehicle Recreation (OHMVR) Division vehicles, a public restroom facility, and picnic facilities.

A California State Park must have a general plan prepared prior to the development of new facilities that may result in the permanent commitment of a resource. The proposed General Plan outlined in this ~~DEIR~~~~FEIR~~ is the first general plan prepared for this unit. General plans are broad-based policy documents that establish long-range visions and goals and provide direction on future types of improvements, services, and programs. The project considered in this ~~DEIR~~~~FEIR~~ is implementation of the proposed General Plan for Heber Dunes SVRA and associated near-term facility improvements. The proposed General Plan outlines goals and guidelines that apply to the entire Heber Dunes SVRA to address existing issues and to provide ongoing guidance to management that can be implemented to achieve the long-term vision for Heber Dunes SVRA to provide a responsible and convenient place for friends, families, and groups to enjoy the outdoor recreational setting through OHV activity and other compatible recreational uses.

In addition to the long-range planning provided through the proposed General Plan, the project includes multiple improvements to provide basic park facilities related to administration, maintenance operations, and recreation opportunities in the near term (within 2 years). The proposed facilities would provide physical improvements necessary for adequate maintenance and operations and enhanced recreation at Heber Dunes SVRA. Proposed near-term facility improvements include an entrance station, staff residence area, maintenance facility and ranger/staff station, fuel station, picnic areas, training track, and associated upgrading of utilities and roadways (repaving). Please see Figures 2-6a and 2-6b.

S.2 Summary of Impacts and Mitigation

This ~~DEIR~~-FEIR provides a detailed analysis of the issue areas that would have potential to create significant environmental effects if the proposed General Plan and near-term facility improvements were to be implemented. The environmental analysis found that, with incorporation of project design features, implementation of goals and guidelines as directed by the proposed General Plan, and adherence to regulatory requirements, including California State Parks (CSP) and OHMVR Division requirements and guidelines, the following issue areas would have less-than-significant environmental impacts from implementation of the proposed General Plan and near-term facility improvements:

- Land Use and Public Policy
- Transportation and Traffic
- Air Quality
- Noise
- Agricultural Resources
- Visual Resources
- Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Public Services and Utilities
- Recreation
- Hazardous Materials
- Climate Change

The analysis of biological resources found that construction activities or operation of Heber Dunes SVRA could result in potentially significant impacts to western burrowing owl under the proposed General Plan and near-term facility improvements. No other issue areas were found to have potentially significant impacts. Table S-1 summarizes the impacts, the

feasible mitigation measures proposed to reduce the impacts, and the level of significance after implementation of the proposed mitigation measures.

TABLE S-1. SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Potentially Significant Impact	Mitigation Measure	Significance after Mitigation
<p>Biology-1a and 1b: Destruction of western burrowing owl burrows during construction or operation activities.</p>	<p>Mitigation Measure Biology-1: In the event that western burrowing owls are discovered within a construction area or in an area that interferes with operation and management of Heber Dunes SVRA, CDFG will be consulted to determine the proper course of action, which may include avoidance or measures such as limiting construction to the nonbreeding season, burrow exclusion outside of the breeding season, collapsing of excluded burrows, and the creation of artificial burrows.</p>	<p>Less-than-significant</p>

S.3 Areas of Known Controversy

During the project scoping and public involvement process, several issues were brought forward by some members of the community and regulatory agencies as areas of concern and interest. General areas addressed in the comment letters are as follows:

- Air Quality – dust emissions, exhaust fumes
- Biologic Resources – sensitive creosote and salt bush vegetation in portions of Heber Dunes SVRA and dune preservation
- Noise – generated and experienced both on- and off-site
- Cultural Resources – known archaeological and Native American sites in nearby areas, specially along the Alamo River
- Recreation – OHV users concerned about limiting use areas for resource protection

S.4 Issues to Be Resolved

The OHMVR Division is the CEQA lead agency for this project. It will be necessary for the lead agency to consider community needs and desires, long-term planning, and the OHMVR Division mission to determine the appropriate level of intensity of OHV use at Heber Dunes SVRA. It will be important for OHMVR Division decision makers to resolve the need for

balance between open and extensive OHV use areas throughout Heber Dunes SVRA and restrictions in some areas to protect on-site natural resources.

S.5 Summary of Alternatives Considered

CEQA requires analysis of a range of potential alternatives to the proposed project. The alternatives analysis evaluates each issue area in comparison to the proposed project, which is the proposed General Plan as described in Chapter 2. The near-term facility improvements analyzed in this ~~DEIR~~-FEIR would occur regardless of the General Plan alternative selected; thus, the near-term facility improvement impacts are assumed to occur under each alternative. Each alternative is described and then analyzed in consideration of the proposed General Plan, according to whether it would have a beneficial or adverse effect.

The following three project alternatives are considered in the alternatives analysis:

1. No Project Alternative
2. Enhancement of Current Heber Dunes SVRA Alternative
3. Expanded Recreation and Resource Management Alternative

Under the No Project Alternative, Heber Dunes SVRA would remain in its current condition with no improvements or modifications. The Enhancement of Current Heber Dunes SVRA Alternative would be an extension of the current pattern of visitor use found at Heber Dunes SVRA and would provide for the most unrestricted OHV use opportunities. The Expanded Recreation and Resource Management Alternative would emphasize the enhancement of both OHV and non-OHV recreational opportunities and greater protection of on-site resources, and would create the most restrictive OHV use scenario. The Expanded Recreation and Resource Management Alternative was found to be the environmentally superior alternative.

Chapter 1.0 – Introduction

This ~~draft~~-final environmental impact report (~~DEIR~~FEIR) provides an evaluation of the environmental effects associated with the implementation of the proposed Heber Dunes State Vehicular Recreation Area (SVRA) General Plan (General Plan). Please see Chapter 2, Project Description, and Figure 2-1 for the location and setting of Heber Dunes SVRA. The ~~DEIR~~-FEIR is designed to inform decision makers and the public of the environmental consequences of implementation of the proposed General Plan and a specific near-term improvement project.

This ~~DEIR~~-FEIR was prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (Public Resources Code [PRC] Section 21000 et seq.), and the Guidelines for Implementation of CEQA published by the Resources Agency of the State of California (California Administrative Code Section 15000 et seq.). The Off-Highway Motor Vehicle Recreation (OHMVR) Division of California State Parks (CSP) is the CEQA lead agency for this project.

This introductory chapter provides an overview of the environmental review process required under CEQA, background information related to the proposed project, agency roles and responsibilities, and the organization and terminology used in this ~~DEIR~~FEIR. A detailed description of the proposed project that is the subject of this ~~DEIR~~-FEIR can be found in Chapter 2.

1.1 Type, Purpose, and Intended Use of this Environmental Impact Report

The purpose of an environmental impact report (EIR), under the provisions of CEQA, is “to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided” (PRC Section 21002.1[a]). CEQA requires that all state and local governmental agencies consider the environmental impacts of projects over which they have discretionary authority and to balance the benefits of a proposed project against its unavoidable environmental consequences. If environmental impacts are identified as significant and unavoidable, OHMVR Division may still approve the proposed General Plan if it believes that social, economic, or other benefits outweigh the unavoidable impacts.

This ~~DEIR~~-FEIR was prepared by independent consultants to the OHMVR Division to assess the potential environmental impacts that may arise in connection with actions related to approval and implementation of the proposed project, as required under CEQA. The ~~DEIR~~FEIR is intended to address the potentially significant adverse effects of the project on the physical environment, including infrastructure development; to the extent such effects are reasonably foreseeable at this time.

A Program EIR combined with a project-level EIR for the near-term facility improvements was determined to be the appropriate CEQA document for the proposed project. The proposed Heber Dunes SVRA General Plan is a high-level planning document that provides goals and guidelines for future development, rather than specific and detailed projects. Due to the small size and relatively noncontroversial uses at Heber Dunes SVRA, the near-term facility improvements have been incorporated into the General Plan with a combined program- and project-level EIR. According to State CEQA Guidelines (Section 15168), a program EIR (Tiered EIR) may be prepared on a series of actions that can be characterized as one large project; are related geographically; and are logical parts in the chain of contemplated actions in connection with issuance of rules, regulations, or plans. This Program EIR provides a first-tier analysis of the environmental effects of the Heber Dunes SVRA General Plan. A Program EIR is a type of EIR that allows a public agency to consider broad policy alternatives and program wide mitigation measures at the early stages of planning. OHMVR Division would review subsequent implementation projects for consistency with the Program EIR for the proposed project and, if necessary, prepare appropriate environmental documentation pursuant to CEQA provisions for Program EIRs, consistent with Section 15168(c) of the State CEQA Guidelines. Future projects will be reviewed in light of the information in the EIR. If OHMVR Division finds that, pursuant to Section 15152 of the State CEQA Guidelines, no new effects would occur or new mitigation measures would be required on a subsequent project, OHMVR Division can approve the activity as being within the scope of the Program EIR. If new effects are identified that were not addressed in the Program EIR, OHMVR Division would prepare an appropriate CEQA compliance document. The required contents of a Program EIR are the same as those of a project-level document. However, the level of detail and analysis in the two documents differ because a program-level document analyzes a general conceptual design and location of the proposed alternatives rather than providing a detailed level of analysis for a specific action.

As described above, this ~~DEIR~~-~~FEIR~~ also includes project-level analysis of near-term facility improvements currently proposed by OHMVR Division to meet immediate park needs for adequate administration, maintenance, and recreation purposes. The environmental analysis of this specific project takes into consideration all known details of the near-term improvements as proposed. If the improvements are to be modified substantially from the assumptions used for this analysis, additional environmental evaluation may be required prior to implementation of the improvements. In addition, this ~~DEIR~~-~~FEIR~~ describes a reasonable range of alternatives to the project.

This ~~DEIR~~-~~FEIR~~ is intended to be used by lead, responsible, and trustee agencies that may have review authority over the project. Agencies that are expected to use the ~~DEIR~~-~~FEIR~~ as a reference for future actions include, but are not limited to, the following:

- OHMVR Division
- Imperial (County)
- Imperial County Air Pollution Control District

Actions and approvals required from OHMVR Division in association with the proposed project are as follows:

- Approval of General Plan
- Approval of near-term facility improvements

1.2 General Plan Process and Public Participation

General plans are broad-based policy documents that establish long-range visions, goals, and guidelines for management, and provide direction on future types of improvements, services, and programs. General planning provides opportunities to assess resource stewardship, facility development and management, and interpretation to the public. It provides guidelines for future land use management and designation, including land acquisition and the development of facilities required to accommodate expected visitation and administrative needs.

The proposed General Plan provides a comprehensive framework intended to guide Heber Dunes SVRA development, ongoing management, and public use for a period of 20 years or more. Because it is in effect for so long, the proposed General Plan must remain consistent in the vision for Heber Dunes SVRA's future, be general in its scope, and be flexible to allow for changing conditions over time and for solving future management problems.

Public and stakeholder input is an important component of the CSP General Plan process. It is sought at the very beginning and throughout the planning process. Public input plays an essential role in the development of the recommendations, goals, and guidelines within the proposed General Plan. A public participation program was implemented during development of the proposed General Plan. The goal of this extensive public and stakeholder outreach effort was to identify the community's ideas and desires for future management and use of Heber Dunes SVRA and to understand the community's concerns about the future of the park. Elements of the public participation program included an on-site visitor survey, stakeholder interviews, distribution of fact sheets and newsletters, compilation of project information in working papers, and two public workshops.

The following is a chronological list of public information materials and opportunities for public and stakeholder participation and input provided throughout the planning process for development of the Heber Dunes SVRA General Plan:

- On-Site Visitor Interviews: February and March 2009
- Stakeholder Interviews: March 2009
- Working Paper #1: May 2009
- Working Paper #2: August 2009
- Newsletter #1: September 2009
- Working Paper #3: October 2009
- Public Workshop #1: October 14, 2009
- Working Paper #4: November 2009
- Newsletter #2: January 2010
- Public Workshop #2: February 7, 2010
- Working Paper #5: April 2010
- Working Paper #6: April 2010

All materials developed in support of the public participation program are available on the Heber Dunes SVRA website: http://www.parks.ca.gov/?page_id=26080. Public participation materials were provided in both English and Spanish to maximize opportunities for the public to provide feedback.

1.3 **Comments Received on the Scope of the ~~DEIR~~Draft EIR**

As required by CEQA Section 15082, OHMVR Division issued a Notice of Preparation (NOP) on January 19, 2010. The purpose of the NOP was to identify agency and public concerns regarding potential impacts of the proposed General Plan and to solicit comments on the scope of the ~~DEIR~~Draft EIR (DEIR). The NOP and written and verbal comments received during the 30-day public review period for the NOP are included in Appendix A of this ~~DEIR~~FEIR.

An NOP that included the Heber Dunes SVRA General Plan was previously distributed on December 12, 2007, under the title, "Notice of Preparation: Preparation of an Environmental Impact Report for the Truckhaven/Desert Cahuilla and Ocotillo Wells General Plan." The December 12, 2007, NOP announced preparation of one EIR for one General Plan that would have applied to Ocotillo Wells SVRA, the Truckhaven/Desert Cahuilla area, and Heber Dunes SVRA. OHMVR Division subsequently determined that a separate General Plan and associated EIR would be prepared for each land management unit. Thus, the NOP issued in January 2010 informs agencies and the public that an EIR is being prepared to address implementation of the proposed General Plan for Heber Dunes SVRA.

Comment letters in response to the NOP were received from the following:

- Native American Heritage Commission
- Coachella Valley Archaeological Society
- Department of Toxic Substances Control
- Ed Stovin on behalf of the San Diego Off-Road Coalition and California Off-Road Vehicle Association
- Colorado River Board of California

In addition to written comments received during the public comment period, a public scoping meeting was held during Public Workshop #2 in February 2007. Verbal comments were received during the scoping meeting. Detailed notes of these verbal comments are included in Appendix A of this document.

Issues, both written and verbal, raised during the public comment period included the following:

- Air Quality – dust emissions, exhaust fumes
- Biologic Resources – sensitive creosote vegetation, dune preservation
- Noise – generated and experienced both on- and off-site
- Cultural Resources – known archaeological and Native American sites in the general area
- Hazardous Materials – potential conditions that may pose a threat to human health or the environment

1.4 **Focus of the ~~DEIR~~FEIR**

Pursuant to Section 15063 of the State CEQA Guidelines, the scope of the analysis in this ~~DEIR~~FEIR was determined based on the results of public workshops that were conducted and comments received during the NOP comment period, which are summarized in the previous section. The ~~DEIR~~FEIR addresses those environmental issues known to the site and those issues identified to be of community concern as expressed at the workshops and scoping process. These environmental issues are identified below:

- Land Use and Public Policy
- Traffic and Transportation
- Air Quality
- Noise
- Agricultural Resources
- Visual Resources

- Biological Resources
- Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Public Services and Utilities
- Recreation
- Hazardous Materials
- Climate Change

As discussed above, this ~~DEIR~~-FEIR contains two individual components for analysis. The first component is the proposed General Plan and the second is near-term facility improvements. These two components are linked, as the improvements are a first step in implementing the vision and goals of the General Plan; however, the analysis required for each component is independent.

The approach to the environmental analysis for the proposed General Plan presented in this ~~DEIR~~-FEIR is programmatic, as the General Plan does not address specific detailed projects but, rather, presents a framework for future management and park development. The General Plan provides general development envelopes for various types of use that serve as the basis for analysis within this ~~DEIR~~FEIR. Each environmental issue is analyzed in the same manner, starting with a discussion of the existing environmental setting. The context and intensity of the environmental issue are discussed to determine the potential for a significant adverse effect with project implementation. If the General Plan would result in a significant impact for a particular environmental issue, mitigation measures are included within the discussion. The majority of the measures that reduce potential impacts included in this ~~DEIR~~-FEIR have been derived from policies and guidelines contained within the General Plan. Lastly, the analysis includes a discussion on the level of significance of each environmental impact after proposed mitigation measures are incorporated.

There are specific near-term facility improvements that are proposed in conjunction with the General Plan. At this point in the planning process, these improvement projects have been detailed and designed to a level that allows for project-specific analysis within this ~~DEIR~~FEIR. Chapter 2, Project Description, provides a full description of the near-term facility improvements. The environmental analysis provided in this ~~DEIR~~-FEIR meets CEQA requirements, and no additional analysis would be necessary to implement these improvements. If any of the proposed near-term facility improvements were to be substantially modified from what is analyzed in this document in a manner that could result in additional environmental impacts or mitigation, further environmental review may be necessary.

1.5 Environmental Review Process

As described above in Section 1.3, a CEQA-required NOP was issued to inform agencies and the public about the preparation of ~~this~~-~~the~~ DEIR and to solicit input regarding the scope of the issues to be addressed. The comments received were taken into consideration during the preparation of ~~this~~-~~the~~ DEIR.

OHMVR Division filed a Notice of Completion (NOC) with the Governor's Office of Planning and Research, State Clearinghouse, indicating that the DEIR ~~is~~-~~was~~ complete and ~~is~~ available for review-~~at this time~~. A Notice of Availability (NOA) of the DEIR ~~has also been~~ ~~was~~ filed with the State Clearinghouse and circulated to persons, organizations, and agencies on the project mailing list; it ~~is~~-~~was~~ also posted in local papers. The NOA ~~includes~~ ~~included~~ a description of the project, the project location, identification of significant environmental impacts, specification of the review period, and the address where the DEIR ~~is~~-~~was~~ available for review.

~~This~~-~~The~~ DEIR ~~is~~-~~was~~ available at the following locations for a 45-day public review period from August ~~XXX~~26, 2011 through ~~August~~ ~~XXX~~October 10, 2011.

El Centro Public Library, Community Center Branch
375 South 1st Street
El Centro, CA 92243

Camarena Memorial Library
850 Encinas Avenue
Calexico, CA 92231

Heber Dunes SVRA Ranger Station
1610 Heber Beach
Holtville, CA 92250

Ocotillo Wells District Office
5172 Highway 78
Borrego Springs CA 92004

The DEIR ~~is~~-~~was~~ also available for review online at the following websites:
http://ohv.parks.ca.gov/?page_id=26379 or http://ohv.parks.ca.gov/?page_id=25642

Comments on the DEIR ~~should be~~-~~were~~ sent to the following address:

Off-Highway Motor Vehicle Recreation Division, Ocotillo Wells District
 5172 Highway 78
 Borrego Springs, CA 92004
 Contact: Kirk Shea, State Parks Superintendent II

Agencies and individuals ~~are~~^{were} invited to comment on the information contained in the DEIR. Comments should address the DEIR's accuracy and completeness on environmental issues. Where possible, those responding should endeavor to provide the information they feel is lacking in the DEIR, or should indicate where the information may be found. Following the 45-day public comment period, all comments ~~will be~~^{were} reviewed and considered by OHMVR Division. ~~If~~^{As} necessary, analysis in the DEIR ~~will be~~^{was} revised or expanded to address comments pertaining to environmental impacts of the project received during the public comment period. Where text from the DEIR has been deleted, the text is marked with Strikeout. Underlined text represents new text added to the DEIR. The revised EIR and all responses to comments ~~will be~~^{are} incorporated into ~~a Final EIR~~^{this FEIR}. OHMVR Division ~~will~~^{then consider} the ~~Final EIR~~^{FEIR} for certification. Certification of the ~~Final EIR~~^{FEIR} is not project approval or adoption but, rather, an action by the lead agency stating that the environmental analysis is adequate and CEQA obligations have been fulfilled. The OHMVR Commission has approval authority for all OHMVR Division General Plans and EIRs. This commission determined^s whether or not to do the following:

- Accept the certified General Plan/EIR as a "Final EIR" under State CEQA Guidelines Section 15166.
- Adopt the General Plan/EIR as a General Plan under PRC 5002.2.

The OHMVR Commission unanimously adopted the General Plan and certified the Heber Dunes SVRA General Plan EIR on December 1, 2011.

1.6 Subsequent Environmental Review Process

Major programs and projects that will be implemented during the lifespan of the proposed General Plan will require additional planning and environmental review. Future planning efforts may include the preparation of specific resource management plans or guidelines to protect sensitive resources or the development of site-specific area development plans or guidelines for new facilities to determine how they will relate to their surroundings. Future planning efforts also include project-specific environmental review for implementation of subsequent development projects. These environmental reviews may include other project-specific environmental documents that tier off this FEIR. If a subsequent project is fully within the scope of the General Plan's EIR, environmental review may refer back to this FEIR and may not require additional document preparation. Securing any permits

required for future implementation projects would also be part of subsequent planning actions.

Finally, the General Plan may need to be amended if new developments or major commitments of resources are proposed for areas not covered in the plan, or if conditions experience substantial change, making facts and findings in the General Plan no longer accurate.

1.7 EIR Contents and Organization

Summary. A summary is included at the beginning of this document to provide simple reference to the conclusions of the analyses presented in this [DEIR/FEIR](#). The summary includes a matrix of environmental impacts and mitigation measures. Also addressed in the summary are issues of known controversy, environmental issues to be resolved, and alternatives considered.

Chapter 1: Introduction. This chapter provides an introduction and overview describing the purpose of the EIR and the CEQA process, a brief overview of the OHMVR Division planning and public outreach process, comments received on the scope of this [FEIR](#), and a description of future subsequent environmental review that may be required.

Chapter 2: Project Description. This chapter provides a general environmental setting, information about past and current use of Heber Dunes SVRA, project objectives, General Plan components and proposed near-term facility improvements included for analysis in the [FEIR](#), regional planning context, and intended uses of the [FEIR](#).

Chapter 3: Environmental Analysis. This chapter evaluates the potential environmental impacts of the proposed General Plan and near-term facility improvements. This chapter also presents policies within the proposed General Plan or recommended mitigation measures that reduce those potential impacts.

Chapter 4: Cumulative Analysis. This chapter analyzes the potential cumulative impacts of the proposed General Plan and near-term facility improvements in combination with past, present, and future projects.

Chapter 5: Other CEQA Required Analysis. Other CEQA required analyses provided in this chapter include environmental effects eliminated from future analysis, unavoidable significant environmental effects, significant irreversible environmental changes, and growth-inducing impacts.

Chapter 6: Alternatives to the Proposed Action. This chapter considers a reasonable range of potentially feasible alternatives to the proposed General Plan that could avoid or substantially lessen any of the significant effects of the project identified in Chapter 3.

Analysis of the No Project Alternative is included, as well as identification of the environmentally superior alternative, as required by CEQA.

Chapter 7: Public Comment. This section contains copies of the comment letters received on the DEIR during the public review period. A list of those who commented is provided at the front of the section. The comment letters have been individually numbered, and a corresponding written response by the OHMVR Division as Lead Agency to each substantive comment is provided.

Chapter 8: Mitigation Monitoring and Reporting Plan and CEQA Findings. This chapter includes the Mitigation Monitoring and Reporting Plan (MMRP) and the CEQA Findings as adopted by the OHMVR Commission as part of the certification of the FEIR.

Chapter 79: References. This chapter contains a complete list of all references used during the preparation of this FEIR, as well as citations for personal communications.

Chapter 810: Report Contributors. This chapter contains a complete list of the FEIR preparers and contributors.

Table 1-1 provides the location of CEQA-required content in this FEIR.

TABLE 1-1. LOCATION OF EIR-REQUIRED CONTENT

CEQA Guidelines Content	Location in FEIR
15122 Table of Contents or Index	Beginning of this document
15123 Summary	FEIR Summary, following Table of Contents
15124 Project Description	Ch. 2, Section 2.5, Proposed General Plan Components Ch. 1, Introduction (information about project objective and the General Plan process)
15125 Environmental Setting	Ch. 2, Section 2.1, Environmental Setting
15126 Consideration and Discussion of Environmental Impacts	Ch. 3, Environmental Analysis
(a) Significant Environmental Effects of the Proposed Project	FEIR Summary, Table S-1 Ch. 3, Environmental Analysis; within each topic area as Section 3.X.4, Summary of Significant Impacts
(b) Significant Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented	Ch. 5, Section 5.2, Unavoidable Significant Environmental Effects
(c) Significant Irreversible Environmental Changes Which Would be Involved in the Proposed Project Should it be Implemented	Ch. 5, Section 5.3, Significant Irreversible Environmental Changes
(d) Growth-Inducing Impact of Proposed Project	Ch. 5, Section 5.4, Growth-Inducing Impacts

CEQA Guidelines Content	Location in FEIR
(e) The Mitigation Measures Proposed to Minimize the Significant Effects	Ch. 3, Environmental Analysis; within each topic area as Section 3.X.5, Mitigation Measures FEIR Summary, Section S-2, Summary of Impacts and Mitigation, Table S-1
(f) Alternatives to the Proposed Project	Ch. 6, Alternatives to the Proposed Action Table 6-1, Alternatives Comparison Summary FEIR Summary, Section S-4, Summary of Alternatives Considered
15127 Limitations on Discussion of Environmental Impact	Ch. 5, Section 5.3, Significant Irreversible Environmental Changes
15128 Effects Not Found to be Significant	Ch. 5, Section 5.1, Environmental Effects Eliminated from Further Analysis
15129 Organizations and Persons Consulted	Ch. 1, Section 1.2, Public Involvement Ch. 3, Section 3.8, Cultural Resources, Native American Input Ch. 7, References Consulted Ch. 8, Report Contributors
15130 Discussion of Cumulative Impacts	Ch. 4, Cumulative Analysis
15131 Economic and Social Effects (optional topic)	Throughout the document under discussions of recreation and visitor experience

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Chapter 2.0 – Project Description

This chapter provides a description of the proposed Heber Dunes SVRA General Plan. It also includes a set of associated near-term facility improvements. As described in Section 15124 of the State CEQA Guidelines, a complete project description must contain the following information: (1) the location and boundaries of the proposed project; (2) a statement of objectives sought by the proposed project; (3) a general description of the project's technical, economic, and environmental characteristics; and (4) a statement briefly describing the intended uses of the EIR.

By legal mandate (California PRC Section 5002.2), all units operated by CSP must have a general plan prepared prior to the development of new facilities that may result in the permanent commitment of a resource. The proposed General Plan for Heber Dunes SVRA will be the first general plan prepared for this unit. General plans are broad-based policy documents that establish long-range visions and goals and provide direction on future types of improvements, services, and programs. General plans are intended to be used for 20 years or more. Therefore, the general plan establishes a decision-making framework that is consistent with the established vision but is also flexible enough to allow for changing conditions over time.

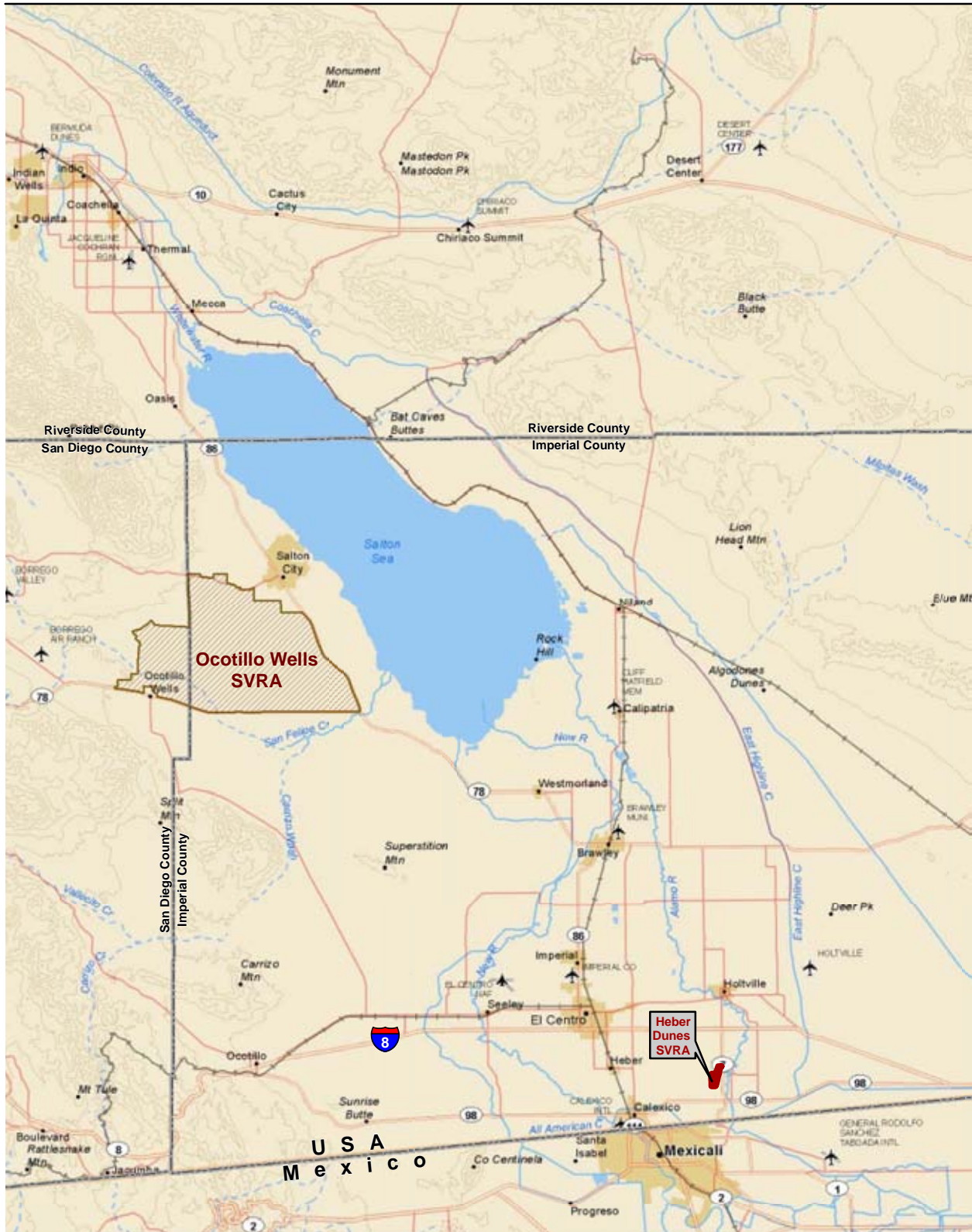
2.1 Environmental Setting

This section provides an overview of the general character of Heber Dunes SVRA and the surrounding vicinity. This description includes location, on-site activities, general environmental characteristics and resources, and surrounding development.

2.1.1 **General Character of the Site and the Vicinity**

The 340-acre Heber Dunes SVRA is located within unincorporated Imperial County in southern California, as shown in Figure 2-1. Heber Dunes SVRA is located adjacent to State Route (SR) 7, a federally designated North American Free Trade Agreement (NAFTA) highway, and irrigated cropland in Imperial Valley. Heber Dunes SVRA lies between Interstate 8 (I-8) to the north and the Mexican border and Calexico East border crossing to the south. Imperial County is primarily a rural, agricultural region, with several population centers located near regional transportation routes. Heber Dunes SVRA is accessed by a circulation network that includes I-8 to the north, SR-111 to the west, SR-7 to the east, and SR-98 to the south, plus local county roads.

Heber Dunes SVRA is surrounded by large parcels of land used for agriculture, currently in alfalfa production for nutrient enrichment of the soil with other crops rotated through at various times. Generally, agricultural land use dominates the area and extends for miles in all directions, with residential homes scattered throughout the area. Figure 2-2 depicts the



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Source: California State Parks 2009; ESRI 2010

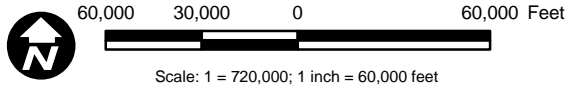
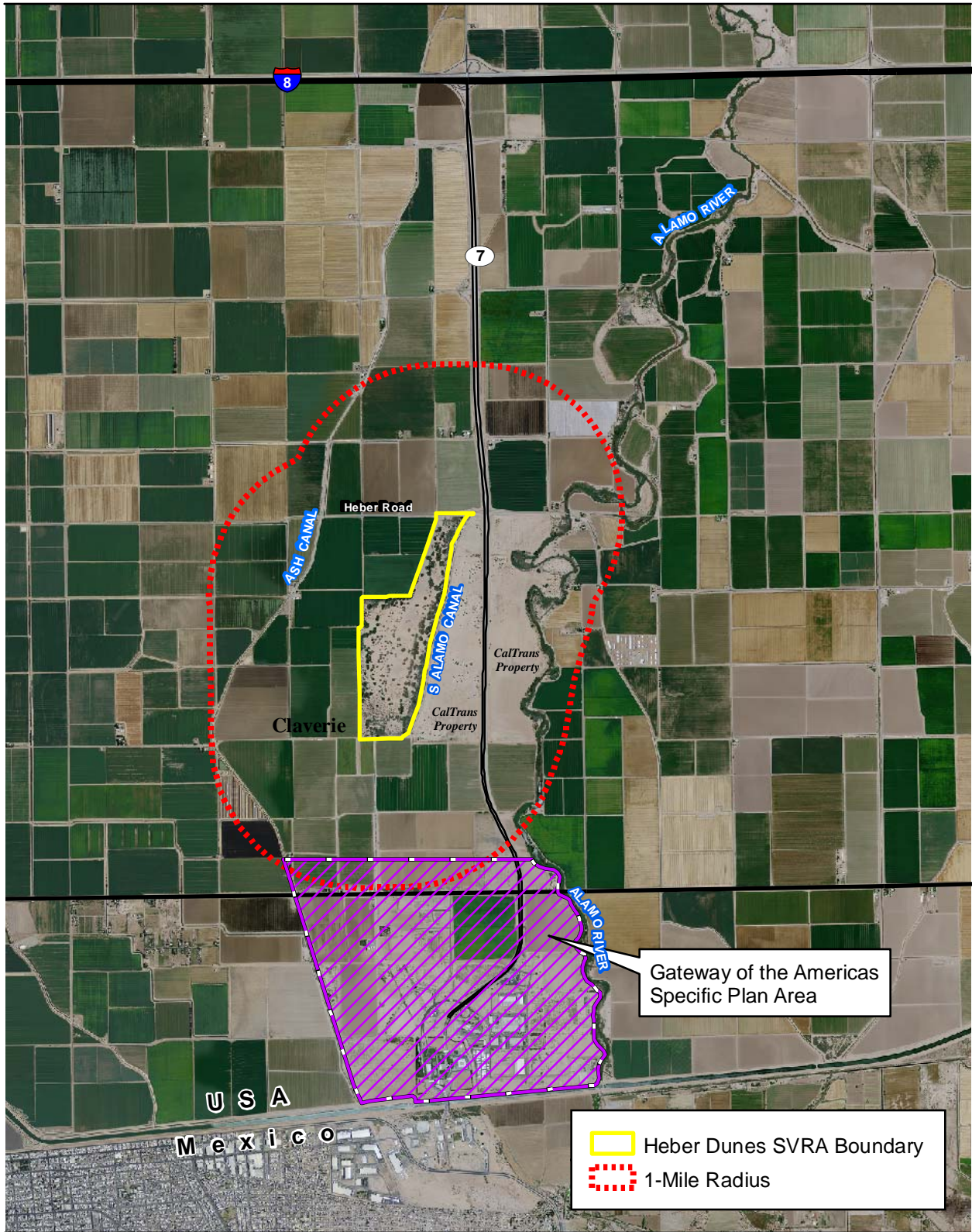
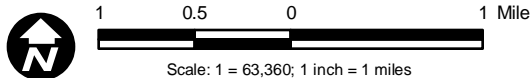


Figure 2-1
Regional Location Map



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Source: California State Parks 2009; NAIP 2009



**Figure 2-2
Local Setting**

local setting of Heber Dunes SVRA. An intricate series of canals provides irrigation water for cropland. The South Alamo Canal runs along the southern and eastern borders of Heber Dunes SVRA and the South Alamo Lateral 5-A runs along the northern edge of the property.

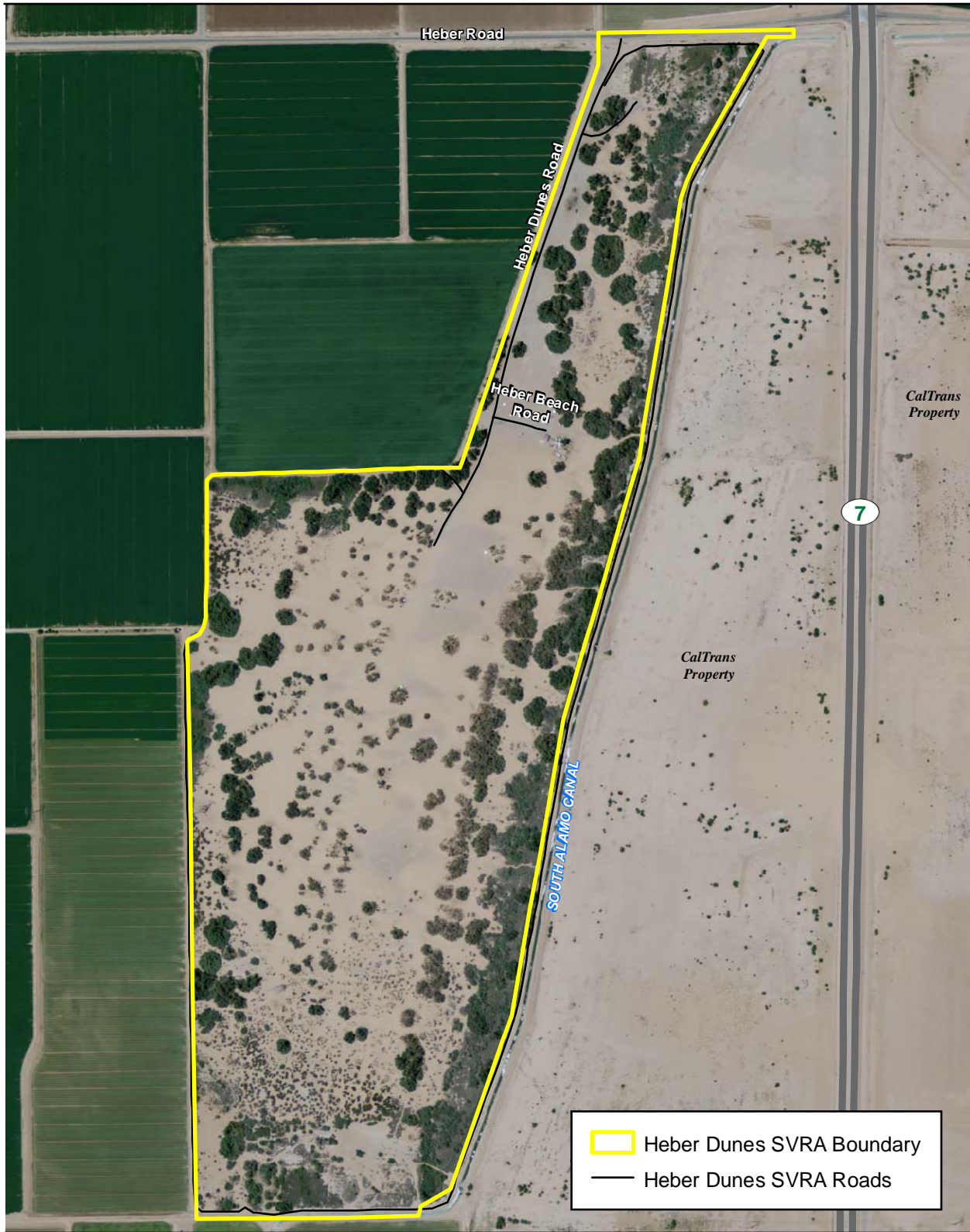
Heber Dunes SVRA is generally undeveloped and is dominated by sand dunes, as shown in Figure 2-3. Limited infrastructure and improvements include a restroom/shower facility, shaded picnic areas, staff housing, and a staff office and workshop/tool area. The primary use of the Heber Dunes SVRA is off-highway vehicle (OHV) recreation, and the majority of visitor use occurs on weekend days. The site is traversed by many paths and trails and includes open use areas. Desert vegetation is scattered within the site, mostly along the borders and on dune tops, consisting primarily of native creosote brush in the southern portion and nonnative tamarisk trees in the northern portion. Elevations within Heber Dunes SVRA range from 25 to 50 feet above sea level. Sand dunes range in height from roughly 10 to 50 feet; they stand out in the flat agricultural topography but are considerably smaller than other dunes to the east and west of the agricultural regions of Imperial County. Three San Diego Gas & Electric (SDG&E) transmission towers bisect the southwest corner and carry overhead electric lines across the site.

2.1.2 Surrounding Development

The nearest population centers include the City of Calexico, approximately 4.5 miles southwest; the City of Holtville, approximately 5 miles north; the community of Heber, approximately 7 miles west; and the City of El Centro, approximately 8.5 miles northwest. The City of Mexicali is located approximately 2.5 miles south across the international border with Mexico. Heber Dunes SVRA is roughly a 2-hour drive from the densely populated greater San Diego and greater Palm Desert U.S. metropolitan areas.

Calexico and El Centro can be characterized as mid-sized cities, with 2008 population estimates of approximately 38,700 and 43,300, respectively. Holtville and Heber are small population centers, with 2008 population estimates of approximately 6,500 each (California Department of Finance 2008; Heber Public Utility District 2009). Mexicali, located within Mexico, is the largest city in the vicinity of Heber Dunes SVRA, with an estimated 2005 population of approximately 855,900 (California Center for Border and Regional Economic Studies n.d.).

The nearest area of development is located south of Heber Dunes SVRA within the Gateway of the Americas (Gateway) planning area. The northern boundary of the Gateway planning area is located approximately 0.75 mile south of Heber Dunes SVRA, adjacent to the international border with Mexico and the Mexican city of Mexicali. The planning area of approximately 1,775 gross acres of land is proposed as a master-planned commercial and



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Figure 2-3
Aerial View of Heber Dunes SVRA

industrial complex designed to capitalize on the economic benefits of the adjacent international port-of-entry. Development of this area has begun and is planned for light industrial activities including manufacturing, wholesaling, distribution, and assembly, including related supporting transportation infrastructure and retail.

2.1.3 Rare or Unique Environmental Resources

The Heber Dunes SVRA site itself is unique in that it is a small island of sand dunes located within a large valley dominated by agriculture. This location is considered significant by the local population as a place to gather and recreate in a natural setting within proximity to their homes. There are several other designated OHV recreation areas located within Imperial County, including Imperial Sand Dunes, approximately 30 miles northeast of Heber Dunes SVRA, and Ocotillo Wells SVRA, located approximately 65 miles northwest. Typical neighborhood parks are also located within the surrounding communities. However, Heber Dunes SVRA presents an important recreational resource for the local population as it is located within proximity to the population centers of Imperial County and offers an intimate recreational experience and a family-friendly atmosphere.

With the majority of land surrounding Heber Dunes SVRA in agricultural production, the site offers a natural setting with some remaining native vegetation and habitat for wildlife. The western burrowing owl is known to occur at both Heber Dunes SVRA and in the adjacent agricultural fields. The western burrowing owl is identified as a species of special concern by the California Department of Fish and Game (CDFG). Other sensitive wildlife species that have been recorded from Heber Dunes SVRA are Albert's towhee (CDFG special animal), sage sparrow (CDFG watch list), and white-faced ibis (CDFG watch list). In consideration of recreational resources, while state and federal parkland with OHV recreation opportunities are abundant within Imperial County, these parks do not provide the novice use opportunities, community and family oriented setting, or proximity to urban centers that make Heber Dunes SVRA unique and important to the local area.

2.2 Project Background

Heber Dunes was operated as a park by Imperial County for more than 30 years. In 1998, OHMVR Division accepted responsibility for park operations at Heber Dunes by lease agreement. Heber Dunes was officially deeded to OHMVR Division in 2007 and was classified as an SVRA.

SVRAs are OHV parks that are operated by the OHMVR Division of CSP. OHVs are land vehicles mostly used for recreation purposes, such as all terrain vehicles (ATVs), motorcycles, and four-wheel-drive trucks. The OHMVR Division is mandated to ensure that SVRAs are managed for long-term environmental sustainability, and to comply with applicable environmental laws, guidelines, and regulations.

The OHMVR Division is required to manage SVRAs in accordance with management standards established for the OHMVR Program (PRC Sections 5090.2, 5090.35, and 5090.53). These management standards include Soil Conservation Standards and Guidelines for Off-Highway Vehicle Recreation Management and resource management protocols.

2.3 Current Heber Dunes SVRA Use

While substantial recreation facilities exist in Imperial County, Heber Dunes SVRA offers a unique recreational experience as it is located within several miles of Imperial County population centers and provides OHV recreation in an intimate setting and family-friendly atmosphere. The relatively low sand dunes are ideal for novice OHV recreationalists. Because Heber Dunes SVRA is relatively small, is open for day use only, and has gentle terrain, most users are from the local area.

Heber Dunes SVRA is open 7 days a week year-round and is managed for day use only (no overnight camping is currently allowed). It receives light use during the week, with the bulk of visitation on Saturdays and Sundays. Heber Dunes SVRA experiences significant visitation fluctuation by season, with the highest levels occurring in the late fall, winter, and early spring (November through April). Table 2-1 shows the available visitor counts for 2008 through 2011. Weekends at Heber Dunes SVRA are very popular during the cooler months of the year.

TABLE 2-1. HEBER DUNES SVRA VISITATION DATA

	2007/08	2008/09	2009/10	2010/11
JULY	357	1,411	910	886
AUGUST	315	725	2,167	718
SEPTEMBER	1,362	1,922	1,264	1,012
OCTOBER	2,646	1,495	2,250	1,632
NOVEMBER	3,455	2,671	1,803	1,649
DECEMBER	3,868	1,376	2,083	1,743
JANUARY	2,790	2,109	2,538	2,230
FEBRUARY	2,800	2,093	1,149	1,500
MARCH	2,394	2,141	2,109	1,907
APRIL	2,384	2,918	1,498	1,902
MAY	2,030	1,434	1,270	1,813
JUNE	1,264	1,158	1,027	1,098
Total	25,665	21,451	20,068	18,090

Source: OHMVR Division 2011

In general, visitors at Heber Dunes SVRA recreate with OHVs, gather with friends and family, and enjoy the open area and natural setting. The site is traversed by many basic paths and trails, has large flat areas for open riding, and does not have features that allow for the more extreme use or trail climbing that exist in other recreational areas in Imperial County. This environment offers good conditions for young and novice OHV users to practice and creates a family-friendly atmosphere. Thus, Heber Dunes SVRA is commonly used as a gathering place to picnic, barbeque, and recreate. A State Park ranger patrols on-site year-round and provides oversight, maintenance, and general administration.

As shown in Figure 2-4, a limited number of developed facilities support recreation opportunities within Heber Dunes SVRA. Existing recreation-supporting facilities include a ranger/staff area with recreational vehicle (RV) residence, a ranger/staff office and workshop/tool area, a parking area for OHMVR Division vehicles, and an old restroom facility that is used for storage. A public restroom is located at the northern portion of the site near the ranger/staff facilities. It consists of flush-toilets, sinks, and showers. There are 13 picnic areas. Seven of the 13 picnic areas are clustered near the restroom facility and the remaining six are scattered south of Heber Dunes Road. Each of these picnic areas includes a picnic table with benches, a fire pit, and a trash can. Shade structures cover the picnic tables. Fires are permitted only in designated fire pits. There are no designated parking/staging areas and visitors typically park and unload near their gathering location. A camp host area is located near the northern boundary of the site off Heber Dunes Road. Seasonal volunteer camp hosts live in an RV and are present at the entrance during the busy months. There are dumpsters in the immediate vicinity. Some signage and wayfinding exists throughout Heber Dunes SVRA.

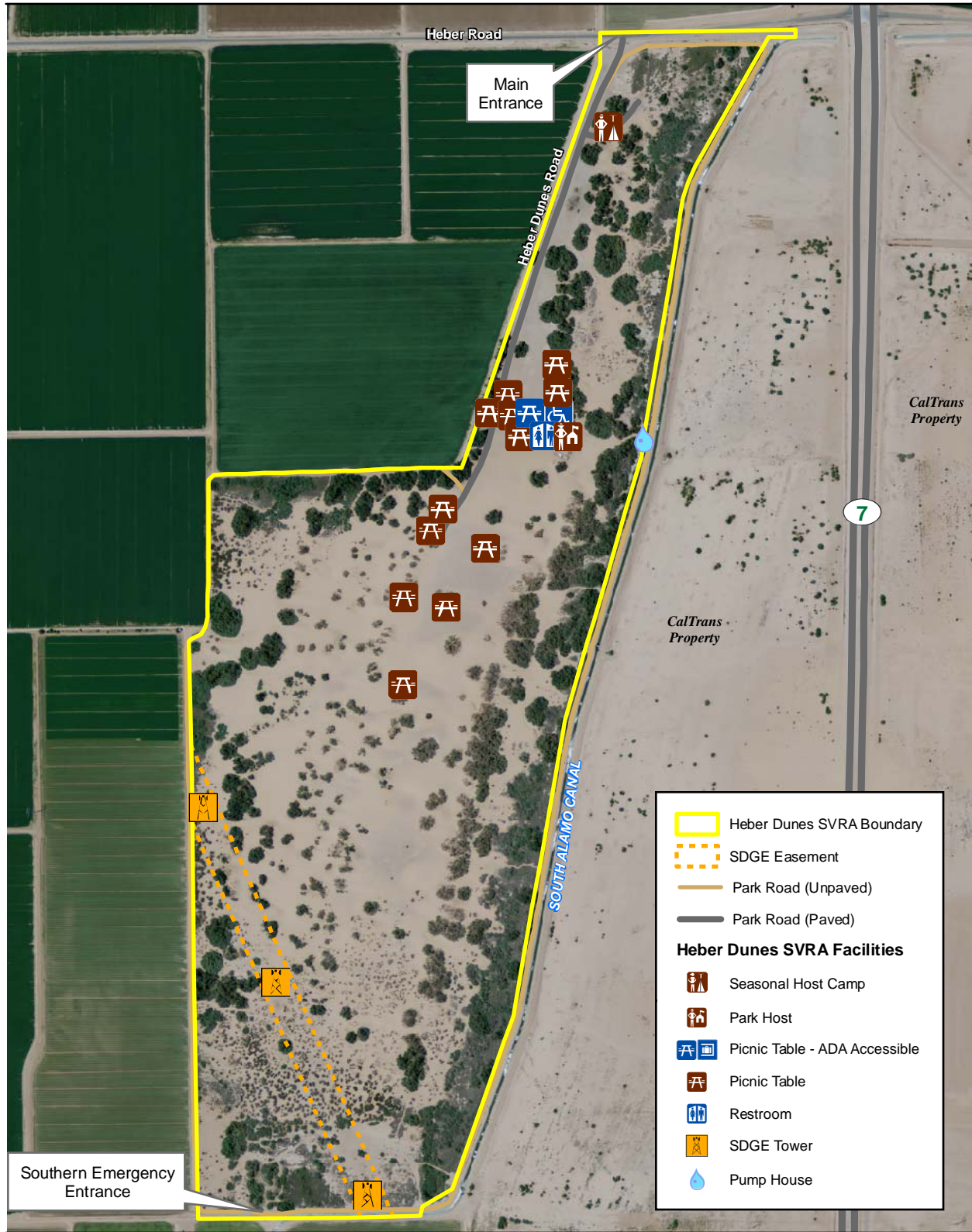
2.4 Project Objectives

Project objectives are used to develop and evaluate a range of alternatives to the proposed project. A description of the project objectives is required by Section 15124 of the State CEQA Guidelines.

2.4.1 Proposed General Plan Project Objectives

The objectives of the proposed Heber Dunes SVRA General Plan are as follows:

- Plan orderly implementation of long-term capital improvements, including the near-term facility improvements in the Heber Beach and entrance areas.
- Guide the enhancement of recreation opportunities that support family and community-oriented use.



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Source: California State Parks 2009; NAIP 2009

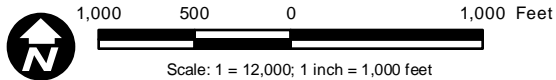


Figure 2-4
Heber Dunes SVRA Existing Facilities

- Provide a framework for the provision of adequate facilities for Heber Dunes SVRA management operations.
- Manage Heber Dunes SVRA for protection of natural communities and the quality of the OHV recreational experience.
- Guide future interpretive and educational programs.
- Promote public health and safety at Heber Dunes SVRA.
- Anticipate future area growth pressures and identify strategies to avoid or minimize impacts to Heber Dunes SVRA.

2.4.2 Near-Term Facility Improvements Objectives

The objectives of the near-term facility improvements are as follows:

- Provide adequate Heber Dunes SVRA administration, visitor services, and maintenance facilities.
- Improve traffic flow at Heber Dunes SVRA ingress and egress.
- Provide a Heber Dunes SVRA staff residence area.
- Improve and expand existing opportunities for OHV recreation.
- Provide OHV training facilities and opportunities.
- Improve and expand existing gathering areas.

2.5 Proposed General Plan Components

This section provides an overview of the proposed Heber Dunes SVRA General Plan components, including park classification, purpose, vision, land use management, and proposed near-term improvements.

2.5.1 Park Classification

Heber Dunes is an SVRA.

2.5.2 Purpose

The declaration of purpose describes the purpose of an SVRA and is the broadest statement of management goals designed to fulfill the vision of the SVRA. A declaration of purpose is required by California PRC, Section 5002.2(b).

The purpose of Heber Dunes SVRA is to provide effectively managed, responsible OHV and related recreational opportunities, with recognition of the significance of Heber Dunes SVRA to the local population and the greater southern California region. The park's relatively small size and unique outdoor recreational setting provide opportunities for OHV recreation, family and social gathering, special events, and education and interpretive programs.

2.5.3 Vision

A park's vision describes an SVRA in future years, after the general plan's objectives have been achieved.

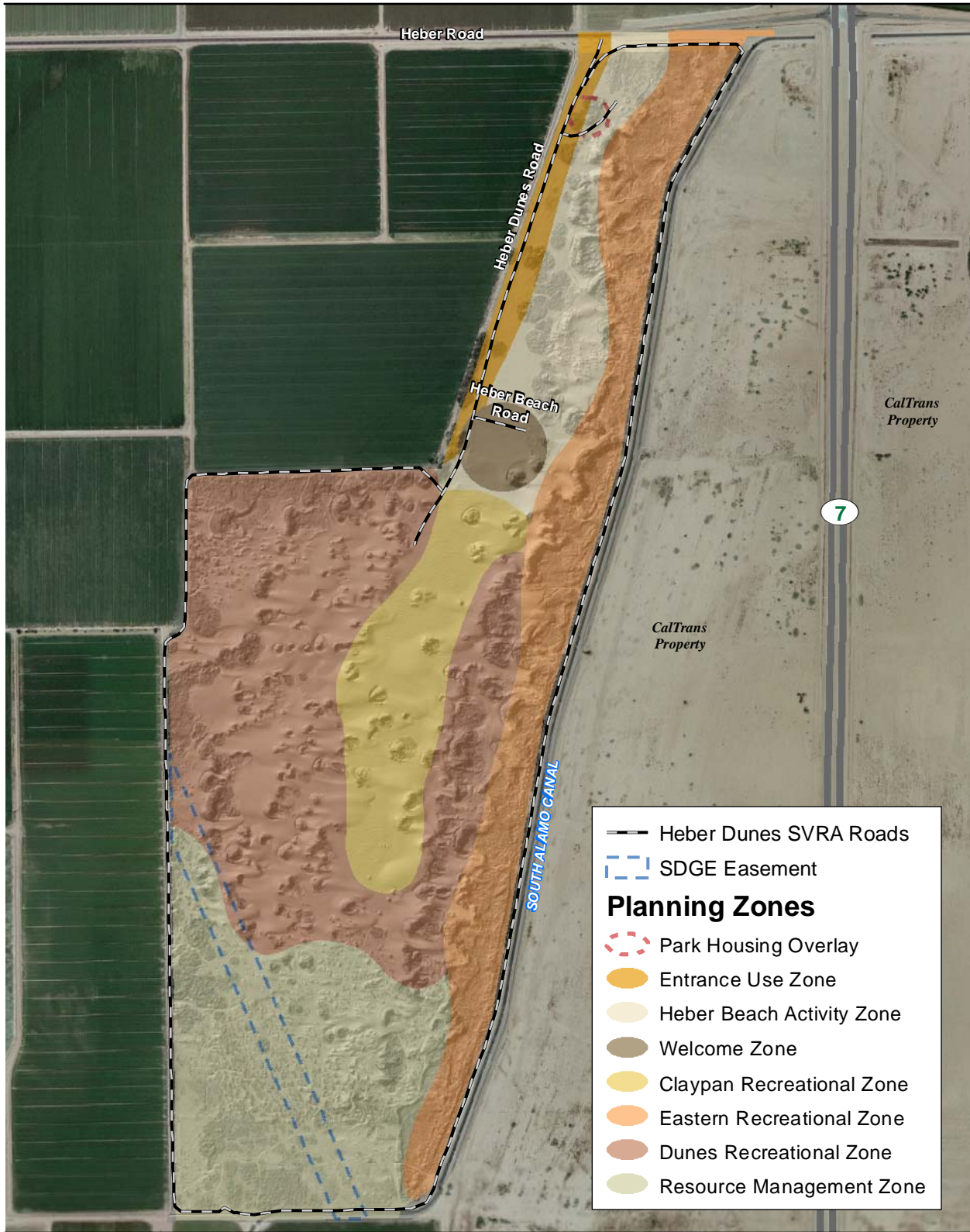
Heber Dunes SVRA provides a convenient place for friends, families, and groups to enjoy the outdoor recreational setting through OHV activity and other compatible recreational uses. On any given day, visitors would be able to take part in managed OHV recreation and other activities, relax, and enjoy the unique setting. Heber Dunes SVRA visitors will have access to well-managed, varied, and enjoyable OHV recreation opportunities. The community significance and natural history of Heber Dunes SVRA provide an opportunity for education and interpretation. Future expansion of Heber Dunes SVRA would provide a greater range of OHV recreational and resource management opportunities, along with potentially avoiding or minimizing conflicts from future development.

2.5.4 Land Use Management

Goals and guidelines that apply to the entire Heber Dunes SVRA (see Goals and Guidelines below) have been developed to address existing issues and to provide ongoing guidance to management that can be implemented to achieve the long-term vision for Heber Dunes SVRA. The Goals establish the purpose and the Guidelines provide the direction that the OHMVR Division will consider to achieve these goals. Goals and Guidelines apply to the entire Heber Dunes SVRA.

In addition to the Goals and Guidelines, Planning Zones for the proposed Heber Dunes SVRA General Plan have been developed to allow for specialized management by area. These Planning Zones, shown in Figure 2-5, were developed through consideration of a variety of factors, including geographic relationships, resource values, ecological parameters, management issues and goals, types and intensities of land use, and visitor use and experience.

Section 2.5.4.1 identifies the Goals and Guidelines and Section 2.5.4.2 presents an overview of the management intent for each Planning Zone, as well as guidelines for each Planning Zone.



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Source: California State Parks 2009; NAIP 2009

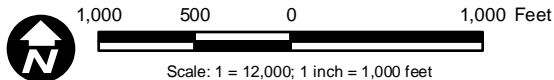


Figure 2-5
Proposed General Plan

2.5.4.1 Goals and Guidelines

This section provides the Goals and Guidelines of the Heber Dunes SVRA General Plan.

Visitor Use and Recreation (VUR)

VUR Goal 1: Provide a range of high-quality and responsible OHV recreation opportunities that a diverse visiting population can enjoy, experience, and appreciate.

VUR Guideline 1.1: Accommodate and enhance existing recreation and visitor opportunities and ensure use levels are appropriate to the OHMVR Division resource protection guidelines.

VUR Guideline 1.2: Monitor demographic trends and Heber Dunes SVRA visitation patterns. Implement management actions that respond to these trends while remaining consistent with Heber Dunes SVRA General Plan's vision, goals, and guidelines.

VUR Goal 2: Enhance individual-, family-, and community-centered recreational opportunities.

VUR Guideline 2.1: Provide facilities and recreational opportunities that respond to local needs. These could include outdoor education programs, managed camping, and collaborative programs for local schools and organizations. Potential habitat-disturbing activities, such as camping, would be located to minimize impacts to environmentally sensitive areas.

VUR Guideline 2.2: Create partnerships for interpretive programs that connect Heber Dunes SVRA to the broader region, such as interpretation and education of Imperial County's agricultural heritage and the relationship between farms and child nutrition. Consider partnerships with OHV groups, community groups, and local organizations such as the University of California Desert Research and Extension Center and the Imperial County Farm Bureau.

VUR Goal 3: Provide essential visitor and management facilities to enhance the operation of Heber Dunes SVRA and the visitor experience.

VUR Guideline 3.1 Promote opportunities to incorporate sustainability into Heber Dunes SVRA development, operations, and maintenance. Sustainability initiatives could include incorporating alternative energy and promoting energy efficiency, using reclaimed water, applying Leadership in Energy and Environmental Design (LEED) standards to new construction, and other sustainability initiatives.

VUR Guideline 3.2: Minimize greenhouse gas emissions at Heber Dunes SVRA by supporting and encouraging renewable energy-powered OHV use.

VUR Guideline 3.3: Prioritize access to less-visited areas of Heber Dunes SVRA that are of low biological resource value by improving recreational opportunities in these areas first.

VUR Guideline 3.4: Establish and maintain a coordinated wayfinding program that clarifies how to access and enjoy Heber Dunes SVRA. Provide orientation and trail signs that help visitors easily understand the allowable recreational activities within the different Planning Zones.

VUR Guideline 3.5: Provide visitor use facilities that support opportunities for diverse visitor experiences, which could include a variety of OHV opportunities and other compatible recreational activities such as barbeque facilities and horseshoe pits. Locate facilities for effective and efficient visitor and staff use while minimizing use conflicts and negative effects on viewsheds and natural resources.

VUR Goal 4: Provide recreational opportunities compatible with OHV use.

VUR Guideline 4.1: Provide additional recreational and social gathering opportunities that are compatible with OHV use, such as training areas and tracks, shade structures, picnic tables, walking paths through shaded areas with interpretive programming, a children's play area, and managed camping.

VUR Goal 5: Encourage special events that are consistent with the OHMVR Division Mission and Values.

VUR Guideline 5.1: Develop partnerships with local communities to offer special events.

VUR Guideline 5.2: Actively develop partnerships with nonprofit organizations or sponsors to offer special events that feature both OHV activities and other recreational opportunities.

VUR Guideline 5.3: Coordinate with OHV clubs and nonprofit organizations to offer special events featuring OHV activities.

VUR Guideline 5.4: Use the OHMVR Division special event permit process to require appropriate traffic and safety procedures and enforcement measures for a given special event.

Interpretation and Education (IE)

IE Goal 1: Increase visitors' knowledge of and appreciation for OHV use and history, natural and cultural history, resources, and recreational opportunities of Heber Dunes SVRA.

IE Guideline 1.1: Develop youth and adult OHV training programs and supporting facilities. Provide outreach to increase visitor participation in the training programs.

IE Guideline 1.2: Interpret the history of Heber Dunes SVRA and surrounding communities, including the history and agricultural heritage of Imperial County.

IE Guideline 1.3: Provide opportunities for visitors to gain an understanding of Heber Dunes SVRA's natural resources.

IE Guideline 1.4: Interpret the diversity of recreational experiences offered within Heber Dunes SVRA.

IE Goal 2: Develop education and interpretive materials that respond to the sense of place, history, and OHV use at Heber Dunes SVRA to educate the visitor population.

IE Guideline 2.1: Heber Dunes SVRA interpretive programs should address OHV history at the SVRA and how the natural processes affect the landscape.

IE Guideline 2.2: Provide a mix of interpretive and educational programs that are interactive and experiential, incorporating modern media and traditional exhibits. Expand marketing and outreach for Heber Dunes SVRA's educational programs.

IE Guideline 2.3: Provide universal access to all park visitors.

IE Guideline 2.4: Involve local community organizations and OHV organizations in the creation of interpretive programs that are attractive to Heber Dunes SVRA visitors. Provide interpretive programming in additional languages used in local communities, such as Spanish, to ensure interpretive programs are available to a broad cross-section of visitors.

IE Goal 3: Promote outreach efforts to develop partnerships for interpretive programming and education for responsible OHV use.

IE Guideline 3.1: Expand the volunteer program and work closely with Heber Dunes SVRA volunteers to improve interpretive resources, programs, and opportunities.

IE Guideline 3.2: Collaborate with organizations such as Tread Lightly! to develop education and interpretive programming related to responsible OHV recreation.

IE Guideline 3.3: Use interpretive techniques to deliver Heber Dunes SVRA orientation information and public safety messages, such as responsible OHV use.

IE Goal 4: Expand understanding of ecological relationships and heighten awareness and sensitivity to human impacts.

IE Guideline 4.1: Provide environmental education on topics such as physical and natural resources and ecological relationships at Heber Dunes SVRA.

IE Guideline 4.2: Interpret dunes ecology and explain sensitivities to human impacts.

IE Guideline 4.3: Highlight opportunities for OHV recreationists to minimize their impacts on natural and physical resources through engaging, creative interpretive programming and education. Seek assistance in developing creative interpretive programming from organizations such as Tread Lightly!.

IE Guideline 4.4: Interpret the OHMVR Division carbon reduction goals and inspire Heber Dunes SVRA visitors to adopt similar measures in their daily lives, including OHV recreation.

Park Operations (PO)

PO Goal 1: Maintain and enhance the quality of OHV recreational opportunities.

PO Guideline 1.1: Provide recreation opportunities that expand the use of Heber Dunes SVRA during weekday slow periods and during the summer “off season.” Consider extended hours during the summer to allow visitors to enjoy Heber Dunes SVRA in the early morning and late evening.

PO Guideline 1.2: Provide visitor services and products that enhance recreational experiences, consistent with the PRC, OHMVR Division strategic goals and objectives, and Heber Dunes SVRA’s purpose and vision.

PO Guideline 1.3: Evaluate and implement new types of concessions to respond to regional and statewide recreation trends, demographic changes, and needs that are not being met by the private sector.

PO Guideline 1.4: Partner with organizations to enhance the OHV recreation experience with activities such as children's recreation events, managed night use events, and OHV competitive events.

PO Goal 2: Expand Heber Dunes SVRA to enhance recreation and resource management.

PO Guideline 2.1: Acquire adjacent properties or easements from willing sellers that can enhance the recreational experience and/or resource management of Heber Dunes SVRA.

PO Guideline 2.2: Provide additional sites for events, managed camping, water features, or other visitor amenities through additional property acquisition.

PO Goal 3: Provide facilities and services that contribute to the convenience of visitors.

PO Guideline 3.1: Provide signage informing the visitor of responsible OHV recreation and extreme temperature precautions. Install or improve signage where appropriate and necessary.

PO Guideline 3.2: Ensure OHV use areas are properly maintained, where feasible, and monitor for hazards.

PO Guideline 3.3: Continue to manage Heber Dunes SVRA for informal parking to respond to OHV visitor preferences.

PO Guideline 3.4: Provide staff housing to support Heber Dunes SVRA security, emergency response, and maintenance.

PO Guideline 3.5: Work with state agencies and local communities, districts, and agencies to achieve a unified delivery of services in response to public safety emergencies.

PO Guideline 3.6: When planning new facility development or property acquisitions, address the needs for maintenance and public safety personnel, equipment, communications, and emergency vehicle access.

PO Goal 4: Provide guidance to ensure that special events are well managed and that appropriate visitor services are available.

PO Guideline 4.1: Coordinate with sponsoring organizations regarding scheduling, operating, and managing special events and ensure that any appropriate mitigation is implemented.

PO Guideline 4.2: Design and implement parking management plans to accommodate increased demand during special events.

PO Guideline 4.3: Develop alternatives for special event parking, such as traffic mitigation and control plans for overflow parking on local roads.

Natural and Physical Resources (NPR)

NPR Goal 1: Manage Heber Dunes SVRA for protection of natural communities and cultural resources and the quality of the OHV recreational experience.

NPR Guideline 1.1: Identify and establish Adaptive Management Opportunity Zones where populations of special-status native wildlife and special-status plant species are known to occur.

NPR Guideline 1.2: Utilize an Adaptive Management Process for biological resources and soil resources that incorporates the 2008 Soil Conservation Standard and Guidelines and appropriate resource management.

NPR Guideline 1.3: To the extent feasible, locate visitor-serving facilities in areas already subject to considerable disturbance or of low resource value to minimize disturbance to existing habitat areas.

NPR Guideline 1.4: Prepare and conduct surveys and inventories of natural resources in areas subject to development where sensitive biological resources are expected to occur based on monitoring efforts. These sensitive biological resources could include creosote scrub habitat, western burrowing owl, or other sensitive species identified under future monitoring efforts. Use survey and inventory results to guide adaptive management decisions.

NPR Guideline 1.5: If any sensitive biological resources are found within the areas that would be affected by the proposed activities, plan and design such activities to avoid or mitigate potential impacts during construction and post-construction periods.

NPR Guideline 1.6: In the event that some disturbance to sensitive biological resources is unavoidable, appropriate measures to offset those impacts will be identified and implemented in consultation with a qualified biologist and the appropriate resource agencies.

NPR Guideline 1.7: Concentrate new trail development in areas of low habitat value. This could include existing disturbed habitat or areas of nonnative vegetation.

NPR Guideline 1.8: New trails should primarily be routed around the edges of high-quality habitat areas to avoid bisection of habitat.

NPR Guideline 1.9: Use drought-tolerant local landscaping for future projects, as feasible.

NPR Guideline 1.10: Continue to pursue best available dust-control measures, which may include watering and soil amendments.

Cultural Resources (CR)

CR Goal 1: Preserve and protect significant cultural sites and features.

CR Guideline 1.1: No cultural resources have been identified within Heber Dunes SVRA through studies to date. However, if unanticipated resources are discovered within or adjacent to areas that will be affected by proposed activities, such activities will be planned and designed to avoid or minimize impacts to the identified resources.

CR Guideline 1.2: In the event that some disturbance to cultural resources is unavoidable, appropriate measures will be identified and implemented in consultation with a qualified cultural resource professional. Such measures will be consistent with all applicable rules and regulations relating to the protection of cultural resources.

2.5.4.2 Planning Zone Management Intent and Guidelines

The following sections provide an overview of the management intent and guidelines for each Planning Zone. All specific Planning Zone management will adhere to appropriate Goals and Guidelines, in addition to the following more specific guidelines identified in each Planning Zone. As shown in Figure 2-5, there are eight Planning Zones:

- Park Housing Overlay
- Entrance Use Zone
- Heber Beach Activity Zone
- Welcome Zone
- Claypan Recreational Zone
- Eastern Recreational Zone
- Dunes Recreational Zone
- Resource Management Zone

Park Housing Overlay Management Intent

The Park Housing Overlay (PHO) is proposed at the northern end of Heber Dunes SVRA, overlapping both the Entrance Use Area and the Heber Beach Activity Area. Employee residence facilities in this Planning Zone would provide continuous staff presence at Heber Dunes SVRA.

Park Housing Overlay Guidelines

PHO Guideline 1: Establish staff housing in the Park Housing Overlay to provide staff presence in the vicinity of the Heber Dunes SVRA entrance.

PHO Guideline 2: Establish camp host sites to facilitate additional oversight of Heber Dunes SVRA by volunteers.

PHO Guideline 3: Minimize conflicts between staff housing and visitor facilities and activities.

Entrance Use Zone Management Intent

The Entrance Use Zone (EU) encompasses the main roadway into Heber Dunes SVRA and access to the Heber Beach Activity Area, Welcome Area, and the Dunes Recreational Area. This area serves as the only Heber Dunes SVRA entrance. This Planning Zone would be managed to provide adequate circulation along the Heber Dunes SVRA entrance road. This area would include signage branding Heber Dunes SVRA and providing directional and responsible OHV-use guides.

Entrance Use Zone Guidelines

EU Guideline 1: Facilitate traffic circulation along the entrance road (Heber Dunes Road) by providing clear directional signage.

EU Guideline 2: Limit access to Heber Beach Activity Zone to specific access points to reduce potential conflict between vehicular traffic and recreational activities within the Heber Beach Activity Zone.

Heber Beach Activity Zone Management Intent

The Heber Beach Activity Zone (HBA) is proposed in the northern portion of Heber Dunes SVRA, between the EU to the west and the Eastern Recreational Area to the east. This area is characterized by a relatively flat, open area with pockets of tamarisk trees and saltbush scrub that provide shade. Currently, the area has a public restroom/shower facility, shaded picnic areas, staff housing, and a staff office and workshop/tool area. The HBA is primarily used by groups and families that like to use the flat, open area for novice riding. A portion

of this area would be separated from other uses to create an area that includes non-OHV recreation. This Planning Zone would be managed with a focus on pedestrian mobility by limiting vehicle travel speeds and vehicular access from Heber Dunes Road to specific access points. Gathering areas and passive recreational opportunities would continue to be sited to maximize opportunities for shade. Facilities to support social gathering would be located in this area, such as single and clustered ramadas, barbeque facilities, and fire pits. Passive recreational opportunities, such as horseshoe pits and walking paths with interpretive programming, would be provided. Facilities such as a beginner's use area for adolescents and adults, and a children's play area are intended to further enhance the recreational experience in this Planning Zone. Facilities to support interpretive and educational programming, such as a classroom and interpretive center, may be established in this area.

Heber Beach Activity Zone Guidelines

HBA Guideline 1: Separate portions of this area from other uses to create an area that includes non-OHV recreation through means such as physical barriers, signage, and/or landscaping.

HBA Guideline 2: Encourage additional recreational opportunities within this area, such as social gathering, picnicking, barbequing, and youth OHV recreation through reduced vehicle travel speeds.

HBA Guideline 3: Create additional passive recreational opportunities such as horseshoe pits, walking trails with interpretive programming, and play areas for children.

HBA Guideline 4: Install additional facilities to support recreational use of this area, such as single and clustered ramadas, barbeque facilities, and fire pits.

HBA Guideline 5: Site additional facilities and passive recreational opportunities to maximize opportunities for shade, as feasible.

HBA Guideline 6: Establish a training track designed for young and novice OHV users to gain experience, encouraging continued use of this area by families.

HBA Guideline 7: Consider adapting existing structures within this area for use as a classroom and interpretive center.

Welcome Zone Management Intent

A Welcome Zone (WZ) is proposed between the Heber Beach Activity Zone to the north and the Claypan Recreational Zone to the south, and encompasses most of Heber Beach Road.

This Planning Zone would be managed to provide a centralized location for initial visitor contact, orientation, and education. Facilities to be considered for this Planning Zone are a ranger/staff station, a maintenance facility, a visitor center, additional public restrooms, and a staging or parking area.

Welcome Zone Guidelines

WZ Guideline 1: Establish this area's function as Heber Dunes SVRA's primary visitor orientation and interpretation center. Encourage visitor exploration of other portions of Heber Dunes SVRA from this area.

WZ Guideline 2: Provide orientation information, interpretive programs, and visitor services. Consider the establishment of facilities, such as a ranger/staff station, a maintenance facility, a visitor center, and additional public restrooms, to support these functions.

Claypan Recreational Zone Management Intent

The Claypan Recreational Zone (CZ) is proposed in the center of Heber Dunes SVRA and is bordered by the Welcome Area to the north, and the Dunes Recreational Zone to the west, south, and east. This Planning Zone would be managed to provide "open OHV use," which means that vehicular travel is not restricted to identified trails. Additional recreational and social gathering opportunities compatible with open OHV use would be considered for the CZ Zone. Individual and group picnic tables and shade ramadas would provide additional shaded gathering areas. Methods to control speed within this area would be considered.

Claypan Recreational Zone Guidelines

CZ Guideline 1: Encourage continued use of this area for open OHV activity and social gathering and associated recreational opportunities.

CZ Guideline 2: Install additional facilities to support recreational use of this area as funding becomes available, such as single and clustered ramadas, barbeque facilities, and fire pits.

CZ Guideline 3: Monitor the need for speed control with respect to visitor safety within this area and examine methods to control speed.

CZ Guideline 4: Explore potential dust-control measures for this area, such as watering and soil amendments.

Eastern Recreational Zone Management Intent

This Planning Zone would be managed to provide an interesting and challenging recreational experience that capitalizes on existing topography and vegetation, primarily through the creation of new trail alignments. Existing trails may be realigned within the Eastern Recreational Zone (ER).

Eastern Recreational Zone Guidelines

ER Guideline 1: Provide an interesting and varied recreational experience that capitalizes on existing topography and vegetation, primarily through the creation of new trail alignments.

ER Guideline 2: Create a diversity of OHV use options by connecting new trails within this area to identified trails within the Resource Management Zone.

ER Guideline 3: Site new trails to minimize impacts to sensitive biological resources.

Dunes Recreational Zone Management Intent

This Planning Zone would be managed to provide “open OHV use.” Individual and group picnic tables and shade ramadas would provide additional shaded gathering areas. Additional recreational and social gathering opportunities compatible with open OHV use would be considered for the Dunes Recreational Zone (DR).

Dunes Recreational Zone Guidelines

DR Guideline 1: Encourage continued use of this area for open OHV activity and social gathering and associated recreational opportunities.

DR Guideline 2: Install additional facilities to support recreational use of this area as funding becomes available, such as single and clustered ramadas, barbeque facilities, and fire pits.

Resource Management Zone Management Intent

This Planning Zone would be managed to protect natural resources while providing OHV access only on identified trails. The Resource Management Zone (RM) would emphasize visitor education and interpretation. This area has been identified as a Resource Management Zone because it contains the highest quality creosote scrub habitat and other natural resources within Heber Dunes SVRA. Rules and regulations are more restrictive in this zone than in other management areas to ensure resource protection. Efforts to

enhance and restore native vegetation and wildlife habitat would be considered for this area.

Resource Management Zone Guidelines

RM Guideline 1: Minimize disturbance to creosote scrub habitat, saltbush scrub habitat, and other natural resources.

RM Guideline 2: Enhance creosote scrub habitat and other natural resources within this Planning Zone while maintaining visitor access on identified trails. Enhancement measures could include trail closure, vehicle barriers, weed control, and habitat restoration.

RM Guideline 3: Implement weed control measures where necessary to encourage recovery of degraded native habitats.

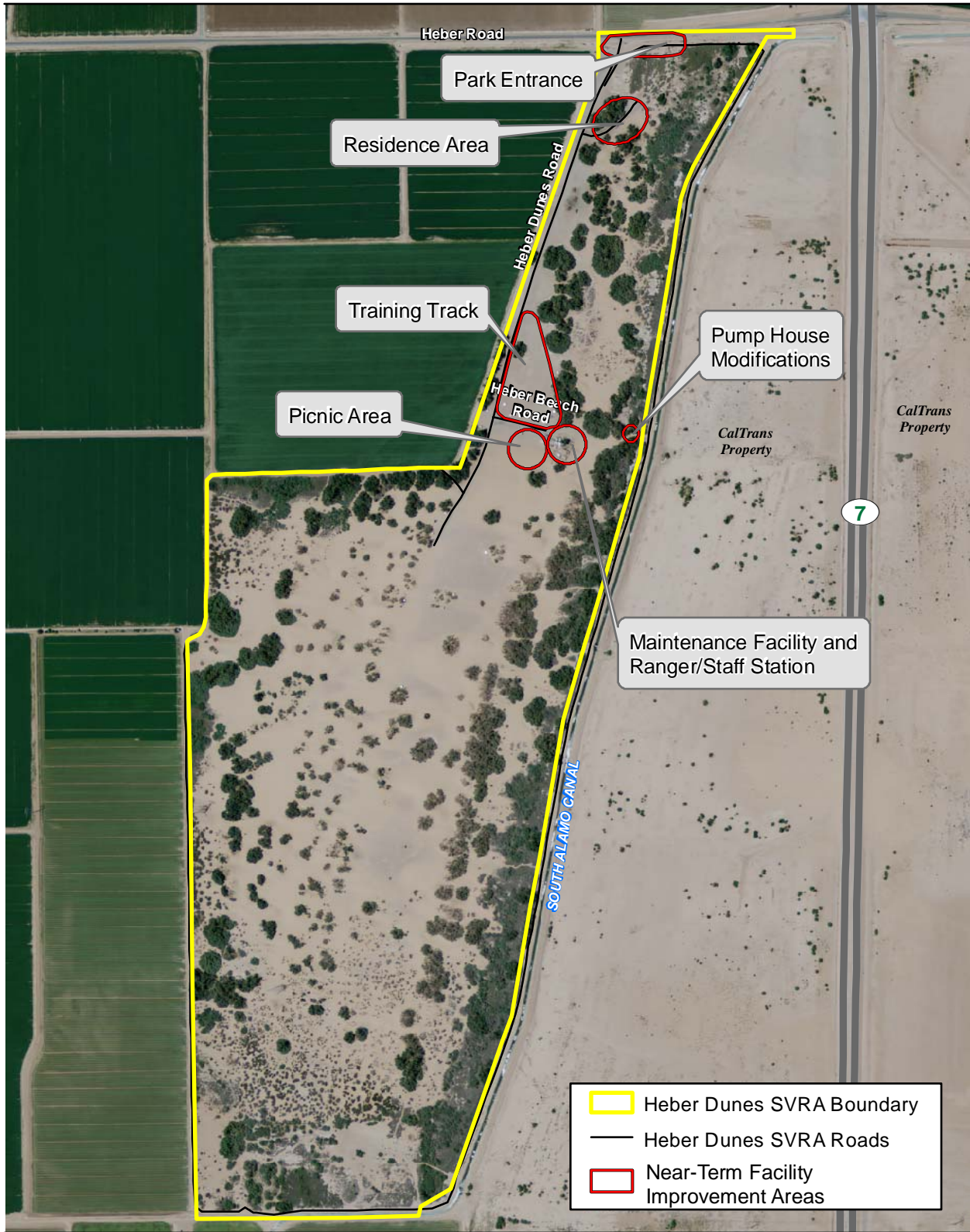
RM Guideline 4: Close secondary trails to promote soil conservation and habitat protection. Closures would target trails that duplicate routes and that are unnecessary for maintenance of the overall OHV recreation experience.

RM Guideline 5: Use identified trails to provide public access while protecting and interpreting resource values. Ensure that identified trails allow users to pass through this area to access the Eastern Recreational Zone and the Dunes Recreational Zone.

RM Guideline 6: Maintain Heber Dunes SVRA signs and other boundary identifiers that clarify the boundaries of the Resource Management Zone to minimize inadvertent OHV activity in this area. Signage should clearly indicate that the closures are intended to help protect the natural resources while still providing adequate access for OHV activities.

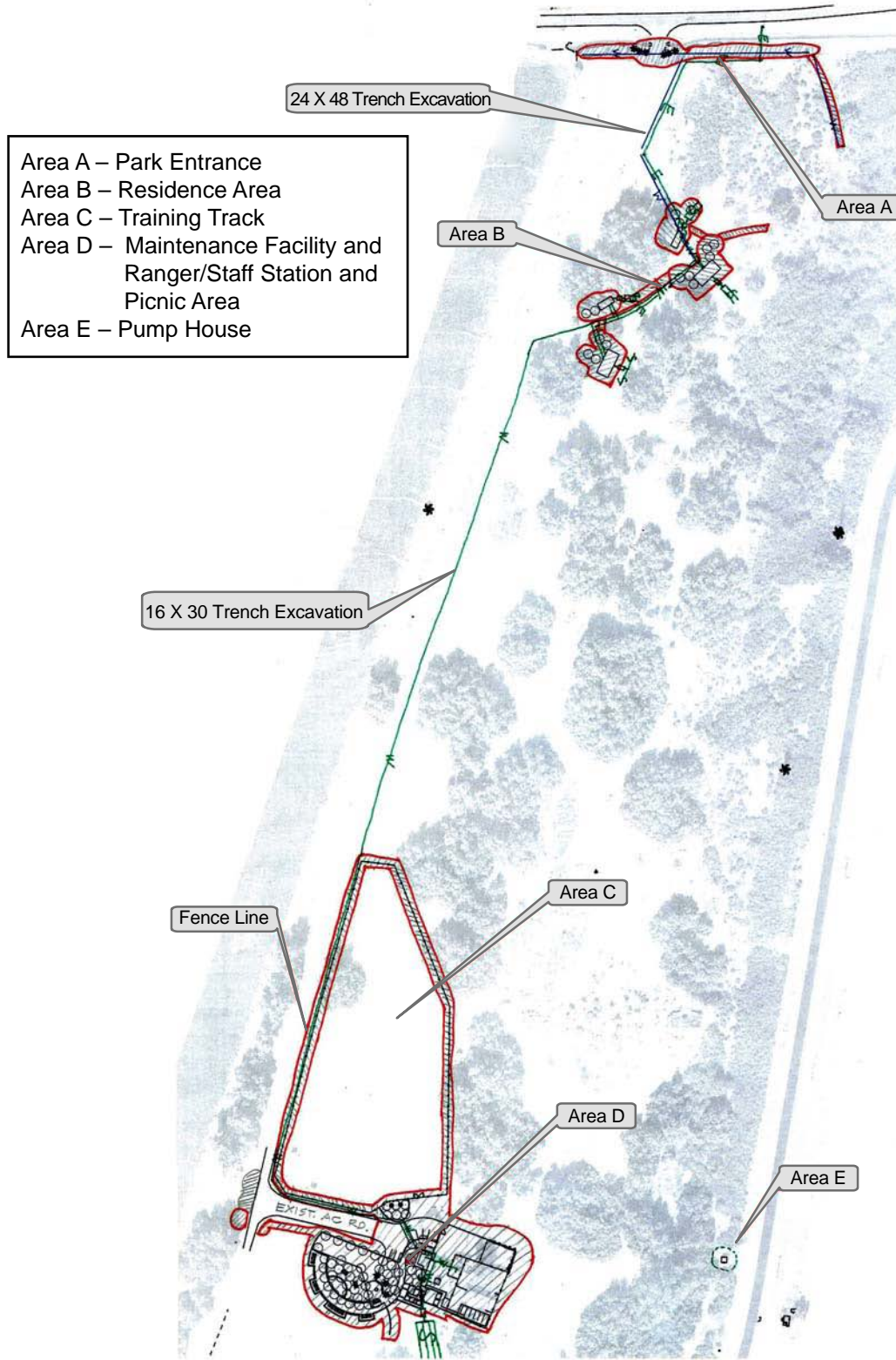
2.6 Proposed Near-Term Facility Improvements

In the near term (within 2 years), there are multiple improvements, referred to as the Heber Dunes SVRA Initial Improvement project proposed to provide basic park facilities related to administration, maintenance operations, and recreation opportunities. As detailed below, proposed near-term facility improvements include an entrance station, staff residence area, maintenance facility and ranger/staff station, fuel station, picnic areas, training track, and associated upgrading of utilities and roadway repaving. Figure 2-6a depicts the location of proposed near-term facility improvements and Figure 2-6b provides general schematic drawings of the improvements. The details of the near-term facility improvements are based on current design concepts for the new facilities. The specific



Path: P:\2007\07080197_10 Heber Dunes\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Figures\EIR\HDSVRA_EIR_Figure2-6a_NearTermFacilityImprovements.mxd, 8/3/2011, SteinB

Figure 2-6a
Near-Term Facility Improvement Areas



Source: California State Parks 2009; NAIP 2009



Not To Scale

Figure 2-6b
Near-Term Facility Improvements Schematic Drawing

details of the near-term facilities could be altered slightly as final designs are completed. While the actual details may be modified according to final design, the descriptions provided below accurately describe the anticipated scale and character of the improvements.

2.6.1 Park Entrance

A new park entrance would be installed along the northern boundary of the site, near the park entry point at the intersection of Heber Dunes Road and West Heber Road, as shown in Figures 2-6a and 2-6b. Landscaping and other appropriate amenities are proposed to create a recognizable entrance and act as a back drop for a new park monument sign, creating awareness and branding for OHMVR Division.

2.6.2 Residence Area

The center of the residence area would be approximately 600 feet south of the entrance and east of Heber Dunes Road, as shown in Figures 2-6a and 2-6b. This area would be the site of one newly constructed residence. The structure would be on a permanent foundation with domestic water, electricity, and telephone infrastructure, and a sewage disposal system equipped with an underground septic tank connecting to a leach field covering an area of 50 by 30 or 100 by 15 feet, depending on area vegetation, with a depth of up to 6 feet. It is anticipated that the residence would include an energy-efficient heating and cooling system and a supplemental photovoltaic solar electric system. There would be three RV pads for temporary use by staff or park hosts. Each of these three RV sites would be equipped with utility pedestals providing domestic water, electricity, and sewer hookups. The RV sites would have their own sewage disposal systems, similar to the residence. The residence area sites would be connected to electricity from an existing overhead primary line located on West Heber Road. The electricity would enter the park property underground and would require a trench to be excavated. The water and irrigation lines would originate from the main administration and maintenance complex to the south. Both irrigation and potable water pipelines would be colocated in a common trench.

2.6.3 Maintenance Facility and Ranger/Staff Station

A proposed maintenance facility and ranger/staff station would provide a building of approximately 3,000 square feet for combined operations, including maintenance, ranger offices, and administration. This facility would be sited in the central portion of the property at the existing maintenance area, located at the eastern end of Heber Beach Road, as shown in Figures 2-6a and 2-6b. Construction of this facility would require the removal of the existing garage and maintenance area. This building would serve as the primary point of contact for the public, with the main reception area being staffed during open

hours. The administration portion of the building would include a reception area, multiple offices, a conference room, restroom, and other typical office features for staff use. The new building would be constructed on a permanent concrete foundation. Foundation excavations would require an over-excavation of the building foot print plus approximately 5 feet outside the actual structure. The depth of the excavation would extend 48 inches below the surface. The over-excavation area would be reinstalled and compacted in preparation of the foundations construction.

The maintenance portion of this building would include a large open interior work area connected to an outside maintenance yard. The existing cyclone fence would be modified to encompass a large maintenance yard that would house freestanding parking shade ramadas, a new self-contained aboveground fuel station, the existing water treatment structures, and abandoned restroom. The area within the maintenance yard would be surfaced with compacted class II base. Energy-efficient heating and cooling systems would be installed for the administration portion of this building. This building would be fitted with a supplemental photovoltaic solar electric system. Existing electricity, water, and telecommunication infrastructure would be modified to service this facility. A new sewage disposal system would require a leach field connected to a septic tank requiring a 12-foot-long by 8-foot-deep excavation. The leach field would cover an area of 100 by 50 feet with a depth of up to 6 feet. A covered parking area for three to four OHMVR Division vehicles would be located near the new facility.

2.6.4 Picnic Area

A proposed picnic area would provide approximately 40 new individual and group picnic facilities equipped with tables, shade ramadas, barbeques, trash receptacles, and landscaping. This picnic area would serve as the main gathering point for Heber Dunes SVRA users and would be in proximity to the proposed ranger/staff station and the proposed training track described below. The picnic area would be located in a vacant space immediately east of Heber Dunes Road and south of Heber Beach Road, as shown in Figures 2-6a and 2-6b. The picnic area would be made up of concrete walkways and walls. The landscape and retaining walls would require footings that range from 24 to 30 inches in width to a maximum depth of 36 inches. Within this area, landscaping with various trees and shrubs would be installed. This installation would require an irrigation drain tile system and excavation down to 6 feet in depth. This planter excavation would allow space for soil amending and area for root structures to grow. The specific layout of planting has not yet been finalized, so for analysis purposes the entire space within the defined area of disturbance is assumed to be cleared for these excavation depths.

2.6.5 Training Track

A proposed training track would be located in a disturbed area immediately east of Heber Dunes Road, on the north side of Heber Beach Road, as shown in Figures 2-6a and 2-6b. The training track would be approximately 300 by 300 square feet and would be fenced for security and management purposes. Track operations require a smooth level surface. The entire area within the defined track area would be graded to create a flat field slightly higher than the surrounding grades. This would require simple surface scarification to loosen the existing soils. These soils would be mechanically moved within the limits of the fenced track area. The existing soils would be comingled with spoils displaced by the other trenching and foundation work. If the required fill material is not generated on-site, additional soil would be imported from off-site. Grade would be raised to the extent that the practice track repels surface water equally to surrounding terrain. The intention is not to substantially raise the track but to prevent ponding during or after rain events. Any imported material would be certified free of nonnative or invasive seed.

The track would be protected by a fence, which would require posts to be installed every 8 feet on center. The type of fencing would be selected to allow for free passage of native species. On the southeast exterior perimeter of the track, a spectator viewing area would be created and may include spectator stands, a large shade ramada, and some plant materials for shade. An irrigation drain system would be installed under the planted area with planting and irrigation occurring within the same area of disturbance.

The training track would be designed for young and novice users to gain experience. The track would include features such as hay bales and restricted vehicle size. The training track would be available for daily use during open hours. The existing modular building located in this area may be converted for use as a classroom and interpretive center.

2.6.6 Pump House Modifications

Some modifications within the pump house area may be necessary. The water pump inside the pump house may need to be upgraded. Ground disturbance within the pump house area is not anticipated at this time but could entail digging trenches for new electrical service or water pipelines.

2.6.7 General Construction Assumptions

The near-term facility improvements would be constructed over approximately 2 years. In the first year, improvement would likely include the construction of the residence, RV pads, asphalt road around residence and RV pads; installation of irrigation, water, drainage, electrical, and telecommunication lines, and installation of four septic systems. Year two of construction would likely include construction of the maintenance facility/ranger station

and associated components, entry area improvements, covered parking areas for OHMVR Division vehicles, resurfacing of Heber Beach Road, training track and spectator area, picnic facilities, and upgrades to pump house; installation of irrigation, water, drainage, electrical, and telecommunication lines; and installation of one septic system.

Over the 2-year construction period for the near-term facility improvements, it is anticipated that, in the first year, approximately 4,300 cubic yards (CY) of soil would be excavated for building pads, utility and drainage lines, and the septic systems. Approximately 1,200 CY of this material would be stockpiled on-site for use in construction of the training track during the second year. During construction, 5 acres of Heber Dunes SVRA are expected to be disturbed. In the second year of construction, approximately 2,700 CY of soil would be excavated for building pads, utility and drainage lines, and the septic systems. Approximately 2,100 CY of material would be needed to elevate the training track as necessary. Any additional material would be used for trail maintenance and repair.

Construction activities would comply with APCD Regulation VIII, Fugitive Dust Rules, to control PM₁₀ fugitive dust emissions. Applicable rules include Rule 800, General Requirements for Control of Fine Particulate Matter (PM-10); Rule 801, Construction and Earthmoving Activities; Rule 803, Carry-Out and Track Out; Rule 804, Open Areas; and Rule 805, Paved and Unpaved Roads. Implementation of these rules is mandatory and would be incorporated into the project as identified below:

- Reduce speed on unpaved roads to less than 15 mph;
- Water exposed surfaces twice daily;
- Apply soil stabilizers to inactive areas;
- Stabilize soil in equipment loading/unloading areas;
- Replace groundcover in disturbed areas quickly; and
- Manage haul road dust by watering twice daily.

2.7 Special Events

With the proposed General Plan and near-term facility improvements, the resulting enhanced and expanded recreation facilities and opportunities, along with improved management and administration at Heber Dunes SVRA, would likely make the site more appealing and popular as a location for special events. Special events held at Heber Dunes SVRA may substantially increase visitation on particular days beyond that normally experienced. Such special events may include, but would not be limited to, OHV promotions or demonstrations, OHV events or races, concerts, community or cultural events and gatherings, sporting events, and receptions. Special events are a way to encourage public uses consistent with the OHMVR Division mission, create and improve community and other constituency ties, and encourage new users to Heber Dunes SVRA.

Generally, an activity would be considered a special event when the following occurs:

- the activity is significantly different from general use,
- participants are charged additional fees beyond regular facility use fees,
- a greater potential hazard or liability to OHMVR Division exists than is incurred through typical daily park activities,
- the event requires exclusive use of an area within Heber Dunes SVRA,
- the event interferes significantly with the public's use of an area,
- additional staffing is needed,
- the activity has a significant impact to the resources, and/or
- the event involves the sale of items or services.

Special events at Heber Dunes SVRA would continue to require a Special Event Permit to be issued by OHMVR Division. Each Special Event Permit would be considered on an individual basis. Goals and guidelines regarding special events are addressed under PO Goal 4 to guide management, operation, and implementation of special events, and measures necessary to appropriately accommodate increased visitation. Potential impacts associated with special events at Heber Dunes SVRA are addressed where necessary under individual topic areas (such as traffic, noise, etc.).

2.8 Program Growth

As described in the *Visitor Projections Methodology for Heber Dunes SVRA EIR* (AECOM 2010), attached as Appendix C, future visitation to Heber Dunes SVRA may be influenced by both regional demographic trends and trends in statewide OHV use. The visitor projections through the end of the planning horizon were developed based on the projected increase in population in Imperial County and historical data on annual visitation to statewide SVRAs in the last 10 years. Using Heber Dunes SVRA visitor data from fiscal year 2006–2007, which represented a very active year with 30,093 annual visitors, the projected visitation for a peak weekend day in 2030 was calculated to be approximately 880 visitors. In recent years, visitation numbers have declined; however, these projections from 2006–2007 were used for analysis purposes to provide a conservative (high) estimate of future visitation.

The increase in statewide SVRA visitation is projected to occur over the next 20 years with or without the proposed project. While the improved facilities at Heber Dunes SVRA would attract more visitors, it is likely that the project is not creating “new” OHV users, but would theoretically accommodate recreationalists who would visit other SVRAs or operate OHVs

in nondesignated use areas in the county in the absence of the project. The enhancement of recreation opportunities at Heber Dunes SVRA would likely attract visitors who might otherwise visit other OHV recreational areas in Imperial County, such as Ocotillo Wells SVRA, Superstition Mountain OHV Open Area, Plaster City OHV Open Area, and Imperial Sand Dunes Recreation Area.

Heber Dunes SVRA presents a somewhat unique situation as it draws visitors mainly from the local communities. Furthermore, the proposed project does not provide a new or altered land use in addition to the current recreation opportunities on-site. However, since the General Plan provides the first formal planning opportunity for the SVRA and, in an effort to present a complete depiction of future conditions, the analysis within ~~the DEIR~~ [this FEIR](#) considers impacts from increases in park visitation caused by all regional and OHV recreational growth anticipated by year 2030, rather than that portion considered solely attributable to the proposed project. This provides for a very conservative analysis of potential environmental impacts.

Chapter 3.0 – Environmental Analysis

Chapter 3 provides a detailed analysis of the issue areas that would have a potential to create significant environmental effects if the proposed General Plan or near-term facility improvements were implemented. Each issue analysis includes the following sections:

- **Existing Conditions** – This section describes the existing conditions with regard to the environmental issue being analyzed.
- **Thresholds of Significance** – Thresholds for analysis are independently determined based on the specific context of each park within the regional context and setting. This section presents the guidelines used to identify how an impact is to be judged for each issue area in this ~~DEIR~~-FEIR specific to Heber Dunes SVRA.
- **Environmental Evaluation** – This section presents the analysis of each specific environmental issue area and identifies any potentially significant environmental impacts that would result or explains why an impact would not occur.
- **Summary of Significant Impacts** – Potentially significant impacts identified in the Environmental Evaluation area are summarized in this section.
- **Mitigation Measures** – This section identifies mitigation measures that would be required to mitigate each impact found to be significant.

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3.1 Land Use and Public Policy

The following section includes a description of the existing land uses on and around Heber Dunes SVRA, as well as the public policies that regulate land use. An analysis of the conformance of the proposed General Plan and near-term improvement projects proposed under the General Plan is also provided.

3.1.1 Existing Setting

On-Site Land Uses

Heber Dunes SVRA is composed of approximately 340 acres and is largely undeveloped with limited infrastructure and improvements within unincorporated Imperial County. The majority of Heber Dunes SVRA is composed of sand dunes and natural vegetation, with a network of established trails and a perimeter road. Desert vegetation is scattered throughout the site, mostly along the perimeter and consists primarily of nonnative tamarisk trees and native creosote brush and saltbrush scrub.

The majority of facilities at Heber Dunes SVRA are clustered in a centralized location off Heber Dune Road in the north-central portion of the property. A public restroom/shower facility is located in this area. An old restroom facility now serves as a storage area. This area also includes a permanent residence for Heber Dunes SVRA staff and a staff office. Other uses in this central area include a storage yard for OHMVR Division materials and a maintenance shop for equipment and vehicles. Immediately south of these improvements are approximately 15 scattered picnic shelters with trash cans and fire pits that often serve as the main congregating point for park users.

A Heber Dunes SVRA camp host area is located near the northern boundary of the site off Heber Dunes Road. The Heber Dunes SVRA camp hosts live on-site in an RV during the fall, winter, and spring, which coincide with the period of highest visitor use.

There are multiple rights-of-way and easements that cross the site boundaries related to power transmission and irrigation canal access. Three SDG&E transmission towers bisect the southwest corner of Heber Dunes SVRA and carry high-voltage 500-kilovolt overhead electric lines across the site. This line was built in 1984 and has been designated a Western Electric Corridor. SDG&E has a 200-foot-wide easement that runs with the electric line through the property (see Figure 2-4).

Surrounding Land Uses

Heber Dunes SVRA is immediately surrounded by large parcels of land used for intensive irrigated agricultural field production. The primary crop grown adjacent to the site is

alfalfa, with other crops rotated systematically through. A system of canals managed by the Imperial Irrigation District (IID) provides irrigation water for the cropland.

There are approximately five residential home sites located within 0.5 mile north and northwest of the project site along King Road. Cropland continues to the north, with agricultural land use dominating the area, extending north to the city of Holtville. I-8 is located approximately 3 miles north of Heber Dunes SVRA.

The South Alamo Canal forms most of the southern and eastern boundaries of Heber Dunes SVRA. The canal traverses north and south along the entire eastern site boundary and forms a portion of the southern boundary (Photo 3.1-1). Immediately east of and adjacent to the canal is a 306-acre undeveloped parcel of land, previously used for agriculture, that was purchased by the California Department of Transportation (Caltrans) for mitigation purposes associated with previous improvements to SR-7 (Photo 3.1-2). SR-7, located less than 0.5 mile east of the park, roughly parallels the Heber Dunes SVRA eastern boundary. An additional 350 acres of Caltrans-owned land is located east of SR-7. These parcels are designated for heavy agricultural purposes by Imperial County, though they are not presently cultivated or irrigated. SR-7 provides the main regional access to the site. SR-7 connects with I-8 to the north and the U.S. border with Mexico to the south.



Photo 3.1-1. Adjacent agricultural uses to the south, South Alamo Canal, and perimeter road, looking west.



Photo 3.1-2. Caltrans parcel with Heber Dunes SVRA in distance.

The U.S. border with Mexico and the Calexico East border crossing are located approximately 2.5 miles south of Heber Dunes SVRA. SR-7 travels south past the east side of the project site and eventually ends at the Calexico East border crossing. This crossing accommodates most of the commercial trucking operations driving across the border in the region. There are multiple commercial trucking, warehousing, and storage operations located on the north side of the border in Calexico. The nearest residential developments to the south are generally located along SR-98, approximately 1 mile south of the project site.

Agricultural cropland is the primary land use immediately west of the project site, and cropland continues for many miles west. Residential homes are scattered to the west, with the nearest located less than 0.5 mile from the project site along Claverie Road. The Ash Canal runs in a generally north and south alignment approximately 0.5 mile west of Heber Dunes SVRA.

Regulatory Setting

The following local and regional plans will have an influence on the management, operations, and visitor experiences at Heber Dunes SVRA.

California State Parks

The Heber Dunes project site is classified as an SVRA. Policies pertaining to an SVRA are outlined in California PRC 5090.43:

(a) State vehicular recreation areas shall be established on lands where there are quality recreational opportunities for off-highway motor vehicles and in accordance with the requirements of Section 5090.35. Areas shall be developed, managed, and operated for the purpose of making the fullest public use of the outdoor recreational opportunities present. The natural and cultural elements of the environment may be managed or modified to enhance the recreational experience consistent with the requirements of Section 5090.35.

(b) Lands for state vehicular recreation areas shall be selected for acquisition so as to minimize the need for establishing sensitive areas.

(c) After January 1, 1988, no new cultural or natural preserves or state wildernesses shall be established within state vehicular recreation areas. To protect natural and cultural values, sensitive areas within state vehicular recreation areas may be designated by the division if the Off-Highway Motor Vehicle Recreation Commission holds a public hearing and makes a recommendation therefore. These sensitive areas shall be managed by the division in accordance with Sections 5019.71 and 5019.74, which define the purpose and management of natural and cultural preserves.

If off-highway motor vehicle use results in damage to any natural or cultural resources, appropriate measures will be taken to protect these lands from any further damage. These measures may include the erection of physical barriers and will include the restoration of natural resources and the repair of damage to cultural resources.

CSP prepares general plans for their park facilities. A general plan directs the long-range development and management of a park by providing broad policy and program guidance. A California State Park must have an approved general plan before any major park facilities can be developed. Currently, there is no general plan for Heber Dunes SVRA. This [DEIR](#) [FEIR](#) evaluates the potential environmental impacts from implementation of the proposed General Plan for the park.

Imperial County General Plan

The Imperial County General Plan presents a comprehensive guide for development within Imperial County and provides mechanisms to achieve desired community goals and objectives through a coordinated implementation program. Land use decisions such as area plans, zonings, subdivisions, and public agency projects must be consistent with the General Plan. While the General Plan does not directly apply to state-controlled properties, it does directly affect the surrounding land uses and, therefore, the land use context of

Heber Dunes SVRA. For planning purposes, reviewing the Imperial County land use provisions provides guidance on the County's vision of the Heber Dunes SVRA site within the surrounding community context. The General Plan includes elements that guide various facets of growth and development within Imperial County. The elements most applicable to the Heber Dunes SVRA planning process include Land Use, Parks and Recreation, and Conservation and Open Space.

The Land Use Element describes where different types of land uses may be established in the unincorporated areas of Imperial County (Imperial County 2008a). Most of the surrounding land is designated as Agriculture by Imperial County (see Figure 3.1-1). The nearest land use designation other than Agriculture is the Gateway Specific Plan Area, which is located 1 mile south at SR-98. The Gateway Specific Plan is addressed below.

The Parks and Recreation Element establishes a framework for the stewardship and development of Imperial County parks and other recreational amenities that enhance the quality of life for Imperial County residents and visitors (Imperial County 2008b). This element focuses on community - and neighborhood-type parks and does not provide policies or goals for the development of OHV recreation areas. County parks and recreation facilities are intended to serve as wide a range of interests as possible. Emphasis is placed on family-oriented opportunities and those that encourage visitor use. The Parks and Recreation Element includes a goal of providing 5 net acres of parkland for every 1,000 residents, and states that, by 2020, about 93 more acres of parks will be needed and, by 2030, an estimated 187 additional acres of parkland will be needed solely to serve residents within the unincorporated areas of Imperial County (Imperial County 2008b).

The Conservation and Open Space Element identifies goals and policies to ensure the managed use of environmental resources. The goals of this element also include protecting open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety. The goals and policies are also designed to prevent limiting the range of resources available to future generations.

Imperial County Zoning

The Imperial County Zoning Ordinance presents a comprehensive guide for development within Imperial County and provides mechanisms to achieve desired community goals and objectives through a coordinated implementation program. While the Zoning Ordinance does not directly apply to state-controlled properties, it does directly affect the surrounding land uses and, therefore, the overall context of Heber Dunes SVRA. For planning purposes, reviewing the Imperial County zoning designations provides guidance on the County's vision for use of the Heber Dunes SVRA site within the surrounding community context.

Heber Dunes SVRA is zoned as Government/Special Public Zone (G/S) by Imperial County (see Figure 3.1-2). The purpose of the G/S zone is to designate areas that allow for the construction, development, and operation of governmental facilities and special public facilities. Primarily, this zone allows for all types of government-owned and/or government-operated facilities, including office or other uses. It also allows for special public uses.

The surrounding parcels are zoned for agricultural use as either General Agriculture (A2) or Heavy Agriculture (A3). The A2 zoning designation requires a lot size of 40 acres or greater, with the intent to designate areas that are suitable and intended primarily for agricultural uses (limited) and agriculture-related compatible uses. The A3 zone also requires parcels of 40 acres or more with the purpose to promote the heaviest of agricultural uses in the most suitable land areas of Imperial County. Uses in the A3 zoning designation are limited primarily to agriculture-related uses and agricultural activities that are compatible with agricultural uses (Imperial County 2008c).

Gateway Specific Plan

The Gateway planning area is composed of approximately 1,775 gross acres of land in Imperial County, adjacent to the international border with Mexico and about 6 miles east of the city of Calexico, as shown in Figure 2-2. The Gateway planning area is roughly bounded by the international border to the south, the Alamo River to the east, the Ash Canal to the west, and a line approximately 0.25 mile north of and parallel to SR-98 to the north. The northern boundary of the Gateway planning area is located approximately 0.75 mile south of Heber Dunes SVRA.

The Gateway planning area is proposed as a master-planned commercial and industrial complex designed to capitalize on the economic benefits of the adjacent international port-of-entry. The planned development consists of facilities for manufacturing, wholesaling, distribution, and assembly, plus related supporting transportation infrastructure and services such as retail. Of the 1,775 gross acres within the planning area, 1,420.6 net acres are considered developable. The majority of the Gateway planning area is zoned as Gateway Commercial and Gateway Industrial, with some Government/Special Public zoning in the southern portion of the planning area (see Figure 2-2).

While Heber Dunes SVRA is not included within the Gateway planning area, the intensive level of development proposed for the area may create development pressure on properties surrounding Heber Dunes SVRA.

Other Regional Plans and Organizations

Imperial County

Imperial County offers public services such as police and fire response to Heber Dunes SVRA and provides oversight on regional issues such as transportation and circulation, land use planning, and development services.

Imperial County Farm Bureau

Imperial County Farm Bureau is a nongovernmental, nonprofit, voluntary membership organization whose purpose is to protect and promote agricultural interests in Imperial County, as well as the state and nation, through public relations, education, and advocacy to support the economic advancement of agriculture balanced with appropriate management of natural resources. Heber Dunes SVRA is surrounded by agriculture; thus, understanding agricultural interests in the region is important in relation to development of the General Plan.

Imperial Valley Vegetable Growers Association

Imperial Valley Vegetable Growers Association is a nonprofit, member-driven organization dedicated to maintaining and improving the viability of the produce industry. The organization is actively involved in issues such as labor, water transfer, environmental protection and public education. The prominence of agriculture surrounding Heber Dunes SVRA is important in understanding the surrounding context of the region.

Imperial County Air Pollution Control District

The Imperial County Air Pollution Control District (APCD) is the agency responsible for protecting the public health and welfare through the administration of federal and state air quality laws and policies. Included in APCD's tasks are monitoring air pollution, preparing the Imperial County portion of the State Implementation Plan (SIP), and promulgating rules and regulations. The SIP is an enforceable plan developed by the State of California to set forth how the state will comply with air quality standards according to the federal Clean Air Act. The SIP includes strategies and tactics to attain and maintain acceptable air quality. APCD shares responsibility with the California Air Resources Board (ARB) for ensuring that all state and federal ambient air quality standards are achieved and maintained within Imperial County. APCD is responsible for monitoring ambient air quality and has authority to regulate stationary sources and some area sources of emissions. APCD is responsible for developing the overall attainment strategy for Imperial County and, therefore, is responsible for planning activities involving the development of emission inventories,

modeling of air pollution, and quantification and comparison of emission-reduction strategies.

Heber Dunes SVRA is within the APCD region and will be affected by any plans or regulations related to air quality. Particulate Matter (PM₁₀) continues to be a critical air quality issue in the Salton Sea Air Basin (SSAB) and continuing changes and updates to associated policies and regulations are anticipated in the future.

Southern California Association of Governments

Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The 2008 Regional Comprehensive Plan (RCP) addresses issues of regional growth (SCAG 2008a). The chapter on air quality contains goals that are particularly applicable to the proposed General Plan. These goals include reducing emissions of criteria pollutants to attain federal and state air quality standards, reversing current trends in greenhouse gas emissions, and minimizing land uses that increase the risk of adverse air-pollution-related health impacts from exposure to air contaminants, particulates (PM₁₀, Fine Particles (PM_{2.5}), ultrafine), and carbon monoxide (see Section 3.3, Air Quality, for specific air quality discussion).

3.1.2 Thresholds of Significance

The Heber Dunes SVRA General Plan project would have significant environmental impacts related to land use and planning policy issues if it would exceed the following CEQA thresholds established in CEQA Appendix G:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.1.3 Environmental Evaluation

General Plan Analysis

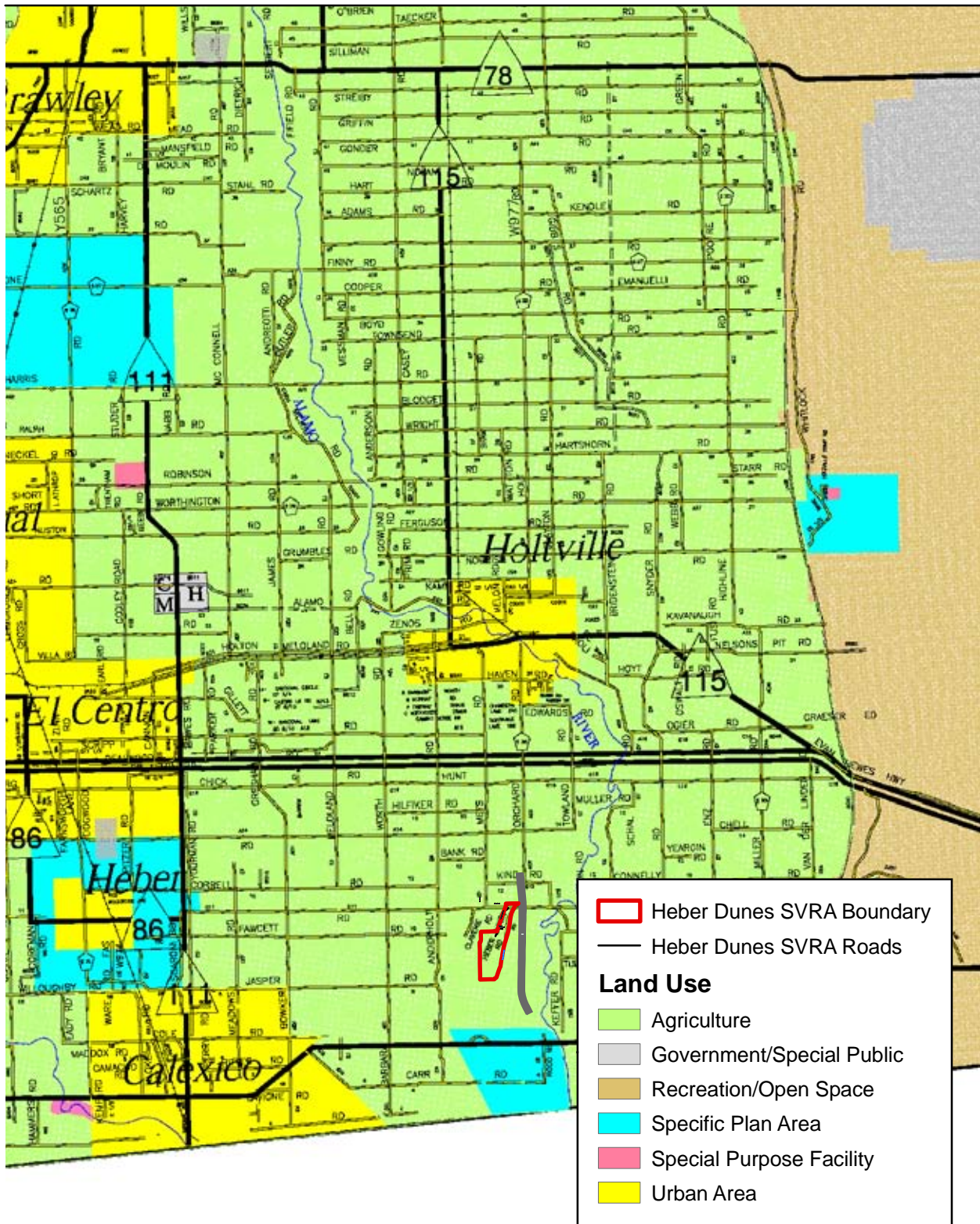
As noted above, Imperial County planning documents do not directly apply to Heber Dunes SVRA but are considered in this analysis for land use context and compatibility. Figure

3.1-1 identifies Imperial County General Plan land use designations for the area around Heber Dunes SVRA. Heber Dunes SVRA, as well as most surrounding land, is designated as Agriculture by Imperial County. The nearest land use designation other than Agriculture is the Gateway Specific Plan Area, located 1 mile south at SR-98.

Figure 3.1-2 depicts the zoning designations for Heber Dunes SVRA and surrounding parcels. Heber Dunes SVRA is zoned as G/S by Imperial County (Imperial County 1998a). The purpose of the G/S zone is to designate areas that allow for the construction, development, and operation of governmental facilities and special public facilities. Primarily, this zone allows for all types of government-owned and/or government-operated facilities, including office or other uses. It also allows for special public uses (Imperial County 1998b). The surrounding parcels are zoned for agricultural use as either General Agriculture (A2) or Heavy Agriculture (A3) (Imperial County 1998a). The A2 zoning designation requires a lot size of 40 acres or greater with the intent to designate areas that are suitable and intended primarily for agricultural uses (limited) and agriculture-related compatible uses. The A3 zone also requires parcels of 40 acres or more with the purpose to promote the heaviest of agricultural uses in the most suitable land areas of Imperial County. Uses in the A3 zoning designation are limited primarily to agriculture-related uses and agricultural activities that are compatible with agricultural uses (Imperial County 1998b).

While Heber Dunes SVRA is a unique land use within the context of adjacent agricultural land uses, it is considered compatible with those uses surrounding it. This is largely because surrounding land is generally cropland with very few sensitive uses nearby (i.e., residential, commercial, or other urban uses) that could be affected by noise, dust, or traffic associated with activities at Heber Dunes SVRA. Noise and dust are also common with agricultural operations when farm equipment is operating in the fields. Heber Dunes SVRA currently operates without significant conflict with the surrounding agricultural operations. The above described Imperial County land use designations and zoning indicate that there are no future plans to locate potentially sensitive development, such as residential uses, near Heber Dunes SVRA.

The Gateway planning area is currently under development with industrial and commercial uses, capitalizing on the nearby international port-of-entry. This planned development will introduce a substantial industrial land use to the surrounding rural agricultural area. The development of the Gateway planning area, approximately 0.75 mile south, would not conflict with the use of Heber Dunes SVRA, as the largely industrial nature of the new development would not be considered sensitive to potential off-site effects of noise and dust.



Path: P:\2007\07080197.10 Heber Dunes\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Figures\EIR HDSVRA_EIR_Figures3.1-1_Land Use Designations.mxd, 12/17/10, Sheet82

Source: California State Parks 2009; Imperial County 2009

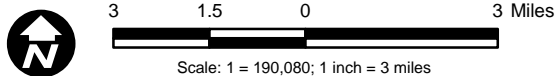
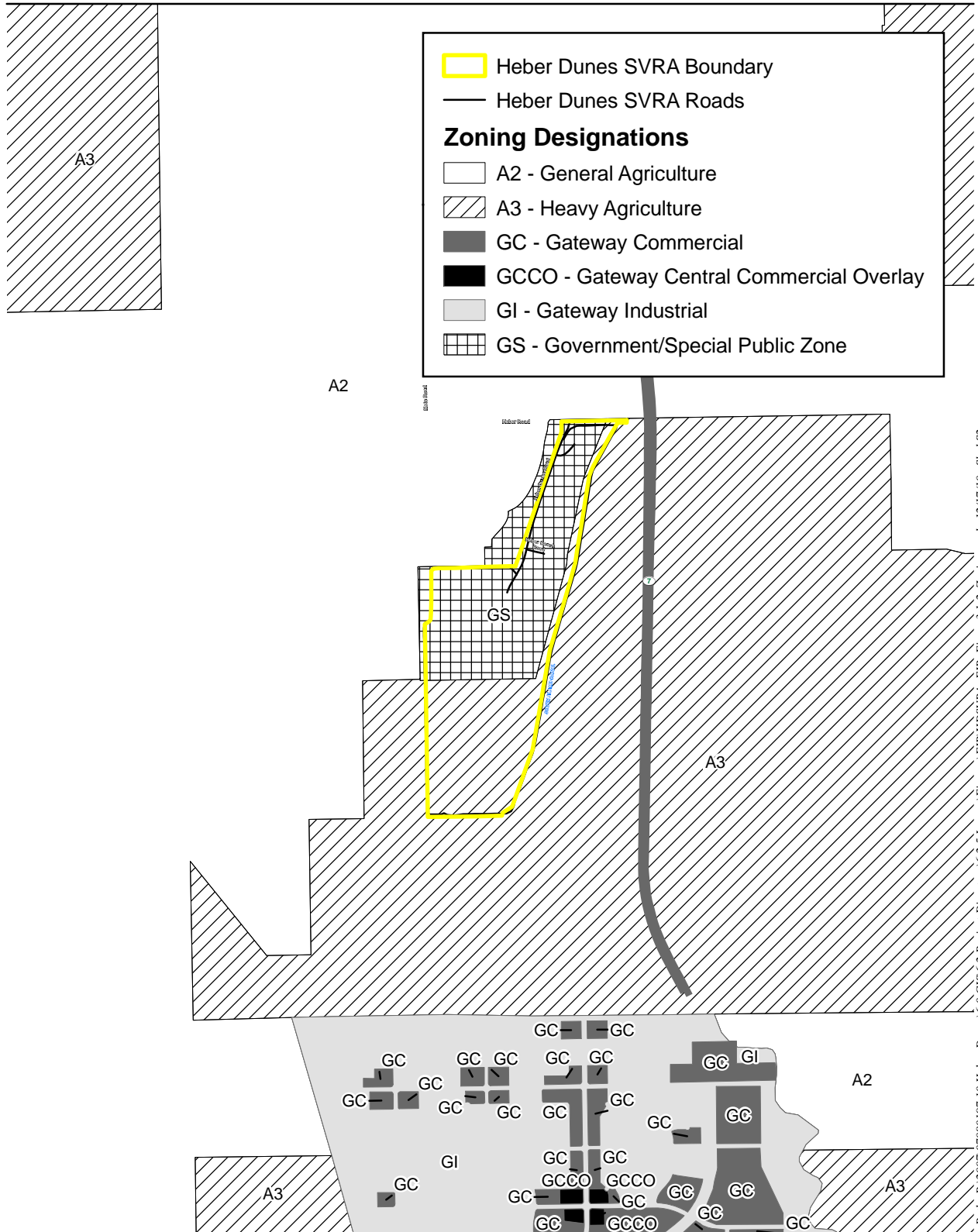


Figure 3.1-1
Land Use Designations



Path: P:\2007\07080197.10 Heber Dunes\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Figures\EIR\HDSVRA_EIR_Figures3.1-2_Zoning.mxd, 12/17/10, Shoh52

Source: California State Parks 2009; Imperial County 2009



3,000 1,500 0 3,000 Feet



Scale: 1 = 36,000; 1 inch = 3,000 feet

**Figure 3.1-2
Zoning Designations**

Because of the distance to sensitive receptors, current operations and the continued operation of Heber Dunes SVRA under the proposed General Plan would be consistent and compatible with the surrounding land uses. No community would be physically divided by the continued operation of Heber Dunes SVRA and *less-than-significant* impacts would result.

Development within Heber Dunes SVRA is regulated by CSP land use guidelines and regulations (as described above) and those within the proposed General Plan. Goals and guidelines that apply to the site have been developed to address existing issues and to provide ongoing guidance to management that can be implemented to achieve the long-term vision for Heber Dunes SVRA. Planning Zones for the proposed Heber Dunes SVRA General Plan have been developed to allow for specialized management by area. These Planning Zones were developed through consideration of a variety of factors, including geographic relationships, resource values, ecological parameters, management issues and goals, types and intensities of land use, and visitor use and experience.

Additionally, regional plans such as the RCP, SIP, or 2008 Regional Transportation Plan (RTP) do not necessarily provide specific strategies that could be implemented at Heber Dunes SVRA. However, it is important to be cognizant of the goals these documents set for issues such as air quality, transportation, and conservation, and how OHV use at Heber Dunes SVRA relates to those goals.

Based on the above analysis, Heber Dunes SVRA would continue to be compatible with surrounding residential, commercial, and agricultural land uses by implementing the proposed General Plan. The proposed General Plan would be consistent with CSP guidelines. Implementation of the proposed General Plan would not conflict with any applicable land use plan, policy, or regulations. Therefore, impacts to land use and public policies would be *less-than-significant*.

There is no habitat conservation plan or natural community conservation plan that applies to Heber Dunes SVRA: thus, *no impact* would result regarding potential conflict with types of conservation plans.

Near-Term Facility Improvements Analysis

The near-term improvements of Heber Dunes SVRA facilities are located within its existing boundary and would follow the goals and policies of the proposed General Plan and applicable CSP policies. The proposed near-term facility improvements would not change the existing general use of the park for OHV activity and social gathering, but would, rather, enhance those recreation opportunities and improve the on-site maintenance and administration operations. For those reasons, the near-term facility improvement impacts to land use, including the division of an establish community, conflicts with applicable

plans and policies of an agency with jurisdiction over the project, or conflicts with applicable habitat conservation plans would be *less-than-significant*.

3.1.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to land use compatibility or consistency. Implementation of the near-term facility improvements would not result in significant impacts related to land use issues.

3.1.5 Mitigation Measures

No significant impacts to land-use-related issues would result with implementation of the proposed General Plan, and no mitigation is required. No significant impacts to land-use-related issues would result from the near-term facility improvements, and no mitigation is required.

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3.2 Transportation and Traffic

The following section includes a description of the existing traffic and circulation conditions around Heber Dunes SVRA. An analysis of the traffic and circulation issues that could result from the proposed General Plan and near-term facility improvements is provided. The information contained in this section is based on the Traffic Impact Study prepared for the project (Fehr & Peers 2009, 2010). The Traffic Impact Study is provided in Appendix B.

3.2.1 Existing Setting

Study Area

The study area for traffic consideration is generally formed by I-8 to the north, SR-111 to the west, SR-7 to the east, and SR-98 to the south. Because Heber Dunes SVRA is located in a rural farming area, the intersections within the vicinity are widely spaced.

The intersections analyzed are the following:

- Heber Road/SR-7
- Heber Road/Heber Dunes Road (SVRA entrance)
- Heber Road/Mets Road

Regional Access

I-8 is the primary east and west route through Imperial County between San Diego and Yuma, Arizona. It is constructed with two travel lanes in each direction with complete grade separation at all intersections.

SR-111 is a north and south highway that begins at the international border at Calexico and provides four lanes of divided travel northbound to SR-78, where it terminates and picks up again approximately 1.7 miles to the west. SR-111 continues north providing connection to Brawley and Calipatria, following the eastern border of Salton Sea to Riverside County, and connecting with I-10 in the city of Indio.

SR-7 is another north and south highway that begins at the international border and extends north to I-8 where it becomes Holtville Orchard Road. The roadway has two travel lanes in each direction and is divided by a 70-foot-wide dirt median.

SR-98 is an east and west facility diverting from I-8 near the community of Ocotillo, traveling in a southeast direction through Calexico, and connecting back with I-8 near the Algodones Sand Dunes. The majority of SR-98 provides two lanes of undivided travel,

except a portion of the roadway through Calexico where the roadway provides four lanes of travel.

Mets Road is a 24-foot-wide north and south roadway that provides two lanes of travel and is considered a local road. It runs from Heber Road at the southern end to Evan Hewes Highway to the north. A stop sign controls Mets Road at Heber Road.

Heber Road, an east and west roadway, has its western terminus at La Brucherie Road. As it extends easterly, Heber Road connects with SR-86 at the western edge of the city of Heber. It continues easterly and terminates at Vencil Road. Heber Road is a 24-foot-wide roadway that provides two lanes of undivided travel. This roadway is unimproved (no curb or gutters) with 10-foot-wide dirt shoulders. Bike lanes or bus stops are not provided and the speed limit is posted at 55 miles per hour (mph). Curbside parking is prohibited along both sides of the roadway. Heber Road is controlled with a two-way stop sign at SR-7.

On-Site Circulation

Access into Heber Dunes SVRA is approximately 0.5 mile west of the intersection of SR-7 and Heber Road. The entry point, on the south side of Heber Road at Heber Dunes Road, is marked with CSP signage and is stop sign controlled. A secondary emergency access road is located approximately 565 feet west of the intersection of SR-7 and Heber Road and is also restricted to access by a locked gate. The secondary emergency access road provides entry to a dirt road that parallels the canal on the eastern boundary of the site.

Heber Dunes Road is a north and south roadway that provides two lanes of travel into Heber Dunes SVRA. This main internal roadway runs along the western boundary of the site. It provides approximately 0.7 mile of paved two-lane travel into Heber Dunes SVRA. There is a posted speed limit of 15 mph. The roadway is unimproved with no curb or gutters. There is signage along the roadway giving instructions and rules. A gate is located on Heber Dunes Road at Heber Road to restrict vehicles from entering the park after hours. Heber Dunes Road is controlled by a stop sign at Heber Road.

There are no designated parking or staging areas within Heber Dunes SVRA. Visitors park their vehicles and unload their OHVs where they choose. Often, visitors arrive in groups and cluster their vehicles together near a picnic shelter or other location that serves as their gathering point.

Throughout Heber Dunes SVRA, there is a complex network of trails and open space areas. The on-site trails are not considered in this traffic analysis as they are used for OHV recreation purposes and are not intended for regular street vehicle use.

Existing Operations

Intersection turning movement counts were conducted in February 2009 during the AM (7:00 a.m. to 10:00 a.m.) and PM (3:00 p.m. to 7:00 p.m.) weekday peak periods and on Sunday from 2:30 to 9:30 p.m., as Sunday afternoons are typically the heaviest usage time of the facility. Additionally, daily traffic counts were conducted on the roadway segment of Heber Road between SR-7 and Mets Road. The 24-hour directional counts were conducted over a 3-day holiday weekend period, including Friday, Saturday, and Sunday, in February 2009. The counts were taken over a busy holiday weekend to provide a high, conservative traffic volume for analysis.

Intersections

Table 3.2-1 shows the existing level of service (LOS) for the AM and PM weekday peak hours and Table 3.2-2 provides the existing intersection operations for the weekend peak hours. As indicated in the tables, all study area intersections currently operate at LOS A or B.

TABLE 3.2-1. EXISTING WEEKDAY INTERSECTION OPERATION

Intersection	Control	AM Peak		PM Peak	
		Delay (seconds)	LOS	Delay (seconds)	LOS
Heber Road/SR-7	unsignalized	10.0	B	10.3	B
Heber Road/Heber Dunes Road (SVRA entrance)	unsignalized	8.5	A	8.9	A
Heber Road/Mets Road	unsignalized	8.8	A	8.6	A

Source: Fehr & Peers 2009

TABLE 3.2-2. EXISTING WEEKEND INTERSECTION OPERATION

Intersection	Control	AM Peak		PM Peak	
		Delay (seconds)	LOS	Delay (seconds)	LOS
Heber Road/SR-7	unsignalized	10.0	B	10.3	B
Heber Road/Heber Dunes Road (SVRA entrance)	unsignalized	8.5	A	8.9	A
Heber Road/Mets Road	unsignalized	8.8	A	8.6	A

Source: Fehr & Peers 2009

Street Segments

Table 3.2-3 presents the existing average daily trips (ADT) and calculated LOS for the road segment of Heber Road adjacent to the Heber Dunes SVRA entrance over a 3-day weekend period.

TABLE 3.2-3. EXISTING WEEKEND ROADWAY SEGMENT OPERATION

Street Segment	Date	Traffic Volume	LOS
Heber Road (SR-7 to Heber Dunes Road)	Friday, February 20, 2009	1,129	A
	Saturday, February 21, 2009	807	A
	Sunday, February 22, 2009	527	A

Source: Fehr & Peers 2009

Regulatory Setting

Multiple transportation planning documents apply to the Heber Dunes SVRA area and nearby transportation facilities. The following briefly describes a few of these documents and plans.

Imperial County General Plan Circulation and Scenic Highway Element

The Circulation and Scenic Highway Element of the Imperial County General Plan is intended to provide a comprehensive document that contains the latest information about the transportation needs of the County and the various modes available to meet these needs. It is also intended to provide a plan to accommodate a pattern of concentrated and coordinated growth, providing both regional and local linkage systems between unique communities and neighboring metropolitan regions (Imperial County 2008d). The element also provides roadway standards, classifications, and goals for acceptable operating conditions and levels of service.

Southern California Association of Governments Plans and Programs

The RCP recommends ways to redirect the region’s growth to minimize congestion and better protect the environment. While SCAG has no authority to mandate implementation of its RCP, some of the principal goals (such as improved jobs/housing balance) are being implemented through county and city general plans.

The SCAG 2008 RTP is a long-term transportation plan that addresses transportation issues in six southern California counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The 2008 RTP presents the transportation vision for this region through the year 2035 and provides a long-term investment framework for addressing the

region's transportation and related challenges. The RTP is the culmination of a multiyear effort focusing on maintaining and improving the transportation system through a balanced approach that considers system preservation, system operation and management, improved coordination between land use decisions and transportation investments, and strategic expansion of the system to accommodate future growth. The RTP is linked to the RCP and, because SCAG has authority over a significant amount of transportation funding, it also has some control over the implementation of transportation-related projects (SCAG 2008b). Heber Dunes SVRA is within the SCAG region and will be affected by any plans related to the highway system; however, no new transit services or highway projects are proposed in the 2008 RTP that would directly affect circulation around Heber Dunes SVRA.

2007 Imperial County Transportation Plan Highway Element

The 2007 Imperial County Transportation Plan Highway Element includes near-term, mid-term, and long-term transportation priorities and projects on Imperial County's Highway Network that were developed through a comprehensive and cooperative planning approach between the Imperial County Association of Governments, SCAG, cities and the Imperial County, Caltrans, and other public and private stakeholders. According to the 2007 Imperial County Transportation Plan Highway Element, future improvements for the near term (2007 to 2015), midterm (2015 to 2025), and long term (2025 and beyond) are anticipated in the project area, though these projects may not necessarily be funded at this time. Near-term projects include the following:

- Widening SR-98 from SR-111 to SR-7 from two to four lanes
- Widening SR-111 from two to four lanes
- Widening Jasper Road to become a six-lane expressway
- Constructing SR-115 to connect with I-8

Mid- and long-term projects include improving the Bowker Road interchange with I-8 and the construction of a new interchange on SR-7 (just northeast of Heber Dunes SVRA) to access a future planned private airport, respectively.

3.2.2 Thresholds of Significance

The proposed General Plan project would have significant environmental impacts related to traffic and circulation if it would result in any of the following:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and nonmotorized travel, and relevant components of the circulation system, including intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. The

Imperial County Circulation and Scenic Highway Element of the General Plan defines LOS C as the acceptable LOS standard during the AM and PM peak periods for all arterial and street segments and for all intersections (Imperial County 2008d).

- Conflict with an applicable congestion management program, including LOS standards and travel demand measures or other standards established by the County congestion management agency for designated roads or highways.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.2.3 Environmental Analysis

Operating Standards

Imperial County’s goal, as defined in the Circulation and Scenic Highway Element, for an acceptable LOS standard during the AM and PM peak periods is LOS C for all arterial and street segments and LOS C for all intersections. Table 3.2-4 describes the operating conditions that correspond with unsignalized intersection delay and associated LOS.

TABLE 3.2-4. UNSIGNALIZED INTERSECTION LOS CRITERIA DESCRIPTIONS

LOS	Description	Average Control per Vehicle (seconds)
A	Little or no delays	less than 10.0
B	Short delays	10.0 to 15.0
C	Average delays	15.0 to 25.0
D	Long delays	25.0 to 35.0
E	Very long delays	35.0 to 50.0
F	Extreme delay with intersection capacity exceeded	greater than 50.0

Source: Transportation Research Board 2000

Daily street segment capacity thresholds were obtained from the Imperial County General Plan, Circulation, and Scenic Highway Element, as shown below in Table 3.2-5. This table establishes the maximum daily roadway capacities by street classification. Heber Road is classified as a Collector Street.

TABLE 3.2-5. IMPERIAL COUNTY STANDARD ROADWAY CLASSIFICATION ADT

Road Classification	LOS				
	A	B	C	D	E
Prime Arterial	22,200	37,000	44,600	50,000	57,000
Major Arterial	14,800	24,700	29,600	33,400	37,000
Secondary Arterial	13,700	22,800	27,400	30,800	34,200
Collector Street	1,900	4,100	7,100	10,900	16,200
Local Street	*	*	4,500	*	*
Residential Street	*	*	1,500	*	*
Residential Cul-de-sac	*	*	200	*	*

* Levels of service (LOS) are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through-traffic. Levels of service normally apply to roads carrying through-traffic between major trip generators and attractors.

Source: Imperial County 2008d

Trip Generation

To assess future traffic conditions that would result from implementation of the proposed General Plan, it was necessary to forecast anticipated future visitor use at Heber Dunes SVRA to determine trip generation. Increases in future visitation would be a combination of multiple factors. The first factor considered was forecasted population growth in Imperial County, as the majority of Heber Dunes SVRA visitors come from the local community. The continuing growth in popularity of OHV recreation throughout California was another factor considered. Also accounted for were the improvements and enhancements of Heber Dunes SVRA that will attract additional visitors in the future. Based on all of these factors, it was determined that future visitation could increase from a currently estimated 188 visitors to approximately 880 visitors per day for a peak weekend during the busy season (AECOM 2010a). Complete details of the future visitor projection method are provided in Appendix C. The traffic study used the results of the visitor projections for future trip generation estimations. Using OHMVR Division estimates of 3.2 persons per vehicle, approximately 275 vehicle trips could be generated on a peak weekend by 880 visitors to Heber Dunes SVRA. Though representative of a highly busy peak weekend, this level of ADT was used in all future conditions to provide a conservative and reasonable analysis.

Trip Distribution

Existing trip distribution was determined by the turning movement counts and peak hour percentages obtained in February 2009 (detailed in the Traffic Impact Study, Appendix B). Because the roadway access or entry to Heber Dunes SVRA would not be modified, the existing travel patterns are not anticipated to change. Thus, future trip distribution was assumed to be the same as the existing conditions and future trips were assigned to

roadways and intersections following existing distribution patterns, as detailed in the Traffic Impact Study.

General Plan Analysis

Future traffic conditions were analyzed for the year 2030. This future analysis date is appropriate and conservative, as it accounts for projected increases in traffic on local roadways and most improvements occurring per the proposed General Plan would likely be in place.

The proposed General Plan contains a guideline specific to traffic and circulation as outlined below:

EU Guideline 1: Facilitate traffic circulation along the entrance road (Heber Dunes Road) by providing clear directional signage.

By providing clear directional signage, motorists would be better able to understand where they need to go and properly maneuver to their desired location in a more efficient and safe manner. This would help minimize traffic congestion and conflicts due to unsure drivers looking for the appropriate way to go.

In addition, the general nature of the recreational opportunities at Heber Dunes SVRA minimizes the potential for significant traffic impacts to result from vehicle trips to and from the site. Most OHV users recreate on the weekends when they have a full day available. Thus, a large majority of vehicle trips to Heber Dunes SVRA occur during weekend days when there is no weekday commuter traffic. Some local OHV users may also access the park in the evening hours following a workday, but this timing would be after the PM peak and would not interfere with typical traffic.

Intersections

Growth forecasts were applied to the study area intersections to develop year 2030 intersection operations for the AM and PM weekday peak hours and weekend PM peak hours (detailed in the Traffic Impact Study, Appendix B). The future projected vehicle trips generated by visitation to Heber Dunes SVRA were added to the future intersection operations. Table 3.2-6 shows future 2030 weekday conditions both with and without implementation of the proposed General Plan. Table 3.2-7 shows future 2030 conditions for the weekend PM peak both with and without implementation of the proposed General Plan. As indicated in the tables, all study area intersections would continue to operate at an acceptable LOS A or B in future conditions. Implementation of the proposed General Plan and the increased traffic associated with visitation to Heber Dunes SVRA would only slightly increase delay times at intersections. Imperial County's goal of LOS C for

intersection operation would not be exceeded and a *less-than-significant* traffic impact would result.

TABLE 3.2-6. YEAR 2030 WEEKDAY INTERSECTION OPERATION

Intersection	2030 No Project				2030 with Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Heber Road/SR-7	10.8	B	11.3	B	10.9	B	11.6	B
Heber Road/Heber Dunes Road (SVRA entrance)	8.6	A	9.1	A	8.6	A	9.4	A
Heber Road/Mets Road	9.0	A	8.8	A	9.0	A	9.0	A

Source: Fehr & Peers 2010

TABLE 3.2-7. YEAR 2030 WEEKEND PM PEAK INTERSECTION OPERATION

Intersection	2030 No Project		2030 with Project	
	PM Peak		PM Peak	
	Delay (seconds)	LOS	Delay	LOS
Heber Road/SR-7	11.1	B	11.1	B
Heber Road/Heber Dunes Road (SVRA entrance)	8.8	A	9.6	A
Heber Road/Mets Road	8.9	A	9.5	A

Source: Fehr & Peers 2010

Street Segments

As shown in Table 3.2-3, existing ADT data were obtained in February 2009 on President’s Day weekend (Friday, Saturday, and Sunday) along Heber Road from SR-7 to the Heber Dunes SVRA entrance.

Using a growth factor, the daily volumes from 2009 were increased to represent 2030 volumes to obtain future roadway volumes and associated LOS, as shown in Table 3.2-8.

TABLE 3.2-8. CUMULATIVE ROADWAY SEGMENT OPERATION

Street Segment	Collector Street LOS C Capacity	Day of Week	2030 without Project		2030 with Project	
			Traffic Volume	LOS	Traffic Volume	LOS
Heber Road (SR-7 to Heber Dunes Road)	7,100	Friday	1,675	A	1,870	A
		Saturday	1,195	A	1,390	A
		Sunday	780	A	975	A

Source: Fehr & Peers 2010

Based on the trip distribution patterns for a peak weekend day for the roadway segment along Heber Road from SR-7 to the Heber Dunes SVRA entrance, 30% of the traffic comes into Heber Dunes SVRA from east of the entrance and 40% leaves going east of the entrance. These percentages of trips coming in and going out along Heber Road east of the Heber Dunes SVRA entrance were applied to the anticipated trips generated by the proposed General Plan (275 trips in and 275 trips out, totaling 550 ADT) and added to the 2030 forecasted volumes for each weekend day, as shown in Table 3.2-8.

Heber Road is classified as a Collector Street and has an LOS C roadway capacity of 7,100. With the addition of traffic trips generated by the proposed General Plan in the future 2030 scenario, Heber Road would continue to operate at an acceptable LOS A, with substantial capacity remaining before approaching LOS C volumes. Thus, the addition of traffic generated by implementation of the proposed General Plan would not exceed acceptable operating standards or conflict with a congestion management program, and a ***less-than-significant*** impact would result.

The General Plan would not result in any modifications to public roadways or increase hazards due to design features. The local roadways are already used by large vehicles, farm equipment, and vehicles pulling trailers. The addition of more vehicles pulling trailers loaded with OHVs to the existing road network that is already accustomed to this type of vehicle traffic would not create a new hazard or substantially degrade roadway safety. A ***less-than-significant impact*** would result regarding roadway safety.

Emergency access to Heber Dunes SVRA would not be altered by implementation of the proposed General Plan. Adequate emergency access would remain and a ***less-than-significant impact*** would result.

There are no policies concerning public transit or bicycle or pedestrian facilities that are applicable to Heber Dunes SVRA. Implementation of the proposed General Plan would not modify such facilities or hinder the implementation of public transportation policies or alternative transportation facilities and a ***less-than-significant impact*** would result.

Near-Term Facility Improvements Analysis

The analysis prepared for the proposed General Plan demonstrates that there would be no significant traffic impacts with implementation of the proposed near-term facility improvements. As with the proposed General Plan, there would be no modifications to the roadway network or access to Heber Dunes SVRA. However, the near-term facility improvements would include a new entrance monument and landscaping near the entry point at the intersection of Heber Dunes Road and Heber Road. Landscape trees and shrubs

would be planted as a buffer between the property and the public road to create a recognizable entrance and act as a backdrop for a new Heber Dunes SVRA monument sign. This new, clearly defined entrance would assist motorists in quickly recognizing the turn into Heber Dunes SVRA and minimize intersection delay times and unsafe conditions due to driver uncertainty.

The near-term facility improvements would likely attract additional visitors to Heber Dunes SVRA, but not to the full extent of those accounted for in the proposed General Plan analysis. In addition, traffic volumes in the near term (i.e., next 2 years during implementation of the improvements) would not be as high as the future volumes used for the proposed General Plan analysis. For these reasons, the traffic conditions associated with the near-term facility improvements would not exceed those anticipated for the proposed General Plan; thus, a ***less-than-significant*** traffic impact would result.

For the same reasons as described under the analysis of the proposed General Plan, the near-term facility improvement would also result in ***less-than-significant impacts*** regarding roadway hazards, emergency access, and public transit and alternative transportation policies or facilities.

Special Events

As described in Section 2.7, implementation of the proposed General Plan and near-term facility improvements would likely make Heber Dunes SVRA more appealing and popular as a location for special events. Special events held at Heber Dunes SVRA, such as OHV promotions or demonstrations, OHV events or races, concerts, community or cultural events and gatherings, sporting events, or receptions may substantially increase visitation on particular days. The increase in visitors to Heber Dunes SVRA for these special events could generate traffic beyond that normally experienced on a peak weekend, with the number of increased vehicle trips dependent upon the type and size of special event taking place.

As demonstrated in the traffic analysis, there is ample capacity at area intersections and roadway segments to accommodate a substantial increase in traffic volumes while still maintaining acceptable operating conditions. As shown in Table 3.2-8, with implementation of the proposed General Plan in year 2030, there would be available capacity for over 5,000 additional vehicles before exceeding LOS C operating conditions along Heber Road. Tables 3.2-6 and 3.2-7 also show operating conditions of LOS A and B at local intersections with additional capacity before delay times would degrade below LOS C. In addition, the majority of special events would likely occur on weekend days. The timing of special events on weekend days would minimize the potential for special event traffic to overlap with typical times of high traffic volumes associated with normal weekday AM and

PM work commutes. The high traffic volumes that may result from occasional weekend special events at Heber Dunes SVRA are not anticipated to create significant traffic impacts to area intersections and roadways.

However, the influx of vehicles to Heber Dunes SVRA, particularly large vehicles towing trailers, may cause on-site parking and traffic issues as visitors sporadically park throughout the main activity areas. Unmanaged parking could result in hazards for pedestrian traffic moving through the area. Unmanaged parking could also result in obstructed emergency access. Problematic or unavailable on-site parking could force visitors to look for parking outside of Heber Dunes SVRA, possibly along nearby roads such as Heber Road or SR-7. The presence of vehicles parked along the sides of these roads could create a hazard, as there are many large farm vehicles, equipment, and other heavy trucks that travel these roadways. In addition, roadside parking is prohibited by Imperial County along Heber Road.

As described in Section 2.7, a Special Event Permit would be required for any event that would bring a substantial number of visitors to Heber Dunes SVRA. Each Special Event Permit would be individually reviewed by OHMVR Division staff. Through the permit review process, traffic and parking control measures would be considered and required, as necessary, as conditions of approval for the permit. This process is included in the following proposed General Plan guideline:

VUR Guideline 5.4: Use the OHMVR Division special event permit process to require appropriate traffic and safety procedures and enforcement measures for a given special event.

Implementation of the traffic and parking control measures would be the responsibility of the permit applicant and proof of actions may be required, as appropriate. Traffic and parking measures would be required based on anticipated volume of visitors for the special event, time of year (peak season or off season), day of the week, etc. Traffic and parking procedures would be adapted to the type of event, as different activities may require different types of management measures (i.e., OHV race, vendor displays, and cultural celebration). Some measures that may be required as part of the permit process are listed below. Additional or different measures may be required based on the individual situation. The following are examples of potential traffic and parking measures:

- Clearly defined staging and unloading areas for OHVs
- Designated parking areas for large vehicles and trailers
- Defined, organized, and marked parking lots for regular sized vehicles

- Designated emergency vehicle parking and access routes
- Signage posted along local roads stating no roadside parking is allowed
- Fees for on-site parking to encourage carpooling
- Use of barricades to direct vehicles and pedestrians
- Use of a parking team to coordinate and operate the parking process
- Clearly defined pedestrian walkways
- Use of flag personnel to direct traffic, both on-site and along surrounding roads
- Locating and securing appropriate off-site satellite parking with shuttle service to the site
- Coordination with local sheriff's department to provide traffic control at area intersections, alternative lane operations, or other appropriate traffic control measures
- Inclusion of travel and parking information on special event publications

Through customized parking and traffic control measures required as part of the Special Event Permit process, potential traffic and parking issues associated with the generation of high traffic volumes during a special event at Heber Dunes SVRA would be *less-than-significant*.

3.2.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to traffic and circulation. Implementation of the near-term facility improvements would also not result in significant impacts to traffic and circulation.

3.2.5 Mitigation Measures

No significant impacts to traffic or circulation would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to traffic or circulation would result from the near-term facility improvements and no mitigation is required. The Special Event Permit process may require certain measures to manage parking and traffic, as determined by OHMVR Division staff.

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3.3 Air Quality

3.3.1 Existing Setting

Regional Location and Uses

The project site is located within the boundaries of the SSAB, which includes all of Imperial County and a portion of Riverside County. Air quality management within the SSAB is under the jurisdiction of APCD. The primary sources of air emissions in the county are from fossil fuel combustion, on-road vehicles, industrial processes, agricultural tilling, fertilizer and live-stock, and road dust (EPA 2010).

A U.S./Mexican border crossing is located approximately 2.5 miles south at Calexico. This border crossing accommodates most of the commercial trucking operations crossing the border in this region. With I-8 to the north, the Gateway planning area and the Mexican border to the south, and SR-7 to the east, there is considerable truck traffic in the region. Sources of air emissions from south of the border and not included in the APCD emissions inventory include fugitive dust, motor vehicle exhaust, field burning, charbroil cooking, and industrial sources such as an oil-fueled glass plant and manure-fueled power plants (Watson and Chow 2001).

The nearest population centers include the city of Mexicali approximately 2.5 miles south within Mexico, the city of Calexico approximately 4.5 miles southwest, the city of Holtville approximately 5 miles north, the city of El Centro approximately 8.5 miles northeast, and the community of Heber approximately 7 miles west.

Surrounding Land Uses

Heber Dunes SVRA is surrounded by large parcels of land used for agriculture, which generally extend for miles in all directions around the project site with residential homes scattered throughout the area. There are approximately five residential home sites located within 0.5 mile north and northwest of the project site along King Road. The nearest residential developments to the south are generally located along SR-98, approximately 1 mile away. There are no sensitive receptors¹ to air pollutants in the immediate project vicinity.

¹ For the purposes of this air quality impact analysis, sensitive receptors are typically young, elderly, and/or sick individuals that may be more sensitive to the effects of air pollution than others. The Imperial County APCD Air Quality Handbook (APCD 2007a) lists the following land uses as sensitive receptors: schools, daycare centers, hospitals, retirement homes, convalescence facilities, and residences (p. 7).

Frequency of Heber Dunes SVRA Use

Heber Dunes SVRA is open 7 days a week year-round and is managed for day use only (no overnight camping is currently allowed). It receives light use during weekdays, but the bulk of visitation occurs on Saturdays and Sundays. Heber Dunes SVRA visitation fluctuates by season, with the highest levels occurring in the late fall, winter, and early spring (November through April) as shown in Table 2-1. This is consistent with a 2002–2003 and 2003–2004 season survey for Imperial Dunes, which received its peak use over the Halloween, Thanksgiving, New Year's, Martin Luther King, Jr. Birthday, and Presidents' Day weekends (BLM 2010).

Climate and Meteorology

The SSAB comprises parts of Riverside County and all of Imperial County, and is bound by the San Jacinto Mountains to the north and by the Little San Bernardino Mountains to the east. The climate of SSAB is typical of a desert with low annual precipitation, very hot summers, mild winters, high evaporation rates, and strong inversions.

One of the main determinants of climatology in the SSAB is a semipermanent high-pressure area (the Pacific High) over the Pacific Ocean. In the summer, the Pacific High is located well to the north, directing storm tracks north of California and maintaining clear skies for much of the year. When the Pacific High moves southward during the winter, weakened low-pressure storms and the mountains to the north bring little rainfall. The combination of subsiding air pressure, surrounding mountain barriers, and sufficient distance from the cold waters of the Pacific Ocean severely limits precipitation in Imperial County to an annual rainfall average of 2.61 inches. Most of this rainfall occurs in late summer or midwinter.

Meteorology and Local Pollutant Dispersion

The quantity and location of pollutant emissions in the county are a combined effect of emission sources, local topography, wind speed and direction, and air temperature gradients.

The flat terrain of the SSAB, coupled with strong temperature differentials created by intense solar heat, produces moderate winds and deep thermal convections. The county experiences mild and dry winters with daily maximum temperatures that range from 65 to 75 degrees Fahrenheit (°F). Summers in the county can be extremely hot with daily maximum temperatures ranging from 104 to 115°F, and very little rain. The mean monthly temperature ranges from 55 to 90°F.

Wind speeds are generally less than 10 mph; however, between April and May, the county may occasionally experience wind speeds greater than 30 mph. Predominant wind directions are to the west and west-southwest during all four seasons, and the average annual daily wind speed is 6.9 mph.

A common atmospheric condition between November and June in the county is known as a temperature inversion, where air temperatures become warmer with increasing height. An inversion can be associated with little air movement and stagnant conditions, and can persist for 1 or more days, thereby trapping air pollutants below and preventing their dispersion, thus increasing pollutant concentrations. The height of the inversion determines the size of the mixing volume trapped below. Inversion strength or intensity is measured by the thickness of the layer and the difference in temperature between the base and the top of the inversion. The strength of the inversion determines how easily it can be broken by winds or solar heating. Inversions appear to be relatively rare between July and October.

Regulatory Setting

Air quality in the SSAB, including the project area, is regulated by the U.S. Environmental Protection Agency (EPA), ARB, and APCD. Each of these agencies develops rules, regulations, and strategies to ensure that adopted ambient air quality standards are met. The following is a brief discussion of the applicable federal and state air quality laws, as well as specific responsibilities of APCD.

Federal Air Quality Regulations

EPA is responsible for implementing national air quality programs. Its air quality mandates are drawn primarily from the federal 1970 Clean Air Act (CAA), as amended.

The CAA requires EPA to establish primary and secondary² National Ambient Air Quality Standards (NAAQS) for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM₁₀), fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less (PM_{2.5}), and lead, and to ensure that each state meets these standards. These air pollutants are commonly referred to as "criteria air pollutants" because they are based upon scientifically-based human health and/or environmental criteria.

To ensure that these standards are met, each state is required to prepare a comprehensive, strategic, and enforceable air quality control plan with set deadlines for attaining the

² The primary standards protect the public health, while the secondary standards protect the public welfare.

NAAQS in air basins that do not meet one or more of the federal standards. These comprehensive plans are called state implementation plans (SIPs), and they must be updated periodically to keep up with EPA requirements and new control measures.

An SIP is not a single document but is actually a compilation of new and previously approved air quality management plans (AQMPs) prepared by air districts that do not meet the NAAQS. While individual air districts prepare the individual plans, ARB is the lead agency for each of these plans and oversees their preparation. After ARB approves each plan, it forwards the plan (also referred to as an SIP revision) to EPA, which reviews each plan for conformance to the mandates of the CAA and determines whether its implementation will enable the air basin to meet the NAAQS. Once EPA determines that the plan meets these goals, it approves the revised SIP and publishes it in the Federal Register. Because emissions inventories, rules, and regulations for air quality management, and the ability of each air basin to attain the NAAQS can change frequently, it is not unusual for ARB to be processing more than one AQMP/SIP revision with EPA approval at any one time.

State Air Quality Regulations

ARB, which is within the California EPA (Cal/EPA), is responsible for implementing the federal and state air quality regulations in the state of California. The agency approves AQMP/SIP revisions; monitors air quality throughout the state; determines and updates area attainment designations and maps; sets and enforces emission standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels; and implements the California Clean Air Act (CCAA). ARB, in coordination with air districts in the state, also develops air quality models to calculate stationary and mobile source air emissions from various land uses and activities.

The CCAA, which was adopted in 1988, requires ARB to establish California Ambient Air Quality Standards (CAAQS), which include the federal criteria pollutants, as well as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter. The CCAA requires all local air districts in the state to achieve and maintain the CAAQS by the earliest practical date. The districts are responsible for developing the overall attainment strategy for their jurisdictions, which involve maintaining emission inventories; modeling of air pollutants; and developing, quantifying, and comparing emission reduction strategies. Air districts in state nonattainment areas are also responsible for developing and implementing transportation control measures (in cooperation with the regional transportation planning agencies) necessary to achieve local ambient air quality standards (APCD 2009). Districts have their own authority to regulate area sources of emissions.

In most cases, the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained through interpretation of the health-effects studies considered

during the standard-setting process, as well as an added margin of safety to protect sensitive individuals.

Table 3.3-1 lists the NAAQS and the CAAQS for each of the criteria pollutants, as well as other pollutants listed in the CAAQS.

California Off-Highway Recreational Vehicle Regulations

California Off-Highway Recreational Vehicle Regulations control mobile source emissions (including evaporative emissions) by ensuring that all OHVs operating in California meet adopted emission standards.

In January 1994, ARB adopted emission-control regulations for OHVs, including off-road motorcycles (dirt bikes) and ATVs, manufactured on or after January 1, 1997. These regulations require all OHVs sold in California, model year 1998 and later, to be certified by the On-Road Light-Duty Certification Section of ARB demonstrating that the vehicles meet the adopted emissions standards.³

Due to the limited availability of OHVs that met the adopted emissions standards at that time, ARB revised the OHV regulations in 1998 to allow dirt bikes and ATVs that do not meet the new emission standards (i.e., noncompliant vehicles) to be used during certain periods of the year—mainly fall, winter, and spring months when ozone levels are low. Noncompliant vehicles were issued a red registration sticker from the Department of Motor Vehicles. Certified compliant vehicles and all OHVs 2002 model year and later were issued a green registration sticker. The green sticker allows the vehicles to be operated in any designated use area at any time during the year.

In July 2006, ARB approved evaporative emission standards for OHVs that went into effect in 2008. These standards approved changes to the use seasons for OHVs with red sticker registration based on new air basin data and added three vehicle types subject to OHV regulations: off-road utility vehicles, off-road sport vehicles, and sand cars (i.e., dune buggies, sand rails, etc.). Three state OHV facilities were also changed to year-round use seasons: Oceano Dunes SVRA, Heber Dunes SVRA, and Mammoth Bar OHV Park.

ARB's Enforcement Program is responsible for preventing the illegal sale and use of nonconforming or non-California-certified vehicles, engines, and emissions-related parts in California. Any noncertified vehicle that is imported, delivered, purchased, sold, rented, leased, acquired, or received for use, registration, or resale in California is subject to a maximum fine of \$5,000 under California Health and Safety Code, Sections 43150–43156.

³ The On-Road Light-Duty Certification Section also audits the production of OHVs.

TABLE 3.3-1. FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	NAAQS ¹		CAAQS ²
		Primary ³	Secondary ⁴	Concentration ⁵
Ozone (O ₃) ⁶	1-Hour	-	Same as Primary Standard	0.09 ppm
	8-Hour	0.075 ppm		0.070 ppm
Carbon Monoxide (CO)	8-Hour	9 ppm	None	9.0 ppm
	1-Hour	35 ppm		20 ppm
	8-Hour (Lake Tahoe)	-		-
Nitrogen Dioxide (NO ₂)	Annual Average	0.053 ppm	Same as Primary Standard	0.030 ppm ⁸
	1-Hour	0.100 ppm	None	0.18 ppm ⁸
Sulfur Dioxide (SO ₂)	Annual Average	0.030 ppm	-	-
	24-Hour	0.14 ppm	-	0.04 ppm
	3-Hour	-	0.5 ppm (1,300 µg/m ³)	-
	1-Hour	-	-	0.25 ppm
Respirable Particulate Matter (PM ₁₀) ⁹	24-Hour	150 µg/m ³	Same as Primary Standard	50 µg/m ³
	Annual Arithmetic Mean	Revoked		20 µg/m ³ note 9
Fine Particulate Matter (PM _{2.5}) ¹⁰	24-Hour	35 µg/m ³	Same as Primary Standard	No Separate State Standard
	Annual Arithmetic Mean	15 µg/m ³		12 µg/m ³
Lead (Pb) ⁷	30-Day Average	-	-	1.5 µg/m ³
	Calendar Quarter	1.5 µg/m ³	Same as Primary Standard	-
	Rolling 3-Month Average ¹⁰	0.15 µg/m ³	Same as Primary Standard	-
Hydrogen Sulfide (H ₂ S)	1-Hour	No Federal Standards		0.03 ppm (42 µg/m ³)
Sulfates (SO ₄)	24-Hour			25 µg/m ³
Visibility Reducing Particles	8-Hour (10 a.m. to 6 p.m., Pacific Standard Time)			Extinction coefficient of 0.23 per km-visibility of 10 miles or more (0.07/30 miles for Lake Tahoe) due to particles when the relative humidity is less than 70%.
Vinyl Chloride ⁷	24-Hour			0.01 ppm (26 µg/m ³)

¹ NAAQS (other than O₃, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

² California Ambient Air Quality Standards for O₃, CO (except Lake Tahoe), SO₂ (1- and 24-hour), NO₂, PM₁₀, PM_{2.5} and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

³ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

⁴ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; km = kilometers
Source: ARB 2010a

⁵ Concentration expressed first in units in which it was promulgated. Ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

⁶ On June 15, 2005, the 1-hour ozone standard was revoked for all areas except the 8-hour ozone nonattainment Early Action Compact Areas (those areas do not yet have an effective date for their 8-hour designations). Additional information on federal ozone standards is available at <http://www.epa.gov/oar/oaqps/greenbk/index.html>.

⁷ ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

⁸ The nitrogen dioxide ambient air quality standard was amended to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes became effective March 20, 2008.

⁹ Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, EPA revoked the annual PM₁₀ standard on December 17, 2006.

¹⁰ Effective December 17, 2006, EPA lowered the PM_{2.5} 24-hour standard from 65 µg/m³ to 35 µg/m³.

Off-Highway Motor Vehicle Recreation Act of 2003

Implementation of the Off-Highway Motor Vehicle Recreation Act (Act), as amended in 2007 by Senate Bill (SB) 742, helps to reduce PM₁₀ fugitive dust emissions by setting and enforcing soil conservation guidelines and standards for SVRAs and by controlling OHV activities in SVRAs that contain wildlife habitat.

The Act is within Section 5090 et seq. of PRC Section 5090.30 *et seq.* It makes OHMVR Division of the CSP responsible for ensuring that SVRAs are managed for long-term environmental sustainability, and that the SVRAs comply with applicable environmental laws, guidelines, and regulations, including CEQA. OHMVR Division is also mandated to prepare soil conservation guidelines/standards (Section 5090.35[b][1]), and wildlife habitat protection programs (Section 5090.35.[c]) for the SVRAs.

State Title 24, Part 6, California Code of Regulations

Title 24 of the California Code of Regulations (CCR), known as the California Building Standards Code or just "Title 24," contains the regulations that govern the construction of buildings in California. Part 6 of Title 24 contains the California Energy Code with energy conservation standards applicable to all residential and nonresidential buildings throughout the state. Implementation of these standards reduces energy demand of the residential and non buildings, thereby reducing area source emissions of criteria pollutants and the secondary air quality impacts from energy generation facilities.

Southern California Association of Governments

SCAG works with the air districts in its six-county regional planning area to help them reduce emissions of criteria pollutants in order to obtain federal and state criteria pollutant attainment status. The Air Quality Chapter of its Final 2008 Regional Comprehensive Plan (SCAG 2008a) contains goals, outcomes, and action plans to help the region develop effective technologies, transportation investments, and urban design strategies to reduce air pollution, improve air quality, and protect human health and the natural environment. Specific goals of the Air Quality Chapter include:

- Reduce emissions of criteria pollutants to attain federal air quality standards by prescribed dates and state ambient air quality standards as soon as practicable.
- Reverse current trends in greenhouse gas emissions to support sustainability goals for energy, water supply, agriculture, and other resource areas.
- Minimize land uses that increase the risk of adverse air pollution-related health impacts from exposure to toxic air contaminants (TACs), particulates (PM₁₀, PM_{2.5}, ultrafine), and carbon monoxide.

- Expand green building practices to reduce energy-related emissions from developments to increase economic benefits to business and residents.

Imperial County Air Pollution Control District

APCD is the agency responsible for protecting the public health and welfare through the administration of the CAA and CCAA. Included in APCD's tasks are monitoring air quality at five air quality monitoring stations within the SSAB; maintaining emissions inventories; developing emission reduction strategies; preparing the Imperial County portions of the SIP that demonstrate how the district will achieve the NAAQS; and adopting, promulgating, and enforcing rules and regulations for achieving and maintaining the NAAQS and the CAAQS.

Regulation III, Fees

APCD established Rule 310, Operational Development Fee in November 2007 (APCD 2007a) to mitigate PM₁₀ and ozone precursor emissions from new commercial and residential development projects in the county, including incorporated cities. Under Rule 310, a residence is defined as "a building, including accessory buildings, used as living quarters by one family." All project proponents have the option to either provide off-site mitigation, pay a one-time operational development fee, or do a combination of both. Rule 310 does not specifically exempt government agencies from Rule 310; however, APCD will classify the project as commercial/nonprofit and, under that classification, the project will be exempt from paying the fees.

Regulation VIII, Fugitive Dust Rules

In 2005 APCD developed a comprehensive set of fugitive dust rules, collectively known as Regulation VIII, that addresses all anthropogenic (caused by human activities) sources within the county. Regulation VIII is based on Best Available Control Measures (BACM) and its implementation is mandatory.

Rule 800, General Requirements for Control of Fine Particulate Matter (PM-10), requires actions to prevent, reduce, or mitigate PM₁₀ emissions, and are based on EPA's guidance for Serious PM₁₀ Non Attainment Areas.

Rule 801, Construction and Earthmoving Activities, requires actions to prevent, reduce, or mitigate PM₁₀ emissions from construction and other earthmoving activities.

Rule 803, Carry-Out and Track Out, requires actions to prevent, reduce, or mitigate PM₁₀ emissions entrained in the ambient air as a result of emissions generated from Track-Out and Carry-Out operations.

Rule 804, Open Areas, requires actions to prevent, reduce, or mitigate PM₁₀ emissions from open areas.

Rule 805, Paved and Unpaved Roads, requires actions to prevent, reduce, or mitigate PM₁₀ emissions entrained in the ambient air from new or existing public or private paved or unpaved roads, road construction projects, or road modification.

The U.S. Bureau of Land Management (BLM) implements controls for windblown dust on public lands under their jurisdiction,⁴ and the IID's Fallowing Program⁵ reduces dust from fallow fields.

Ambient Air Quality

Sources of air emissions in the project area are from surrounding agricultural operations, off-highway vehicular use, traffic along SR-7, and upwind emissions coming from Mexicali in northwestern Mexico (referred to as international trans-border emissions). Select air pollutants are measured at five air quality monitoring stations in the SSAB. The monitoring station closest to the project site is the El Centro-9th Street Monitoring Station (ARB Station ID 13694) located at 150 9th Street in El Centro, approximately 8.5 miles northwest of the project site. Air pollutants monitored at this location include CO, NO₂, O₃, PM₁₀, and PM_{2.5}. Neither ARB nor APCD currently maintain air quality monitoring stations along and north of the U.S. border with Mexico.

Table 3.3-2 summarizes the air quality data from this monitoring station for the most recent 5 years. As shown, 1- and 8-hour O₃ and 24-hour and annual average PM₁₀ emissions have consistently exceeded the state standard for these pollutants over the last 5 years. The 8-hour O₃ federal standard was also consistently exceeded. Within the air basin, areawide fugitive dust is the dominant component of PM₁₀ (APCD 2009, Table 2).

Attainment Designations

Both ARB and EPA use the monitoring data from the monitoring stations to designate areas according to their attainment status for criteria air pollutants. The purpose of these

⁴ BLM owns approximately 1.3 million acres in Imperial County and is subject to the requirements of Rule 800 F.5, Bureau of Land Management Requirements. Under this rule, BLM shall prepare a dust control plan to minimize PM₁₀ emissions for sources under the control of BLM. Rule 800 F.5 et seq. outlines the specific contents of the dust control plan (APCD 2009). While BLM is required to describe the dust control measures that it intends to implement, BLM is not required to implement any specific BACM level controls for OHV use (Federal Register 2010).

⁵ The purpose of the Fallowing Program is to provide willing land owners and/or lessees with monetary incentives to fallow their fields so the Imperial Irrigation District could transfer the conserved water for Salton Sea mitigation water needs. Each field's participation in the fallowing program is limited to 2 out of every 4 years (IID 2010).

TABLE 3.3-2. AMBIENT AIR QUALITY, EL CENTRO-9TH STREET MONITORING STATION

Pollutant	Averaging Time	Federal Primary Standards	California Air Quality Standards	Maximum Concentrations ¹					Number of Days Exceeding Federal Standard ²					Number of Days Exceeding State Standard ²				
				2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
CO	8 hour	9 ppm	9.0 ppm	2.23	2.59	1.67	1.71	3.2	0	0	0	0	0	0	0	0	0	0
	1 hour	35 ppm	20 ppm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NO ₂	Annual Avg.	0.053 ppm	0.030 ppm	0.011	0.011	0.011	0.009	0.009	--	--	--	--	--	0	0	0	0	0
	1 hour	0.100 ppm	0.18 ppm	0.065	0.066	0.071	0.081	0.122	--	--	--	--	--	0	0	0	0	0
O ₃	1 hour	-- ²	0.09 ppm	0.122	0.129	0.118	0.135	0.111	0	Revoked				8	19	8	4	9
	8 hour	0.075 ppm	0.070 ppm ⁷	0.097	0.101	0.094	0.084	0.085	26	26	8	2	11	49	39	23	9	30
PM ₁₀	24 hours	150 µg/m ³	50 µg/m ³	85.0	141.0	196.0	88.7	233.7	0	0	1	0	2	6	20	22	4	17
	Annual	Revoked	20 µg/m ³	33.8	43.2	*	32.7	47.9	0	Revoked				35.5	120.1	*	25.5	104.6
PM _{2.5}	24 hours	35 µg/m ³	none	57.9	33.8	30.5	26.7	37.7	1	0	0	0	1	--	--	--	--	--
	Annual	15 µg/m ³	12 µg/m ³	9.3	8.7	8.4	*	7.9	0	0	0	0	0	0	0	0	0	0

"-" = data not available or applicable.

"*" = insufficient data to determine the value.

¹ Concentration units for CO, NO₂, and O₃ are in parts per million (ppm). Concentration units for PM₁₀ and PM_{2.5} are in micrograms per cubic meter (µg/m³). State max values reported. For PM_{2.5}, Maximum Annual Concentrations for 2005–2009 are National Average Annual emissions,

² The federal 1-hour ozone standard was revoked in June 2005.

Source: ARB 2010b

designations is to identify the areas with air quality problems and then to initiate planning efforts to attain the adopted standards. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. California has a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment. If an area is redesignated from nonattainment to attainment, the CAA requires a maintenance plan to demonstrate how the air quality standard will be maintained for 10 years.

Federal Attainment Status

As of June 16, 2010, the SSAB was classified by EPA as being in serious nonattainment for PM₁₀, and moderate nonattainment for 8-hour ozone.⁶ A portion of the county located along the U.S. border with Mexico was also designated as nonattainment for PM_{2.5} (2006 standard); however, this pollutant was localized around the Calexico East border crossing, which accommodates most of the commercial trucking operations crossing the border in this region. Air quality in this area is not representative of air quality within the SSAB. The SSAB is in attainment for the remaining federal criteria air pollutants.

State Attainment Status

As of March 29, 2010, the SSAB was classified as a nonattainment area for ozone and PM₁₀, and unclassified for visibility reducing particles, hydrogen sulfide, and PM_{2.5}.⁷ The SSAB is in attainment for the remaining state criteria air pollutants.

State Implementation Plan

When EPA made the nonattainment designation for PM₁₀ for the SSAB, APCD prepared the *Final 2009 Imperial County State Implementation Plan for Particulate Matter Less Than 10 Microns in Aerodynamic Diameter* (APCD 2009), which was adopted by the APCD's Board on August 11, 2009. The PM₁₀ plan found that, during the period from 2006 to 2008, there were 5 days that exceeded the standard at various locations within the district, all of which were due to either international transport or high wind natural events.

⁶ On December 3, 2009, USEPA issued a final ruling determining that the Imperial County "moderate" 8-hour ozone nonattainment area attained the 1997 8-hour standard. Because this determination does not constitute a redesignation to attainment under the Clean Air Act Section 107(d)(3), the designation status remains "moderate" nonattainment for the 1997 8-hour ozone standard. As such, APCD submitted to USEPA a "Modified" 2009 8-hour Ozone Air Quality Management Plan (APCD 2010b).

⁷ Based on ARB's Chronology of State PM_{2.5} Designations dated March 29, 2010, Calexico has been designated as nonattainment for PM_{2.5} since 2003. These data are available at <http://www.arb.ca.gov/design/changes.htm#reports>.

The implementation plan includes BACM for all area source categories that are considered significant contributors to violations of the federal PM₁₀ standard. A source category is considered significant if its estimated contribution is 5 µg/m³ or higher to the total concentration. The plan determined that there are only two significant source categories in Imperial County: agricultural tilling and unpaved road dust (APCD 2009).

ARB approved the PM₁₀ plan and submitted it to EPA for approval. As of August 2010, EPA is finalizing a limited approval and limited disapproval of revisions to the plan. This action concerns local rules that regulate PM₁₀ emissions from sources of fugitive dust, such as construction sites, unpaved roads, and disturbed soils in open and agricultural areas in the county (Federal Register 2010).

At this time, a very dynamic regulatory environment surrounds the issue of fugitive dust at both the state and federal levels. Plans, regulations, statutes, and other regulatory framework regarding fugitive dust are continually changing as the topic evolves and more information becomes available. Additional regulations and requirements related to the generation of fugitive dust are expected.

3.3.2 Thresholds of Significance

Adoption of the proposed Heber Dunes SVRA General Plan and construction of near-term facility improvements would have significant air quality impacts if they would do the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Create objectionable odors affecting a substantial number of people.

As stated in CEQA Appendix G, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. APCD's CEQA Air Quality Handbook (APCD 2007b) establishes specific air quality significance criteria for construction activities and project operations. Should the

proposed project exceed any of the thresholds listed in Table 3.3-3, a significant air quality impact would occur.

TABLE 3.3-3. APCD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds		
Pollutant	Construction	Operation
NO _x	≥100 lbs/day	≥55 lbs/day
ROG	≥75 lbs/day	≥55 lbs/day
PM ₁₀	≥150 lbs/day	≥150 lbs/day
SO _x	--	≥150 lbs/day
CO	≥550 lbs/day	≥550 lbs/day

Source: APCD 2007b

lbs/day = pounds per day

≥ = greater than or equal to

3.3.3 Environmental Evaluation

Methodology

Temporary (construction) and permanent (operational) criteria pollutant emissions for the proposed project were calculated using the URBEMIS2007 Version 9.2.4⁸ computer model, and data from the URBEMIS2007 Version 9.2.4 Users Guide (URBEMIS 2007). Predicted construction and operational emissions were then compared with applicable APCD significance thresholds.

Mobile sources of criteria pollutants calculated by URBEMIS2007 include passenger vehicles; light-, medium-, and heavy duty trucks; buses; motorcycles; and motor homes. URBEMIS2007 specifically calculates exhaust emissions, and entrained road dust from vehicles traveling on roadways. For on-road mobile source emissions, URBEMIS2007 relies upon EMFAC2007, Version 2.3, developed by ARB. The Emission FACTors (EMFAC) model calculates emissions from on-road motor vehicles, including passenger vehicles; light-, medium-, and heavy duty trucks; buses; motorcycles; and motor homes. URBEMIS2007 also incorporates ARB's OFFROAD2007 model for off-road construction and landscape maintenance equipment emissions.⁹ Mobile source emissions of off-road vehicles, such as recreational vehicles, agricultural equipment, ships, and airplanes, are not calculated by URBEMIS2007.

Emissions of OHVs were calculated from the emission estimates for Imperial County developed from OFFROAD2007. These emission estimates were used to calculate exhaust emission factors

⁸ The model name, URBEMIS, is based on the expression, "URBan EMISsions."

⁹ OFFROAD2007 calculates emissions from a number of gasoline, diesel, compressed natural gas, and liquefied petroleum gas-powered engine and vehicle categories, including agricultural, construction, lawn and garden, and off-road recreation. Not all of these categories are included in URBEMIS2007.

associated with OHV use at Heber Dunes. Fugitive dust associated with OHV use was calculated using methodology from the 2009 PM₁₀ SIP. The SIP states that sand dune areas are unstable with no vegetation in the native state; “therefore, human activities on these areas do not reduce the level of stability or of vegetative canopy cover, and as a result cause no change in windblown dust emissions from these areas” (APCD 2009, Appendix III.B). Therefore, according to the SIP, “the average rate of PM₁₀ emissions from the Sand Dunes...is 1.3×10^{-4} tons/day/acre.” Similar to the analysis in the SIP, the emissions rate is applied to the estimated acreage of OHV use in the Heber Dunes SVRA.

Area sources are stationary sources of criteria pollutants that individually emit small quantities of pollutants but can collectively contribute to significant quantities of pollutants. Area source emissions calculated by URBEMIS2007 include natural gas combustion for cooking, heating, and water heaters; hearth fuel combustion from wood-burning stoves, wood-burning fireplaces and natural gas fireplaces; fuel combustion from landscape equipment; consumer products, such as hairspray, deodorants, cleaning products, spray paint, and insecticides;¹⁰ and maintenance architectural coatings. Area sources of PM₁₀ and fugitive dust include paved and unpaved roads, undeveloped land with no vegetation, and farming operations.

General Plan Analysis

Construction Impacts

Construction emissions are considered short term and temporary, but have the potential to represent a significant impact with respect to air quality. PM₁₀ and PM_{2.5} are among the pollutants of greatest localized concern with respect to construction activities. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. Particulate emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction emissions of PM can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbance.

Emissions of ozone precursors volatile organic compounds (VOC) and nitrogen oxides (NO_x) are primarily generated from mobile sources and vary as a function of vehicle trips per day associated with delivery of construction materials, the importing and exporting of soil, vendor trips, and worker commute trips, and the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their operation. A large portion of

¹⁰ Consumer products of concern commonly contain VOCs that, when emitted into the air, contribute to the formation of ozone. Consumer products may also contain toxic air contaminants and greenhouse gases.

construction-related VOC emissions also result from the application of asphalt and architectural coatings and vary depending on the amount of coatings and paving applied each day.

The proposed General Plan identifies long-range visions and goals and provides direction on future types of improvements, services, and programs. Construction-related emissions associated with potential improvements over the timeframe of the proposed General Plan cannot be accurately determined at this stage of the planning process. Nonetheless, given the location of Heber Dunes SVRA, its current usage, and near-term improvements, it is anticipated that future improvements that involve construction activities would be similar in nature to the near-term facility improvements expected to occur over a 2-year period. Therefore, future improvement construction emissions are expected to be similar to those of the near-term facility improvements. Maximum daily construction emissions were estimated based on the highest intensity of construction activities that could occur on a given day. It is anticipated that future construction activities that may occur under the proposed General Plan would not exceed this daily maximum intensity. As discussed under construction air quality impacts for near-term improvements, maximum daily emissions would not exceed APCD's thresholds of significance. Thus, construction-related emissions of criteria air pollutants and precursors would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, lead to a cumulatively considerable net increase in criteria air pollutant concentrations and/or conflict with air quality planning efforts. This impact would be *less-than-significant*.

Operational Impacts

Operational Emissions

Increased activity within Heber Dunes SVRA, as envisioned by the proposed General Plan, would result in increased air emissions. Improvements and enhancements to Heber Dunes SVRA under the proposed General Plan would be implemented over many future years, as a general plan provides guidance and vision for a period of 20 years or more. For this reason, future conditions were analyzed for the year 2030.

Operational area and mobile sources of criteria pollutants for the proposed General Plan would include emissions from the proposed near-term facility improvements and any future improvements and increased visitation to Heber Dunes SVRA. Area source emissions of criteria pollutants would be from heaters and water heaters, landscape maintenance, fire pits, barbeques, and fugitive dust from unvegetated areas. Mobile source emissions of criteria pollutants would be from passenger vehicles; light-duty trucks, motorcycles, and motor homes, and from exhaust and entrained dust from OHV use on-site. Trips would be

generated by visitors, the proposed staff residence and RVs, and the ranger/staff station and maintenance facility. Operational emissions were quantified using assumptions detailed in the near-term facility improvements analysis discussed below. The analysis was based on peak weekend day trip generation at General Plan buildout. Area source emissions were quantified for operation of the near-term facility improvements. While it is likely that additional future improvements could occur over the planning horizon of the General Plan, any associated emissions would be similar in magnitude.

Table 3.3-4 shows the maximum daily emissions for General Plan buildout. Maximum daily emissions from the sources quantified would not exceed APCD's significance thresholds. The General Plan would not increase the total area disturbed at the Heber Dunes SVRA. The General Plan would designate certain areas for open use and would identify designated trails in the Resource Management Zone in particular. Therefore, the General Plan could potentially lead to a small decrease in the net area subject to OHV use compared to existing conditions. Detailed assumptions and emissions estimates are included in the near-term facility improvements analysis.

Consistency with Air Quality Plan

The consistency of the proposed project with the 2009 PM₁₀ SIP is based upon the land use and growth assumptions that are incorporated into the plan (APCD 2009). These land use and growth assumptions are typically based upon the locally adopted general plans; therefore, if a proposed project is consistent with the jurisdictional general plan, it is consistent with the PM₁₀ Plan. In preparation of the AQMP/SIP, APCD uses land use designations contained in General Plan documents to forecast, inventory, and allocate regional emissions from land use and development-related sources. For purposes of analyzing consistency with the AQMP/SIP, it may be assumed that if a proposed project would have vehicle trip generation substantially greater than anticipated in the General Plan, then the proposed project would conflict with the AQMP/SIP. Until the project property was deeded to OHMVR Division in 2007, Heber Dunes was county property and subject to the 2008 County General Plan, which designated the project site and most of the surrounding area Agriculture. The County of Imperial Codified Ordinances zoned the property as G/S (Imperial County 1998a). Primarily, this zone allows for all types of government-owned and/or government-operated facilities, including office or other uses. It also allows for special public uses but does not specifically include recreation or OHV use.

Heber Dunes SVRA, as well as most surrounding land, is designated as Agriculture by Imperial County. The County recommends the use of the Institute of Transportation Engineers Trip Generation Manual, which assumes a trip rate of 2 trips/acre for agricultural uses. Thus, ADT for the agricultural designation would be approximately 678

TABLE 3.3-4. PEAK WEEKEND OPERATIONAL AIR EMISSIONS – GENERAL PLAN BUILDOUT

Source	Emissions (lbs/day) ¹							
	ROG	NO _x	CO	SO _x	PM ₁₀ (exhaust)	PM ₁₀ (dust) ^{2,3}	PM ₁₀ (total)	PM _{2.5}
Area Sources	0.23	0	0	0	0	0	0	0
OHV Sources	0.64	0.61	14	0.03	0.21	88.4	88.6	0.16
Residential Mobile Sources	0.68	0.59	9	0			0.86	2.52
Visitor Mobile Sources	24.61	23.58	338.92	0.1			18.9	3.61
Total Emissions	26.16	24.78	361.92	0.13	0.21	88.4	108.36	6.29
APCD Significance Threshold	≥55	≥55	≥550	≥150			≥150	--
Exceeds Threshold?	NO	NO	NO	NO			NO	--

Notes: lbs/day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; ROG = reactive organic gases; SO_x = oxides of sulfur.

¹ Emissions modeled for wintertime conditions using the URBEMIS 2007 (Version 9.2.4) computer model.

² Fugitive dust emissions for on-road mobile sources are included in the PM₁₀ total emissions.

³ Fugitive dust emissions for OHV use are based the emission factor of 1.3×10^{-4} * 340-acres to estimate the additional disturbance from OHV activities.

Note: The total emissions estimates shown are the highest values that would occur in the winter season. Totals may not add up to individual values since the highest emissions for a pollutant from both area and mobile sources may not occur in the same season.

Refer to Appendix D for detailed assumptions and modeling output files.

Source: Data modeled by AECOM in 2010

trips per day and would exceed the peak weekend day trips for the proposed General Plan. Emissions from the project site would have been accounted for in the 2009 ozone AQMP and the 2009 PM₁₀ SIP based on site designation. Thus, the proposed General Plan would not increase vehicle trips beyond those anticipated by APCD.

The PM₁₀ Plan modeled existing and future emissions of PM₁₀ fugitive dust within its jurisdiction. The Plan contains an analysis of fugitive dust related to OHV use; however, it did not specifically include Heber Dunes as an SVRA (APCD 2009, Appendix III.B). PM₁₀ emissions from human disturbance on sand dunes, however, are of particular concern to APCD because dunes are inherently unstable with no vegetation in the native state. Therefore, the 2009 PM₁₀ SIP conservatively accounts for PM₁₀ emissions from human disturbance of dunes by OHVs in its emissions inventory by adding an additional 12.2 tons per day (tpd) of emissions from this source. The 2009 PM₁₀ SIP acknowledges that PM₁₀ emissions from these activities were calculated conservatively and that such emissions would likely be less than 12.2 tpd (APCD 2009, Appendix III.B). Because the PM₁₀ emissions

from OHV activities in the 2009 PM₁₀ SIP were conservatively estimated and likely to be less than 12.2 tpd, it is anticipated that the additional PM₁₀ emissions of 0.04 tpd from Heber Dunes SVRA would not exceed the PM₁₀ emissions inventory of the 2009 PM₁₀ SIP. These emissions can be compared to Imperial County's approximate 200 tpd annual average PM₁₀ dust emissions, which include approximately 32 tpd from unpaved roads and pasture lands and about 168 tpd from other sources (APCD 2009, Appendix III.B).

As a result, the proposed project would not conflict with or obstruct implementation of the *Final 2009 Imperial County State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter*, and impacts under this significance criterion would be ***less-than-significant***.

Impacts to Sensitive Receptors

Sensitive receptors include schools, daycare centers, hospitals, retirement homes, convalescence facilities, and residences. The nearest off-site sensitive receptors are located approximately 0.5 mile from the edge of Heber Dunes SVRA. The only on-site receptors are the staff residence and the seasonally occupied camp host sites.

As discussed above, the proposed General Plan identifies long-range visions and goals and provides direction on future types of improvements, services, and programs. Since the proposed General Plan does not contain specific development proposals, construction-related emissions associated with potential improvements cannot be accurately determined at this stage of the planning process. Nonetheless, given the location of Heber Dunes SVRA, its current usage, and near-term improvements, it is anticipated that future improvements that involve construction activities would be similar in nature to the near-term improvements expected to occur over a 2-year period. Therefore, future improvement construction emissions are expected to be similar to those of the near-term improvements. Construction emissions would be temporary and would not exceed APCD's significance thresholds. Thus, construction activities under the proposed General Plan would not expose sensitive receptors to substantial pollutant concentrations. Construction-related activities would result in short-term emissions of diesel particulate matter (diesel PM) from the exhaust of off-road heavy-duty diesel equipment. Diesel PM is designated as a TAC by ARB. As discussed in more detail under the near-term facility improvements analysis, diesel PM emissions would be temporary and would dissipate quickly with distance from the source. This impact would be ***less-than-significant***.

Air emissions from increased recreational activities associated with OHV use under the proposed General Plan would have the potential to expose on-site receptors to substantial pollutant concentrations. As described in Chapter 2 of ~~the DEIR~~[this FEIR](#), the proposed General Plan includes eight Planning Zones for Heber Dunes SVRA. The staff residence and

RV pads for camp hosts would be located in the PHO, which is proposed at the northern end of Heber Dunes SVRA. The HBA, which is proposed in the northern portion of the Heber Dunes SVRA and is less appealing for OHV use, would act as a buffer zone between on-site sensitive receptors and dedicated OHV use areas. The HBA would include non-OHV recreation and would be managed with a focus on pedestrian mobility by limiting vehicle travel speeds. Thus, on-site sensitive receptors would be adequately separated from OHV recreation and would not expose sensitive receptors to substantial pollutant concentrations. This impact would be ***less-than-significant***.

Vehicle travel to and from the site on paved and unpaved roads would generate fugitive dust emissions. The primary roads and freeways in the project area are paved. Unpaved roads in the area consist of unpaved connector roads and back roads. Sensitive receptors in the vicinity of the project area and in the nearest population centers are primarily located along paved roads. The land uses directly adjacent to the unpaved roads are agricultural and do not represent sensitive air quality receptors. Vehicle travel on unpaved roadways close to residences would be limited to Heber Dunes SVRA visitors driving on unpaved driveways to get to the paved primary roads. It is unlikely that increased Heber Dunes SVRA visits anticipated under the proposed General Plan would increase the exposure to fugitive dust beyond what is already occurring on the unpaved driveways/connector roads. This impact would be ***less-than-significant***.

In addition, the potential for CO hotspots at intersections could expose sensitive receptors to CO concentrations that exceed the NAAQS or CAAQS. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions), particularly during peak commute hours and certain meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals.

An appropriate qualitative screening procedure is provided in the procedures and guidelines contained in *Transportation Project-Level Carbon Monoxide Protocol* (the Protocol) to determine whether a project poses the potential for a CO hotspot (UCD ITS 1997). This is the protocol recommended by Caltrans for project-level air quality analysis needed for CEQA. The Protocol is the standard method for project-level CO analysis used by Caltrans. According to the Protocol, projects may worsen air quality if they increase the percentage of vehicles in cold start modes by 2% or more; significantly increase traffic volumes (by 5% or more) over existing volumes; or worsen traffic flow, defined for signalized intersections as increasing average delay at intersections operating at LOS E or F

or causing an intersection that would operate at LOS D or better without the project, to operate at LOS E or F.

The traffic impact study for the proposed General Plan (Fehr & Peers 2010) indicates that all the signalized intersections that were analyzed would operate at LOS A or B under cumulative conditions with the project for both the weekend and weekday scenarios. In addition, the proposed General Plan would not increase traffic volumes and percentage of vehicles in cold start mode beyond the Protocol guidelines. Thus, the project would not create a CO hotspot and this impact would be *less than significant*.

Odors

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. The exposure of sensitive receptors to odorous emissions due to the proposed General Plan is discussed under separate headings below.

Construction

Project construction activities associated with future improvements at Heber Dunes SVRA could result in odorous emissions from diesel exhaust generated by construction equipment. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by diesel exhaust odors associated with Project construction. The impact would be *less-than-significant*.

On-Site Operations

No common sources of nuisance odors, such as wastewater treatment facilities, waste disposal facilities, or agricultural operations, are proposed as part of the proposed General Plan. As discussed under the impacts to sensitive receptors, OHV use would not occur in proximity to on-site receptors and would not expose them to offensive odors. This impact would be *less-than-significant*.

Near-Term Facility Improvements Analysis

Construction Air Quality Impacts

Activities that would generate emissions during construction of the near-term improvements include site grading and soil compaction, trenching, building construction,

asphalt pavement, and architectural coatings. On-site construction emissions would principally consist of exhaust emissions (nitrogen oxides [NO_x], SO_x, CO, reactive organic gases [ROG], PM₁₀, and PM_{2.5}) from heavy-duty construction equipment, motor vehicle operations, and fugitive dust from delivery vehicles, as well as worker traffic and road dust. Additionally, paving operations and application of architectural coatings would release ROG emissions.

Emissions of criteria pollutants and ozone precursors (ROG and NO_x) were calculated for the 24-month construction period using information from the project description; assumptions made for earthmoving activities, types of construction equipment used, and phasing of project buildout; and construction equipment emissions data from the URBEMIS Users Guide. Construction assumptions are included in Appendix D of this [DEIR/FEIR](#). For the purposes of this impact analysis, construction is assumed to commence as early as the year 2011 and the following activities are assumed for the 24-month construction period:

Over the first 12-month construction period, the following northernmost site improvements would likely be constructed:

- a new residence with an energy-efficient heating and cooling system, and a supplemental photovoltaic solar electric system;
- concrete pads for three RVs, propane tanks, and self-contained fuel station with pumps;
- a new asphalt road around the proposed residence and RV pads;
- a new parking area for OHMVR Division vehicles;
- installation of irrigation, water, drainage, electrical, and telecommunication lines; and
- installation of four septic systems.

To construct facilities in the first year, approximately 4,300 CY of soil would be excavated for building pads, utility and drainage lines, and the septic systems. Approximately 1,200 CY of this material would be stockpiled elsewhere on the site to elevate the track during the second year. Five acres of the Heber Dunes SVRA site are expected to be disturbed during construction.

Over the second 12-month construction period, the following remaining improvements would likely be constructed:

- a 3,000-square-foot maintenance facility/ranger station with an energy-efficient heating and cooling system, and a supplemental photovoltaic solar electric system;
- two covered parking areas for OHMVR Division vehicles;
- a 300- by 300-square-foot track, with spectator stands and viewing area;

- conversion of the existing modular building as a classroom and interpretive center;
- an upgraded pump house;
- concrete pads for propane tanks and self-contained fuel station with pumps;
- resurfacing of Heber Beach Road with asphalt;
- installation of irrigation, water, drainage, electrical, and telecommunication lines;
- installation of one septic system; and
- 40 new individual and group picnic facilities with 40 barbeques and five fire pits.

To construct facilities in the second year, approximately 2,700 CY of soil would be excavated for building pads, utility and drainage lines, and the septic system. Approximately 2,100 CY yards of material would be needed to elevate the track 10 inches above existing elevations. Therefore, approximately 900 CY of soils would be required to supplement the 1,200 CY from Phase 1 to elevate the track. These soils would need to be excavated from elsewhere on-site or imported from an off-site location.

Construction activities can vary substantially from day to day, depending upon the level of activity, the specific type of operation, and prevailing weather conditions.

Construction activities would comply with APCD Regulation VIII, Fugitive Dust Rules, to control PM₁₀ fugitive dust emissions. Applicable rules include Rule 800, General Requirements for Control of Fine Particulate Matter (PM-10); Rule 801, Construction and Earthmoving Activities; Rule 803, Carry-Out and Track Out; Rule 804, Open Areas; and Rule 805, Paved and Unpaved Roads. Each of these rules was discussed above under Regulatory Setting. Because implementation of these rules is mandatory, they have been incorporated into the project description and into the URBEMIS2007 model:

- Reduce speed on unpaved roads to less than 15 mph;
- Water exposed surfaces twice daily;
- Apply soil stabilizers to inactive areas;
- Stabilize soil in equipment loading/unloading areas;
- Replace groundcover in disturbed areas quickly; and
- Manage haul road dust by watering twice daily.

[Additional measures that could be considered for fugitive dust reduction are listed in the Imperial County Air Pollution Control District's CEQA Air Quality Handbook, Section 7 \(November 2007\).](#)

Table 3.3-5 demonstrates that APCD's emissions thresholds would not be exceeded during either year of construction, resulting in a *less-than-significant* construction air quality impact.

TABLE 3.3-5. UNMITIGATED CONSTRUCTION AIR EMISSIONS BY YEAR – NEAR-TERM FACILITY IMPROVEMENTS

Source	Construction Emissions (lbs/day) ¹					
	ROG	NO _x	CO	SO ₂	PM ₁₀ ²	PM _{2.5}
Year 1 Construction Emissions³						
Total Unmitigated Emissions	16.30	93.78	52.04	0.00	6.16	3.62
APCD Significance Threshold	≥75	≥100	≥550	--	≥150	--
Exceeds Threshold?	NO	NO	NO	<i>n/a</i>	NO	<i>n/a</i>
Year 2 Construction Emissions³						
Total Unmitigated Emissions	14.03	95.78	55.62	0.01	3.51	3.18
APCD Significance Threshold	≥75	≥100	≥550	--	≥150	--
Exceeds Threshold?	NO	NO	NO	<i>n/a</i>	NO	<i>n/a</i>

Notes: lbs/day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; ROG = reactive organic gases; SO_x = oxides of sulfur.

¹ Emissions modeled using the URBEMIS 2007 (Version 9.2.4) computer model.

² For Year 1, 3.28 lbs/day were PM₁₀ emissions from exhaust; 2.88 lbs/day were from fugitive dust.

For Year 2, 3.44 lbs/day were from exhaust; 0.08 lbs/day were from fugitive dust.

³ Summertime and wintertime construction emissions are identical, and no seasonal distinction is made. Refer to Appendix D for detailed assumptions and modeling output files.

Source: Data modeled by AECOM in 2010

Operational Air Quality Impacts

Operational Emissions

Operational area and mobile sources of criteria pollutants for the near-term development would occur over the life of the proposed improvements and activities at the site. Area source emissions of criteria pollutants from the near-term improvements would be from heaters and water heaters, landscape maintenance, fire pits, barbeques, and fugitive dust from unvegetated areas. Mobile source emissions of criteria pollutants would be from passenger vehicles; light-duty trucks, motorcycles, and motor homes, and exhaust and entrained dust from on-site OHV activity. Trips would be generated by visitors, the proposed staff residence and RVs, and the ranger/staff station and maintenance facility.

Gasoline and diesel fuel contain benzene, ethyl benzene, toluene, xylene, and methyl tertiary butyl ether, all of which are TACs. Therefore, the proposed fuel dispenser would require separate emissions reporting and a permit from APCD under Rule 415, Transfer and Storage of Gasoline (Hernandez, pers. comm., 2010). The propane tanks would be used solely for heating and cooking at the residences and administrative building. No commercial dispensing of propane would take place at the site, and no permitting would be required.

OHV activity after completion of the near-term improvements would be similar to or slightly less than under the long-term General Plan analysis. As discussed under the General Plan analysis, while the improved facilities at Heber Dunes SVRA would attract more visitors, it is likely that the project is not creating “new” OHV users but would theoretically accommodate visitors who would visit other SVRAs or operate OHVs in nondesignated use areas in the county in the absence of the project. The enhancement of recreation opportunities at Heber Dunes SVRA would likely attract visitors who visit other OHV recreational areas in Imperial County and the immediate area, such as Ocotillo Wells SVRA, Superstition Mountain Open Riding Area, Plaster City Open Riding Area, and Imperial Sand Dunes Recreation Area that are farther from the population centers. Thus, at the regional level, the project would help accommodate increase in OHV use in a more efficient manner.

Project design features already incorporated into the project include energy-efficient heating and cooling systems, and a supplemental photovoltaic solar electric system. Furthermore, the project would comply with Regulation VIII to mitigate PM₁₀ fugitive dust emissions.

As previously stated, SVRA visitation is the highest in the late fall, winter, and early spring. Consistent with a BLM visitor survey at Imperial Sand Dunes, it is expected that Heber Dunes SVRA would experience weekends of peak usage during these seasons when there could be as many as 880 additional visitors (AECOM 2010) and 550 vehicle trips to the site. The mobile source emissions from trips to and from Heber Dunes SVRA would be highest during these peak weekends. OHV estimates for the proposed project were developed based on a factor of approximately 0.36 OHVs for each visitor to the park. During the peak season, OHVs would operate for an average of 2 hours per day at 12 mph. While some OHVs will operate for longer hours or at higher speeds for short periods of time, these estimates represent an average OHV user during a peak weekend day. OHVs operating in Heber Dunes include ATVs (60%), on-highway vehicles (20%), utility carts (10%), motorcycles (7%), and rails/buggies (3%) (Shea and Herrick, pers. comm., 2011). Other assumptions in the model assume that the majority of Heber Dunes SVRA visitors would be from Heber, El Centro, Calexico, Imperial, and Holtville, and an average round trip driving distance of 20 miles. All freeways and major roadways between these cities and the project site are paved

For peak weekend Heber Dunes SVRA usage, project information and visitor usage assumptions were input into URBEMIS2007. Emissions associated with OHV use were developed with OFFROAD2007, as discussed earlier under Methodology in Section 3.3.3. Model results are presented in Table 3.3-6. As shown, modeled operational emissions

TABLE 3.3-6. PEAK WEEKEND OPERATIONAL AIR EMISSIONS – NEAR-TERM CONDITIONS

Source	Emissions (lbs/day) ¹							
	ROG	NO _x	CO	SO _x	PM ₁₀ (exhaust)	PM ₁₀ (dust) ^{2,3}	PM ₁₀ (total)	PM _{2.5}
Area Sources	0.23	0	0	0	0	0	0	0
OHV Sources	0.64	0.61	14	0.03	0.21	88.4	88.6	0.16
Residential Mobile Sources	0.68	0.59	9	0	--	--	0.86	2.52
Visitor Mobile Sources	24.61	23.58	338.92	0.1	--	--	18.9	3.61
Total Emissions	26.16	24.78	361.92	0.13	0.21	88.4	108.36	6.29
APCD Significance Threshold	≥55	≥55	≥550	≥150	NA	NA	≥150	--
Exceeds Threshold?	NO	NO	NO	NO	NA	NA	NO	--

Notes: lbs/day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; ROG = reactive organic gases; SO_x = oxides of sulfur.

¹ Emissions modeled for wintertime conditions using the URBEMIS 2007 (Version 9.2.4) computer model.

² Fugitive dust emissions for on-road mobile sources are included in the PM₁₀ total emissions.

³ Fugitive dust emissions for OHV use are based on disturbed acreage consistent with the 2009 PM₁₀ SIP. The emission factor of 1.3x10⁻⁴ was applied to the 340-acre SVRA to estimate the additional disturbance from anthropogenic activities.

Note: The total emissions estimates shown are the highest values that would occur in the winter season. Totals may not add up to individual values since the highest emissions for a pollutant from both area and mobile sources may not occur in the same season.

Refer to Appendix D for detailed assumptions and modeling output files.

Source: Data modeled by AECOM in 2010

would not exceed APCD’s operational significance thresholds during these peak weekends. Fugitive dust emissions from the graded, but not paved parking lot and ground disturbance from OHV activity would be an additional source of PM₁₀ emissions. These emissions were calculated consistent with the methodology for additional PM₁₀ generation from anthropogenic activities as discussed in the 2009 PM₁₀ SIP. This is a conservative estimate since, according to the 2009 SIP, human activities on these areas do not reduce the level of stability or the vegetative canopy cover, and as a result cause no change in windblown dust emissions from these areas (APCD 2009, Appendix III.B). Additionally, according to the 2009 SIP, all the State Parks in Imperial County generate approximately 4.3 tpd of PM₁₀ from windblown dust, and other than Ocotillo Wells, all other State Parks generate a negligible amount of PM₁₀ fugitive dust due to human activities (APCD 2009, Appendix III.B).

As shown in Table 3.3-6, the proposed project would not exceed the thresholds of significance recommended by APCD. The project would generate less-than-significant operational emissions of ROG and NO_x, and would not cause a cumulatively considerable

net increase in emissions of ozone precursors. The project would also not generate less-than-significant operational emissions of PM₁₀ and would not cause a cumulatively considerable net increase in emissions of PM₁₀ emissions. Thus, PM₁₀ emissions would not contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase in PM₁₀ in the region. This impact would be ***less-than-significant***.

Consistency with Air Quality Plan

Air quality impacts associated with Heber Dunes SVRA operation under the proposed near-term improvements would be similar to or slightly less than under the long-term analysis of the proposed General Plan. As discussed under the General Plan analysis, operational emissions would be consistent with APCD's assumptions in the 2009 ozone AQMP and 2009 PM₁₀ SIP. Thus, these emissions would have been accounted for in APCD's emissions analysis and attainment demonstration. The proposed improvements would be consistent with the applicable air quality plans. This impact would be ***less-than-significant***.

Impacts to Sensitive Receptors

Construction-related Emissions

As discussed above, criteria air pollutant emissions during construction of the near-term improvements would not exceed APCD's significance thresholds. Thus, construction activities would not expose sensitive receptors to substantial pollutant criteria air pollutant concentrations.

Construction-related activities would result in short-term emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment for site preparation (e.g., trenching, grading, and clearing); paving; application of architectural coatings; and other miscellaneous activities. Diesel PM was identified as a TAC by ARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (OEHHA 2003).

An important consideration is that emissions from construction equipment would be reduced over the period of buildout of the proposed General Plan. In January 2001, USEPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represent a 90% reduction in NO_x emissions, 72% reduction of nonmethane hydrocarbon emissions, and 90% reduction of PM emissions in comparison to the emissions standards for the 2004 model year. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-Road Diesel Rule that are nearly identical to those finalized by USEPA on May 11, 2004. As such, engine manufacturers are now required to meet after-treatment-

based exhaust standards for NO_x and PM starting in 2011 that are more than 90% lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines.

More specifically, the dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual (MEI). Thus, the risks estimated for an MEI are higher if a fixed exposure occurs over a longer period of time. According to the California Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period and duration of activities associated with the project, in this case, the near-term improvements (Salinas, pers. comm., 2004). Because the use of off-road heavy-duty diesel equipment would be temporary and diesel PM is expected to disperse quickly (Zhu et al. 2002), further reductions in exhaust emissions would occur, and construction-related activities would not be expected to expose sensitive receptors to substantial emissions of TACs. As a result, this impact would be *less-than-significant*.

Operations-related Emissions

Air emissions from increased recreational activities associated with OHV use for the near-term improvements would be similar to or slightly less than under the proposed General Plan. As discussed under the General Plan analysis, on-site sensitive receptors would be separated from the areas with highest OHV activity. Additionally, vehicle travel on roadways by project-generated traffic would not expose sensitive receptors to fugitive dust beyond what is already occurring on the disturbed unpaved roads. The CO hotspot analysis for the General Plan, which is based on traffic generation on the peak weekend day, demonstrated that project traffic would not lead to CO concentrations in excess of the NAAQS/CAAQS. Thus, operation of the near-term improvements would not expose sensitive receptors to substantial pollutant concentrations. This impact would be *less-than-significant*.

Odors

Odors generated due to the near-term improvements would be similar to those analyzed under the proposed General Plan. As discussed under the General Plan analysis, odors generated due to construction and operational activities dissipate quickly and would not expose receptors to offensive odors. This impact would be *less-than-significant*.

Special Events

Special events held at Heber Dunes SVRA, such as OHV promotions or demonstrations, OHV events or races, concerts, community or cultural events and gatherings, sporting events, and/or receptions, may increase average daily visitation. The increase in visitors to Heber Dunes SVRA for these special events would generate increased traffic volumes and greater activity on-site.

The difference between peak weekend usage of Heber Dunes SVRA and a special event is the potential need for off-site satellite parking as on-site parking spaces may be displaced by vendors, concert locations, display areas, etc. Vehicles most likely to use satellite parking would be family cars, light-duty trucks with or without towing equipment, medium-sized vendor trucks, motor homes, and other vehicles.

These activities may bring large volumes of visitors to Heber Dunes SVRA but would not be expected to generate pollutant emissions, including fugitive dust, greater than under the typical peak use proposed under the General Plan. For example, an OHV race event may have a high volume of spectators, but the number of active OHVs would be less than normal operations. Additionally, the maximum number of OHVs planned for under the buildout peak weekend use scenario (317) is likely the maximum number of OHVs that could operate within the existing park.

As described in Section 2.7, a Special Event Permit would be required for any event that would bring a substantial number of visitors to Heber Dunes SVRA. Each Special Event Permit would be individually reviewed by OHMVR Division staff. Through the permit review process, traffic and parking control measures, including dust control measures, would be considered and required, as necessary, as conditions of approval for the permit. [APCD will be notified when a Heber Dunes SVRA special event permit process requires CEQA analysis that includes public review. Additionally, as part of the special event permit process, the applicant is required to obtain all necessary permits, including any required APCD permits. OHMVR Division will continue to work with APCD in implementing appropriate dust control measures.](#) Implementation of the traffic and parking control measures would be the responsibility of the permit applicant and proof of actions may be required, as appropriate.

As demonstrated in the traffic analysis, there is ample capacity at area intersections and roadway segments to accommodate a substantial increase in traffic volumes while still maintaining acceptable operating conditions. Therefore, no CO hotspots are anticipated to occur during special events

For these reasons, air quality levels from special events are expected to be similar in level and nature to peak use of Heber Dunes SVRA and would be considered a *less-than-significant* impact.

3.3.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to air quality. Implementation of the near-term facility improvements would not result in significant impacts to air quality.

3.3.5 Mitigation Measures

No significant impacts to air quality would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to air quality would result from the near-term facility improvements and no mitigation is required.

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3.4 Noise

This section summarizes the existing noise environment in the vicinity of Heber Dunes SVRA, identifies sensitive noise receptors in the area, and provides analysis of the future noise conditions on and surrounding the site during both construction and operation of the proposed General Plan and near-term facility improvements.

3.4.1 Existing Setting

Acoustic Fundamentals

Acoustics is the scientific study that evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid, or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise; consequently, the perception of sound is subjective and can vary substantially from person to person. Common sources of environmental noise and noise levels are presented in Table 3.4-1.

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. To avoid this and have a more usable numbering system, the decibel (dB) scale was introduced. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly added. For example, a 65-dB source of sound, such as a truck, when joined by another 65-dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100 fold increase in acoustical energy.

The loudness of sound perceived by the human ear depends primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels (dBA). For this reason, dBA can be used to predict community response to noise from the environment, including noise from transportation and stationary sources. Sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

Noise can be generated by a number of sources, including mobile sources (transportation noise sources), such as automobiles, trucks, and airplanes; and stationary sources (nontransportation noise sources), such as construction sites, machinery, and commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (decrease) depending on ground absorption

characteristics, atmospheric conditions, and the presence of physical barriers (walls, building facades, berms). Noise generated from mobile sources generally attenuate at a rate of 4.5 dB per doubling of distance (dB/DD). Stationary noise sources spread with more spherical dispersion patterns and attenuate at a rate of 6 dB to 7.5 dB/DD.

TABLE 3.4-1. TYPICAL SOUND LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet		
Typical OHV ¹	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2009; OHMVR 2010b

¹ Noise generated by OHV operation has a very wide range based on the type of vehicle, engine, exhaust system, operating level, etc. The general level shown for OHV operation in this table is based on OHMVR OHV noise standard limits, ranging from 96 to 101 dBA dependent upon manufacture date (OHMVR 2010b).

Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may additionally alter the propagation of noise and affect levels at a receiver. Furthermore, the presence of a large object (e.g., barrier, topographic features, and intervening building facades) between the source and the receptor can provide significant attenuation of noise levels at the receiver. The amount of noise level reduction or “shielding” provided by a barrier primarily depends on the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural barriers such as berms, hills, or dense woods, and human-made features such as buildings and walls, may be used as noise barriers.

Noise Descriptors

The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to describe environmental noise are defined below:

- L_{max} (Maximum Noise Level): The highest A/B/C weighted integrated noise level occurring during a specific period of time.
- L_{min} (Minimum Noise Level): The lowest A/B/C weighted integrated noise level during a specific period of time.
- Peak: The highest weighted or unweighted instantaneous peak to peak value occurring during a measurement period.
- L_n (Statistical Descriptor): The noise level exceeded $n\%$ of a specific period of time, generally accepted as an hourly statistic. An L_{10} would be the noise level exceeded 10% of the measurement period.
- L_{eq} (Equivalent Noise Level): The energy mean (average) noise level. The steady state sound level that, in a specified period of time, contains the same acoustical energy as a varying sound level over the same time period.
- L_{dn} (Day-Night Noise Level): The 24-hour L_{eq} with a 10-dB “penalty” applied during nighttime noise-sensitive hours (10 p.m. through 7 a.m.). The L_{dn} attempts to account for the fact that noise during this specific period is a potential source of disturbance with respect to normal sleeping hours.
- CNEL (Community Noise Equivalent Level): The CNEL is similar to the L_{dn} described above, but with an additional 5-dB “penalty” for the noise-sensitive hours between 7 p.m. and 10 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the CNEL is typically 0.5 dB higher than the L_{dn} .
- SEL (Sound Exposure Level): The SEL describes the cumulative exposure to sound energy over a stated period of time.
- SENEL (Single Event Noise Exposure Level): The SENEL is an SEL where the measurement period is defined by the start and end times of a single noise event, such as an automobile pass-by, aircraft flyover, or individual industrial operations.

Effects of Noise on Humans

Excessive and chronic exposure to elevated noise levels can result in auditory and nonauditory effects in humans. Auditory effects of noise on people are those relating to temporary or permanent hearing loss caused by loud noises. Nonauditory effects of exposure to elevated noise levels are those relating to behavioral and physiological effects. The nonauditory behavioral effects of noise on humans are primarily associated with the subjective effects of annoyance, nuisance, and dissatisfaction, which lead to interference with activities such as communications, sleep, and learning. The nonauditory physiological health effects of noise on humans has been the subject of considerable research efforts attempting to discover correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The mass of research infers that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to nonauditory health effects remains a subject of considerable research, with no definitive conclusions.

The degree to which noise results in annoyance and interference is highly subjective and may be influenced by a number of nonacoustic factors. The number and effect of these nonacoustic environmental and physical factors vary depending on individual characteristics of the noise environment such as sensitivity, level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source, relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be.

A change in sound level of 1 dB is generally not perceivable by humans, excluding controlled conditions and pure tones. Outside of controlled laboratory conditions, the average human ear barely perceives a change of 3 dB. A change of 5 dB generally fosters a noticeable change in human response, and an increase of 10 dB is subjectively heard as a doubling of loudness.

Existing Noise Environment

The existing noise environment at Heber Dunes SVRA is influenced primarily by transportation noise emanating from vehicular traffic on the regional and local area roadway networks. The majority of vehicular traffic noise in the vicinity of the project occurs due to SR-7, east of Heber Dunes SVRA. Additional noise sources that contribute to the existing ambient noise environment to a lesser extent include occasional aircraft overflights and seasonal operation of agricultural equipment on adjacent parcels. Most on-site noise is generated by on-site OHV recreational use.

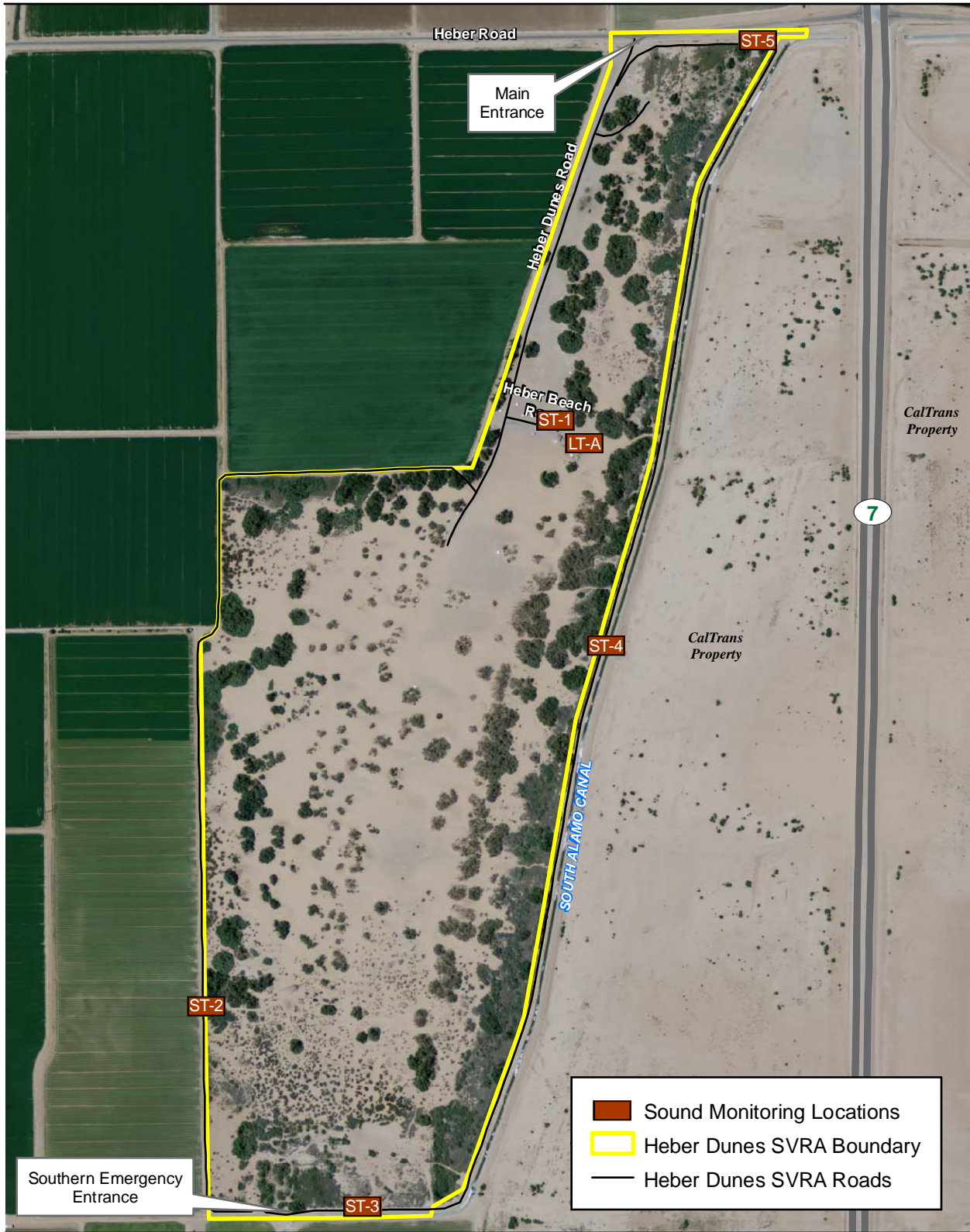
Existing Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals and places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals at interior and exterior locations. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior sound levels. Schools, places of worship, hotels, libraries, and other places where low interior sound levels are essential are also considered noise-sensitive land uses. Land immediately surrounding Heber Dunes SVRA is zoned as agricultural land uses A2 and A3 and does not include any sensitive noise receptors.

Noise-sensitive land uses in the vicinity of Heber Dunes SVRA include off-site residential uses. Off-site residential dwellings are single-family residences associated with the surrounding agricultural land uses. The nearest off-site residential dwellings are located off Fawcett Road and Claverie Road, approximately 0.4 mile west of the Heber Dunes SVRA boundary. The on-site staff residence is not considered a noise-sensitive receptor for operation or construction. The on-site staff residence provides employee housing. During daytime hours, staff members perform their work duties at various locations throughout the site and Heber Dunes SVRA is closed during nighttime hours when the residence is occupied.

Noise Survey

A survey was conducted between Friday, April 17 and Sunday, April 19, 2009, to document the existing noise environment at various locations in the vicinity. Long-term continuous noise level measurements were conducted in accordance with American National Standards Institute (ANSI) standards at two locations using Larson Davis Laboratories (LDL) Model 820 Type 1, precision integrating sound level meters (SLMs). Additional short-term noise level measurements were conducted at five locations within Heber Dunes SVRA using an LDL Model 824, Type 1 SLM. The SLMs were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure measurement accuracy. The equipment meets all pertinent specifications of the ANSI standards for Type 1 SLMs (ANSI S1.4-1983[R2006]). Meteorological conditions during the measurement periods were favorable, with clear skies, temperatures ranging from 93°F to 105°F, and light winds from the northwest at 1 to 4 mph. Noise measurement locations are shown in Figure 3.4-1. The Equivalent Noise Level (L_{eq}), Maximum Noise Level (L_{max}), and L_{50} values taken at each ambient noise measurement location are presented in Table 3.4-2.



Path: P:\2007\07080197.10 Heber Dunes\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Figures\EIR_HDSVRA_EIR_Figures\4-1_NoiseMonitoringLocs.mxd, 8/3/2011, SiemB

Source: California State Parks 2009; NAIP 2009

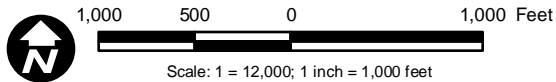


Figure 3.4-1
Sound Monitoring Locations

TABLE 3.4-2. SUMMARY OF MEASURED AMBIENT SOUND SURVEY LEVELS

Site	Location within Heber Dunes SVRA	Date/ Time	Average Measured Hourly Noise Levels, dB						
			CNEL	Daytime (7 a.m.-7 p.m.)			Nighttime (10 p.m.-7 a.m.)		
				L _{eq}	L _{max}	L ₅₀	L _{eq}	L _{max}	L ₅₀
LT-A	Adjacent to the on-site residential dwelling	April 16-17, 2009	59.5	59.2	71.2	53.0	40.7	52.1	35.8
		April 18, 2009	57.5	59.8	84.3	40.7	40.5	56.6	35.0
		April 19, 2009	61.2	55.3	71.5	41.6	39.2	53.9	34.3
ST-1	Picnic area	April 19, 2009; 1:15 PM		63.3	88.4	53.2			
ST-2	Southwest boundary	April 19, 2009; 2:40 PM		54.0	82.5	40.8			
ST-3	Southern boundary	April 19, 2009; 3:50 PM		55.7	84.7	39.1			
ST-4	Eastern boundary	April 19, 2009; 5:04 PM		44.5	60.8	41.9			
ST-5	Northern boundary	April 19, 2009; 5:46 PM		55.3	81.3	47.2			

Monitoring locations correspond to those depicted in Figure 3.4-1.

Notes: dB = A-weighted decibels; CNEL= community noise equivalent level; L_{eq} = the equivalent hourly average noise level; L₅₀ = the noise level exceeded 50% of a specific period of time; L_{max} = maximum noise level

Source: Data collected by EDAW (now AECOM) 2009

During the survey, average daytime hourly noise levels within the project area ranged from approximately 55 dBA to 63 dBA L_{eq}, with maximum noise levels that ranged from 60 dBA to 88 dBA L_{max}. Primary noise sources at the noise measurement locations were OHV operations for measurement locations on the project site and adjacent to the Heber Dunes SVRA boundary (measurement locations ST-1 through ST-4). At the time of the measurements, OHV use was moderate and it is estimated that peak use would be approximately double the activity at the time the measurements were conducted; thus, hourly noise levels during peak activity would likely be 3 dBA higher than the measured noise levels presented in Table 3.4-2. Maximum noise levels, as they are associated with individual events, would not likely increase with the increased activity. Measurement location ST-5 was found to be primarily affected by vehicular traffic on Heber Road and SR-7. The long-term monitoring location (LT-A) was primarily affected by operations of OHVs, with traffic noise from the local roadway network contributing to a lesser extent. The monitor at the LT-A was located at the on-site. Noise generated from operational activities at Heber Dunes SVRA included OHVs such as four-wheel ATVs, motorcycles, Jeeps, sand rails, and buggies. Based on the sound level measurements, it is estimated that existing sound levels from peak park use would reach approximately 50 dBA at the nearest house. While sound levels of this magnitude would not likely exceed noise ordinance limits or General Plan guidelines, they would likely be audible during quiet periods, similar to urban daytime noise, according to Table 3.4-1.

Existing Traffic Noise

Existing traffic noise levels were calculated for roadway segments in the project vicinity using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic data provided in the Existing Traffic Conditions Report prepared for the project (Fehr & Peers 2009).

Table 3.4-3 summarizes the modeled existing traffic noise levels at a representative distance of 100 feet from the centerline of the roadways in the project vicinity and lists distances from roadway centerlines to the 60-dBA, 65-dBA, and 70-dBA traffic noise contours. Traffic noise modeling results are based on existing average daily traffic volumes. As shown in Table 3.4-3, the location of the 60-dBA CNEL traffic noise contours along the local roadway network range from within the right-of-way to approximately 250 feet from the centerline of the modeled roadways. The extent to which existing land uses in the project area are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to traffic noise. As indicated in Table 3.4-3, the primary roadway of concern for traffic noise would be SR-7. The nearest receptor to the project site along these roadways would be residential uses approximately 0.5 mile north of the project site along King Road. These residences are approximately 300 feet from the centerline of the nearest travel way; thus, traffic noise levels at these residences would be approximately 59 dBA CNEL. These traffic noise levels are considered compatible with residential land uses. Due to the distance from Heber Dunes SVRA, noise generated by on-site OHV use does not contribute significantly to ambient sound levels at these residences. However, during peak OHV use, when traffic noise is low and the wind is calm, OHV activities at Heber Dunes SVRA would be audible to people outside at these residences over the existing ambient noise environment.

TABLE 3.4-3. SUMMARY OF MODELED EXISTING TRAFFIC NOISE LEVELS

Roadway	Segment	CNEL (dB) 100 feet	Distance (feet) from Roadway Centerline to CNEL Contour		
			70 dBA	65 dBA	60 dBA
SR-7	North of Heber Road	66	54	115	248
	South of Heber Road	66	54	115	248
Heber Road	East of SR-7	54	--	--	20
	SR-7	58	--	--	36
	Heber Dunes SVRA Entrance	58	--	--	39
	Mets Road	59	--	20	42
Mets Road	North of Heber Road	52	--	--	16

Notes: dBA = A-weighted decibel; CNEL= Community Noise Equivalent Level, -- = Noise level occurs within right-of-way

Source: Data modeled by AECOM 2010

Regulatory Setting

Various private and public agencies have established noise guidelines and standards to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Applicable standards and guidelines are discussed below.

Federal Regulations

The EPA Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health and welfare and the environment. Administrators of EPA determined in 1981 that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982, responsibilities for regulating noise-control policies were transferred to state and local governments. However, noise-control guidelines and regulations contained in the rulings of EPA in prior years remain in place by designated federal agencies where relevant.

In respect to noise generated by OHVs, the Federal Noise Control Act of 1972 established guidelines for the testing and labeling of OHVs. The noise emission standards were originally intended for application to OHVs distributed and sold through commerce. This measurement procedure and labeling standard is known as EPA F-76a and requires testing of a vehicle while accelerating past the measurement location at a perpendicular distance of 50 feet. During this test procedure, the unit under test must not exceed 80 dB for engines with a displacement smaller than 170 cubic centimeters (cc) and 82 dB for engines with a displacement greater than 170 cc. As mentioned, this procedure is specifically addressed to the testing of OHVs as developed and distributed by manufacturers and retailers. As such, the criteria and procedures established in the Federal Noise Control Act of 1972 do not account for increases in OHV noise due to modifications to the vehicle by individual owners, which has become commonplace to increase the performance of OHVs.

In addition, because the test method requires a professional user and adequate space and terrain for implementation, it is not practical as a field enforcement test. In an effort to develop a practical enforcement test method, the Society of Automotive Engineers in cooperation with other groups developed the SAE J-1287 procedure that measures the noise from a stationary vehicle at 20 inches from the exhaust outlet and 45 degrees to the exhaust axis. This test is simpler to perform than the EPA F-76a test procedure, requiring only a relatively flat open surface free of large reflecting surfaces within 16 feet of the vehicle (CSP 2005).

State Regulations

California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

CCR, Title 24, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The Code provides acoustical regulations for both exterior-to-interior sound insulation and sound and impact isolation between adjacent spaces of various occupied units. Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dB L_{dn} , with windows closed, in any habitable room for general residential uses.

The Off-Highway Motor Vehicle Recreation Act of 2003 (California State Assembly 2002) and California Vehicle Code Section 38370 establish standards for regulating noise levels generated from the operation of motor vehicles. The Off-Highway Motor Vehicle Recreation Act adopted the SAE J-1287 stationary test procedure for OHVs and established the following noise-level limits:

On and after January 1, 2003, off-highway motor vehicles, when operating pursuant to Section 38001, shall at all times be equipped with a silencer, or other device, which limits noise emissions. (1) Noise emissions of competition off-highway vehicles manufactured on or after January 1, 1998, shall be limited to not more than 96 dB, and if manufactured prior to January 1, 1998, to not more than 101 dB, when measured from a distance of 20 inches using test procedures established by the Society of Automotive Engineers under Standard J-1287, as applicable. Noise emissions of all other off-highway vehicles shall be limited to not more than 96 dB if manufactured on or after January 1, 1986, and not more than 101 dB if manufactured prior to January 1, 1986, when measured from a distance of 20 inches using test procedures established by the Society of Automotive Engineers under Standard J-1287, as applicable.

Local Plans and Policies

Imperial County General Plan

While not applicable to Heber Dunes SVRA, the Imperial County General Plan Noise Element (Imperial County n.d.) contains goals and policies to protect citizens from exposure to excessive noise. The Noise Element establishes standards for various land use categories with respect to transportation and nontransportation noise sources. For the purposes of the Noise Element, transportation noise sources are defined as traffic on public

roadways, railroad line operations, and aircraft in flight. Nontransportation noise sources may include industrial operations; outdoor recreation facilities including OHVs; heating, ventilating, and air conditioning units; loading docks; construction equipment; and others. The standards provide the basis for planning decisions on determining noise mitigation requirements. The Noise Element includes noise/land use compatibility standards, interior noise standards, property line noise standards, construction noise regulations, and guidelines for significant increases of ambient noise levels.

Typical Construction Noise Standards

In many jurisdictions, construction noise regulations typically state that construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq} , when averaged over an 8-hour period, and measured at the nearest sensitive receptor. This general standard assumes a construction period, relative to an individual sensitive receptor, of days or weeks. Also, construction equipment operation is typically limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. Saturday.

Significant Increase of Ambient Noise Levels

In many jurisdictions, an increase of noise levels generally results in an adverse impact to the noise environment. To address this noise impact, it is common for jurisdictions to typically state that if future noise levels after the project is completed are within the “normally acceptable” noise levels but will result in an increase of 5 dB CNEL or greater, the project will have a potentially significant noise impact. It is also typical for jurisdictions to find that if the future noise level after the project is completed will be greater than the “normally acceptable” noise levels, a noise increase of 3 dB CNEL or greater shall be considered a potentially significant noise impact. However, this determination is at the discretion of each agency as demonstrated by Caltrans, which uses a 12-dBA L_{eq} threshold for substantial permanent increase. For purposes of this analysis, a 10-dBA increase in ambient noise levels would be considered substantial regardless of the absolute existing or future noise level. If the ambient noise level at a receptor is at or within 1 dBA of the applicable standard, a 5-dBA increase in ambient noise levels would be considered substantial. If the ambient noise level at a receptor exceeds the applicable standard, a 3-dBA increase would be considered substantial.

3.4.2 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant noise impact if it would result in the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels; and/or
- For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

3.4.3 Environmental Evaluation

General Plan Analysis

Construction Noise

Noise impacts from construction are a function of the noise generated by equipment, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Noise levels from construction activities are typically considered as point sources and would drop off at a rate of 6 dBA per doubling of distance over hard site surfaces, such as streets and parking lots. The drop-off rate would be approximately 7.5 dBA per doubling of distance for soft site surfaces, such as grass fields and open terrain with vegetation (FTA 2006).

Table 3.4-4 presents a list of noise generation levels for equipment typically used in construction. As shown in Table 3.4-4, maximum noise levels from construction equipment range from approximately 70 dBA L_{max} to 90 dBA L_{max} at 50 feet from the source. The noise levels vary for individual pieces of equipment, as equipment may come in different sizes and with different engines. Construction equipment noise levels also vary as a function of the activity level or duty cycle. Typical construction projects, with equipment moving from one point to another, work breaks, and idle time, have long-term noise averages that are lower than louder short-term noise events. Additionally, due to the dynamic nature of a construction site, noise levels are calculated from the center of the activity. For purposes of

analysis of this project, a maximum 1-hour average noise level of 84 dBA L_{eq} at a distance of 50 feet from the center of typical construction activity is assumed to occur.

TABLE 3.4-4. CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Equipment	Maximum Noise Level (dBA) 50 ft from Source
All other equipment (5 HP or less)	85
Backhoe	80
Chain Saw	85
Compactor (ground)	80
Compressor (air)	80
Concrete Mixer Truck	85
Concrete Pump	82
Concrete Saw	90
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84
Front End Loader	80
Generator (25 KVA or less)	70
Generator (more than 25 KVA)	82
Grader	85
Jackhammer	85
Paver	85
Pneumatic Tools	85
Pumps	77
Scraper	85
Soil Mix Drill Rig	80
Tractor	84
Vibratory Concrete Mixer	80
Welder	73

HP = horse power

KVA = kilovolt ampere

Source: FTA 2006

The nearest off-site receptors are approximately 0.5 mile from the edge of Heber Dunes SVRA. The intervening ground is used primarily for agricultural purposes and is considered acoustically soft. This distance would provide an atmospheric attenuation of approximately 42 dBA. As there are no specific construction plans detailed in the proposed General Plan other than those analyzed under the near-term facility improvement projects, construction activities could occur along the Heber Dunes SVRA boundaries, which would represent a reasonably conservative scenario for impact analysis purposes. Based on these parameters, construction noise levels would attenuate to 42 dBA L_{eq} or less at the nearest off-site

receptors. Thus, construction of the proposed project would not expose off-site receptors to noise levels in excess of applicable standards and would not create substantial temporary increases in ambient noise levels. A ***less-than-significant*** impact would result.

OHMVR Division does not have noise level standards for construction activities but considers the typical threshold of 75 dBA L_{eq} over an 8-hour period appropriate. The on-site staff residence is not considered a sensitive noise receptor as it provides employee housing for Heber Dunes SVRA staff. Construction would only occur during normal weekday daytime hours when resident staff would not be occupying the residence but would be performing work duties at various locations throughout Heber Dunes SVRA. In addition, the existing noise environment at Heber Dunes SVRA often includes loud peak and sustained noises levels near the staff residence due to OHV use. Because construction noise would be temporary, staff would generally not be present throughout the duration of the construction workday at the residence, and the existing noise environment includes active OHV use, construction noise at the on-site residence is considered a ***less-than-significant*** impact.

Operational Noise from Park Activities

Noise from increased recreational activities associated with OHV use under the proposed General Plan has been estimated based on sound level data collected by AECOM at Heber Dunes SVRA and similar facilities. The reference noise measurements are summarized in Table 3.4-5 and detailed measurement data for measurements gathered by AECOM are provided in Appendix E. The OHV activities are considered moving point sources for noise modeling and have similar drop-off rates as described for construction noise sources. Additionally, as with construction activities, due to the movement of the individual sources (i.e., OHV and people), noise levels from proposed activities are predicted from the center of Heber Dunes SVRA.

Increased activity within Heber Dunes SVRA, as envisioned by the proposed General Plan, would result in increased noise levels. Under the proposed General Plan, OHV use would continue to be the primary noise source. Increases in noise associated with non-OHV use would be minor in comparison. For analysis purposes, it is anticipated the OHV use within the park would increase by approximately three and a half times by buildout of the General Plan. An increase in OHV activity of this much would result in an approximate 7-dBA increase in noise levels over current noise levels generated during periods of maximum use. A 7-dBA increase would be readily perceivable,, but would not result in noise levels in excess of applicable standards, and while the increase would be readily noticeable, it would not create a substantial permanent increase in ambient noise levels; thus, the increase would be considered ***less-than-significant***.

TABLE 3.4-5. PREDICTED WEEKEND TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Modeled Noise Level at 100 Feet (dBA L _{eq})					
		Existing	2030 without Project	Increase over Existing	2030 with Project	Increase over Existing	Increase due to Project
SR-7	North of Heber Road	62	64	2	64	2	0
	South of Heber Road	61	64	3	64	3	0
Heber Road	East of SR-7	49	51	2	52	3	1
	SR-7 to Heber Dunes SVRA Entrance	51	52	1	55	4	3
	Heber Dunes SVRA Entrance to Mets Road	53	55	2	58	5	3
	West of Mets Road	53	55	2	58	5	3
Mets Road	North of Heber Road	43	46	3	48	5	2

* Receptor ID corresponds to locations shown in Figures 3.4-1

A new source of nighttime noise could be generated from managed camping activities. Noise generation would be typical of campground activities, including conversations, occasional vehicle noise, music, and other evening activities. Management of the camping activities would include a ranger patrol and enforcement of quiet hours. OHV operation would not be allowed during nighttime hours. Because of the distance to sensitive receptors and the controlled camping atmosphere, this potential new source of nighttime noise would not generate excessive noise levels or exceed applicable standards and a *less-than-significant impact* would result.

The project would not place sensitive receptors closer to a public or private airport where they could experience excessive noise levels. The occasional overhead flights currently do not, and would not, create excessive noise at Heber Dunes SVRA and a *less-than-significant impact* from airport noise would result.

Noise from Increases in Traffic

Traffic noise modeling was conducted using the FHWA Highway Traffic Noise Prediction Model and traffic data provided by the project traffic engineer (Fehr & Peers 2010). Traffic noise modeling was conducted for both the existing conditions and for future conditions with and without implementation of the proposed General Plan.

Traffic noise predictions are based on peak-traffic hour volumes and the posted speed limit. Traffic volumes were taken from the project traffic report (Fehr & Peers 2010). For modeling purposes, the existing, and future (year 2030) conditions are assumed to use the same roadway geometries, traffic mix, and speeds. Table 3.4-5 summarizes the modeling

and predicted noise level increases due to the development proposed under the proposed General Plan. A sample of the modeling input and output sheets is provided in Appendix E. Weekend noise levels are evaluated as weekends represent the period of heaviest use.

As shown in Table 3.4-5, cumulative increases in traffic noise levels would range from 2 dBA to 5 dBA, while increases directly associated with the proposed General Plan would range from 0 dBA to 3 dBA. The greatest increases would occur along Heber Road west of SR-7 and Mets Road, north of Heber Road. However, the land uses directly adjacent to these roadways are agricultural and there are no noise-sensitive receptors. Additionally, due to the low noise levels along these roadways, increases of this nature would not be considered significant. Therefore, the proposed project is considered to have a *less-than-significant* impact to off-site traffic noise levels.

Special Events

As described in Section 2.7, implementation of the proposed General Plan and near-term facility improvements would likely make Heber Dunes SVRA more appealing and popular as a location for special events. Special events held at Heber Dunes SVRA, such as OHV promotions or demonstrations, OHV events or races, concerts, community or cultural events and gatherings, sporting events, or receptions, may substantially increase visitation on particular days. The increase in visitors to Heber Dunes SVRA for these special events would generate additional noise from increased traffic volumes and greater activity on-site. These activities may bring large volumes of visitors to Heber Dunes SVRA but would not be expected to generate noise greater than peak use under the proposed General Plan. For example, an OHV race event may have a high volume of spectators, but the number of active OHVs would be less than normal operations. In addition, noise generation at a special event, such as loud speakers for a concert, would be located in the main gathering area near the central portion of Heber Dunes SVRA, thus allowing for noise to attenuate prior to reaching the site boundaries. For these reasons, noise levels from special events are expected to be similar in level and nature to peak use of Heber Dunes SVRA and would be considered a *less-than-significant* impact.

Near-Term Facility Improvements Analysis

Construction Noise

Construction of the proposed near-term facility improvements, including demolition of on-site structures, would occur over approximately 24 months. Construction would only occur between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 5:00 p.m. on Saturdays. No construction would occur on Sundays or holidays.

As previously mentioned, typical construction generates approximately 84 dBA L_{eq} at a distance of 50 feet from the center of the activity. The majority of the construction work would be grading, trenching, and site preparation, with limited building construction and paving activities. Following site preparation, some areas would be shaped for OHV use. Typical construction equipment during grading and excavation would include bulldozers, graders, backhoes, and front-end loaders. No rock breaking is anticipated with the development of the proposed facilities. Building construction would typically involve the use of generators, compressors, flat bed trucks, rough terrain forklifts, concrete mixers, front-end loaders/backhoes, and small tractors. Concrete placement would involve the use of rollers, asphalt trucks, paving equipment, and truck-mounted painting compressors.

The majority of the site is undeveloped and would not require demolition activities. Demolition would only occur at the existing garage and maintenance area and would involve the removal of a garage and fuel tanks. Demolition would likely involve a bulldozer, front-end loader, and haul truck. It is assumed that the debris would be hauled in 14-CY trucks requiring a maximum of 4 two-way truck trips per day.

Construction of the picnic shelters and bleachers near the training track would result in minimal disturbance and, thus, would require the use of very few pieces of heavy construction equipment. It is anticipated that a maximum of one small piece of equipment, such as a small dozer or loader, would be required during initial clearing. Noise levels from a single small loader/dozer may reach as high as 80 dBA L_{max} for a few seconds, while average hourly noise levels, with breaks and the equipment moving about the site, would be approximately 75 dBA L_{eq} at 40 feet. Therefore, construction activities would not exceed the typical threshold of 75 dBA L_{eq} beyond 40 feet.

The nearest sensitive off-site receptors to the project site are residences located approximately 0.5 mile north and east of Heber Dunes SVRA. Noise levels from construction would attenuate to approximately 42 dBA L_{eq} at this distance. Construction of the near-term facilities would not expose off-site receptors to noise levels in excess of applicable standards and would not create substantial temporary increases in ambient noise levels; thus, a *less-than-significant* impact would result.

As described under the General Plan analysis, construction noise would be temporary, and staff would generally not be present throughout the duration of the construction workday at the residence. Thus, construction noise at the on-site residence is considered a *less-than-significant* impact.

Operational Noise

Noise Impacts from Operations

Noise associated with operation of Heber Dunes SVRA after completion of the near-term facility improvements would be similar to operation noise associated with the proposed General Plan. As stated, the increase in activity would potentially result in an approximate 7-dBA increase, which while readily noticeable would not be considered a significant increase as noise levels at local sensitive receptors would remain below the applicable standards. Other activities associated with the near-term improvements would result in minor increases in noise levels. Noise levels associated with operation would not exceed applicable standards would not create a substantial permanent increase in ambient noise levels; thus, a ***less-than-significant*** impact would result.

The project would not place sensitive receptors closer to a public or private airport where they could experience excessive noise levels. The occasional overhead flights currently do not, and would not, create excessive noise at the Heber Dunes SVRA and a ***less-than-significant*** impact from airport noise would result.

Traffic Noise

Additional traffic generation from the near-term facility improvements would be similar or slightly less than that analyzed above for the proposed General Plan. As shown in Table 3.4-5, increases in traffic noise levels directly associated with anticipated increases in visitation would range from 0 dBA to 3 dBA. As the greatest increases would occur along Heber Road west of SR-7 and Mets Road north of Heber Road, and there are no noise sensitive receptors, the proposed project is considered to have a ***less-than-significant*** impact to off-site traffic noise levels.

3.4.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant noise impacts to noise-sensitive receptors. Implementation of the near-term facility improvements would also not result in significant noise impacts.

3.4.5 Mitigation Measures

No significant noise impacts would result with implementation of the proposed General Plan and no mitigation is required. No significant noise impacts would result from the near-term facility improvements and no mitigation is required.

3.5 Agricultural Resources

This section includes an evaluation of the potential environmental effect of the proposed project on agricultural resources, including a discussion of relevant agricultural policies and plans.

3.5.1 Existing Setting

Imperial County is an active and highly productive agricultural area, with total gross agricultural production value exceeding one billion dollars. Agricultural commodities produced in Imperial County generally include vegetable and melon crops, field crops, livestock, fruit and nut crops, and seed and nursery crops. In 2008, there were approximately 599,040 acres of land in crop production and more than 375,403 head of cattle in Imperial County. The top agricultural products from Imperial County, based on gross value in 2008, were cattle, alfalfa, wheat, head and leaf lettuce, broccoli, sundangrass, Bermuda grass, hay, carrots, and cantaloupes (Imperial County 2008c).

Livestock production, or animal husbandry, represents the second major form of agricultural production in Imperial County. Livestock production focuses on the production of beef cattle, sheep, wool, dairy products, swine, and, more recently, fish and other aquatic products. Imperial County offers many advantages to livestock producers. Locally grown crops provide a variety of feed ingredients for beef cattle, dairy cattle, sheep, and other animals, and adequate supplies of clean, fresh water are available from water delivery systems. Although hot in the summer, the climate is dry and mild in winter, making feeding conditions ideal for cattle and sheep.

Of Imperial County's 2,942,080 acres, approximately 20% of the land is irrigated for agricultural purposes, particularly in the central area known as Imperial Valley (Imperial County 1996). Heber Dunes SVRA is surrounded almost entirely by active agricultural fields, with irrigated cropland abutting the majority of the property boundaries. The overwhelming majority of land in the project vicinity is used for crop production, currently for growing alfalfa with a rotation of other crops. The extensive series of canals traversing the area serve as a source of irrigation water for agricultural activities.

The Heber Dunes SVRA site has never been used for agriculture. The site was never converted to farmland because sand dunes and salt accumulations in the soils made the site too difficult and expensive to farm (Herrick 2008). Thus, the site has never been farmed.

Agricultural Designations and Zoning

The land use designation applied to the site by the Imperial County General Plan, as well as most surrounding land, is Agriculture (Imperial County 2008a). The nearest land use

designation other than Agriculture is the Gateway Specific Plan Area, which is located approximately 1 mile south near SR-98. The Heber Dunes SVRA site is zoned as G/S by Imperial County (Imperial County 1998a). The purpose of the G/S zone is to designate areas that allow for the construction, development, and operation of governmental facilities and special public facilities. The surrounding parcels are zoned for agricultural use as either General Agriculture (A2) or Heavy Agriculture (A3). The A2 zoning designation requires a lot size of 40 acres or greater, with the intent to designate areas that are suitable and intended primarily for agricultural uses (limited) and agriculture-related compatible uses. The A3 zone also requires parcels of 40 acres or more with the intent to promote the heaviest of agricultural uses in the most suitable land areas of Imperial County. Uses in the A3 zoning designation are limited primarily to agriculture-related uses and agricultural activities that are compatible with agricultural uses.

On-Site Soils

A soil survey was prepared for Imperial County that includes a map of soils found at the project site (USDA 1981). The soil survey indicates that six soil types exist on the project site. The majority of the site, 83%, is composed of Rositas fine sand (284 acres). Other on-site soil types are Meloland and Holtville loams (21 acres), Vint loamy very fine sand (13 acres), Meloland very fine sandy loam (12 acres), Vint and Indio very fine sandy loams (9 acres), and Indio loam (1 acre).

Agricultural Land Values

Land Capability Classification and Storie Index

The United States Department of Agriculture (USDA) and Natural Resource Conservation Service (NRCS) use two typical rating systems to determine a soil's agricultural suitability: the Land Capability Classification and the Storie Index Rating System. Both systems generally classify "prime" soils as those with the absence of soil limitation, which, if present, would require the application of management techniques to ensure agricultural viability (USDA 1981).

The Land Capability Classification reflects the soil's ability to support common crops and pasture plants without compromising the soil's quality over the long term. The Land Capability Classification system uses eight Land Capability Classes (I through VIII) to rank soils. Prime farmlands generally correspond to Land Capability ratings of Class I or Class II; soils that are less suitable for farming are assigned to higher classes. Although only Class I and II soils are normally considered as prime soil, the Agricultural Element of the Imperial County General Plan also considers Class III soils as prime soils given appropriate water and climate conditions. All six soil types found on-site are classified as Class VII soils when not irrigated (NRCS 2010).

The Storie Index expresses numerically the relative degree of suitability, or grade, of a soil for intensive agriculture based on soils characteristics. The Storie Index Ratings System ranks soil characteristics according to their suitability for agriculture from Grade 1 soils that have few or no limitations for agricultural production, to Grade 6 soils that are not suitable for agriculture. Under this system, soils identified as less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or completely removed. Rositas fine sand (over 80% of the project site), Meloland very fine sandy loam, and Meloland and Holtville loams have a Storie Index Rating of 3 (fair). Vint loamy very fine sand and Vint and Indio very fine sandy loams have a rating of 2 (good), and Indio loam has a rating of 1 (excellent) (NRCS 2010).

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) monitors and documents land use changes that specifically affect California's agricultural land. The FMMP program classifies the land's suitability for agricultural production, which includes physical and chemical characteristics of soils and specified land use characteristics. The FMMP classifies land as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land. Within Imperial County, the FMMP designates 196,177 acres of land as Prime Farmland and 311,645 acres as Farmland of Statewide Importance (California Department of Conservation 2006).

The California Department of Conservation delineates which soil types meet the criteria for Prime Farmland and Farmland of Statewide Importance unique to each county. Of the soil on-site, 83% is composed of Rositas Fine Sand, which is included on the Imperial County soil candidate listing for Farmland of Statewide Importance. Approximately 17% of the soils found on-site are listed as meeting the criteria for Prime Farmland (California Department of Conservation 2005).

Climate

The climate within the project is arid, with hot summers and mild winters. Sunshine averages more than 8 hours per day, even in winter. The climate can be extreme because the clear skies and low humidity in the desert create high temperatures by day and rapid cooling by night. Precipitation throughout the Imperial Valley is uneven but averages less than 3 inches per year, with June generally the driest month.

Due to the arid climate, irrigation is critical for crop production in Imperial County. Although some crops are affected by salinity, extreme temperatures, and other environmental factors, the existing water delivery system overcomes the lack of precipitation in this otherwise arid region as a significant limiting factor to intensive crop production.

Regulatory Setting

Imperial County Farm Bureau

Imperial County Farm Bureau is a nongovernmental, nonprofit, voluntary membership organization whose purpose is to protect and promote agricultural interests in Imperial County, the state, and the nation through public relations, education, and advocacy to support the economic advancement of agriculture balanced with appropriate management of natural resources. The Farm Bureau strives to protect and improve the abilities of farmers and ranchers to provide a safe and reliable supply of food and fiber through responsible stewardship of natural resources.

Williamson Act

The California Land Conservation Act (Williamson Act) of 1965 is the state's principal policy for the "preservation of a maximum amount of the limited supply of agriculture land" in the state (Government Code Section 51220). The purpose of the Williamson Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. The Williamson Act created an arrangement whereby private landowners contract with counties and cities to voluntarily restrict their land to agricultural and compatible open space uses for a minimum of 10 years. In return for this guarantee by landowners, the government jurisdiction assesses taxes based on the agricultural value of the land rather than the market value, which typically results in a substantial reduction in taxes. The proposed General Plan project is not under a Williamson Act contract.

Imperial County

The Imperial County General Plan contains an Agricultural Element that identifies the goals, objectives, policies and measures, and time frames related to conserving agricultural lands while minimizing or avoiding conflicts with urban and other land uses (Imperial County 1996). The following are relevant policies from the Agriculture Element; however, because the project site was deeded to OHMVR Division in 2007, the project is not required to adhere to these policies.

Objective 2.6: Discourage the development of new residential or other non-agricultural areas outside of city "spheres of influence" unless designated for non-agricultural use on the County General Plan, or for necessary public facilities.

Goal 3: Limit the introduction of conflicting uses into farming areas, including residential development of existing parcels, which may create the potential for conflict with continued agricultural use of adjacent property.

3.5.2 Thresholds of Significance

The proposed General Plan project would have significant environmental impacts related to agricultural resources if it would do the following:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency, to nonagricultural use;
- Conflict with existing zoning for agricultural use or a Williamson Act contract; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to nonagricultural use or conversion of forest land to nonforest use.

3.5.3 Environmental Evaluation

General Plan Analysis

Heber Dunes SVRA is surrounded by agricultural uses, but the site itself is not, nor has it historically been used for, agriculture due to unsuitable soils conditions. The Heber Dunes SVRA site is classified as Other Land per the FMMP, which typically includes vacant and nonagricultural land. The entire north, east, and south boundaries and a majority of the western boundary of the project site are adjacent to land designated as Prime Farmland. A portion of the northwest boundary is adjacent to land classified as Farmland of Statewide Importance (California Department of Conservation 2006). Thus, because the site is not used for agriculture and is classified as Other Land, and because the site is currently used for OHV recreation, implementation of the proposed General Plan would not directly convert Prime Farmland, Unique Farmland, or Farmland of Statewide importance to a nonagricultural use. Though soils on the project site are listed as candidate soils for either Prime Farmland or Farmland of Statewide Importance, the on-site conditions, such as high salinity, sand dunes, and no irrigation system, are not conducive to agricultural production. In addition, the Storie Index Rating and Land Capability Classifications indicate that the on-site soils are not highly valuable for agriculture. For these reasons, the direct impact to or conversion of important Farmland types would be *less-than-significant*.

The proposed General Plan would not change the current land uses of Heber Dunes SVRA. OHV use and social gathering would continue to take place within Heber Dunes SVRA. The proposed General Plan would provide improved facilities and enhanced opportunities for both recreational use and passive recreation such as picnicking and gathering. With the betterment of facilities at Heber Dunes SVRA and population increases within Imperial County, use of Heber Dunes SVRA may increase and, thus, an increase in traffic, on-site dust

generation, and noise may result. However, dust and noise are already generated from current OHV use of the site and a potential increase would not create substantial impacts to agricultural operations surrounding Heber Dunes SVRA. In addition, dust and noise generation also results from agricultural operations. The surrounding vast agricultural operations result in minimal sensitive receptors located in the vicinity of Heber Dunes SVRA. The continued operation of OHVs at Heber Dunes SVRA, including the potential generation of additional traffic, dust, and noise, are considered to be compatible with the surrounding agricultural operations.

The continued use of Heber Dunes SVRA for OHV recreation would not alter the existing environment in a manner that would cause the conversion of surrounding agricultural uses to nonagricultural uses and would not result in the permanent loss of an agricultural resource. The long-range vision for the proposed General Plan may involve future land acquisitions or Heber Dunes SVRA expansions that would require agricultural analysis per CEQA. There are no forest lands in the vicinity that could be affected by the project. Therefore, the impact of agricultural or forest land conversion resulting from the project is considered *less-than-significant*.

If land were to be acquired in the future for an expansion of Heber Dunes SVRA under the proposed General Plan, there would likely be a potential for significant agricultural impacts due to the active agricultural uses surrounding the property. Any future acquisition of land would require additional environmental review to determine the potential for agricultural impacts.

The project site was deeded to OHMVR Division in 2007 and is not required to adhere to Imperial County policies, such as land use designations or zoning; however, this discussion is provided to assess compatibility with surrounding agricultural uses and designations. Heber Dunes SVRA is zoned by Imperial County as G/S and designated as Agriculture. All the land immediately surrounding Heber Dunes SVRA is zoned as agriculture and has a land use designation of Agriculture. The improvements and enhancements of the existing OHV use and social gathering that currently take place at Heber Dunes SVRA, as proposed by the General Plan, would not create conflicts or incompatibilities with the existing agricultural designations surrounding the site. Heber Dunes SVRA and existing agricultural surroundings currently coexist and are considered compatible, as the agricultural fields minimize sensitive receptors in the immediate area. The site is not under a Williamson Act contract. For these reasons, implementation of the proposed General Plan would be consistent with Imperial County land use designations and would not conflict with a Williamson Act contract. A *less-than-significant* impact regarding agricultural designations would result.

Near-Term Facility Improvements Analysis

As described under the proposed General Plan analysis, Heber Dunes SVRA is not, nor has historically been used for, agriculture, and is classified as Other Land per the FMMP. Because the site is not used for agriculture and is classified as Other Land, implementation of the proposed near-term facility improvements, which are all located within the Heber Dunes SVRA site, would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a nonagricultural use. The impact to or conversion of these important Farmland types would be *less-than-significant*.

Similar to the proposed General Plan analysis, the near-term facility improvements would not change the current land uses of Heber Dunes SVRA. OHV use and social gathering would continue to take place within Heber Dunes SVRA, and the near-term facility improvements would provide for necessary maintenance and administration facilities, staff housing, a training track, and picnic and gathering areas to support and enhance the existing recreation opportunities. These improved facilities and expanded recreation opportunities at Heber Dunes SVRA may increase use of Heber Dunes SVRA and, thus, additional traffic, on-site dust generation, and noise may result. Traffic, dust, and noise are already generated from current OHV use, and a potential increase would not create substantial impacts to agricultural operations surrounding Heber Dunes SVRA. The improvement of facilities at Heber Dunes SVRA for continued and enhanced OHV recreation would not alter the existing environment in a manner that would cause the conversion of surrounding agricultural uses to nonagricultural uses, and would not result in the permanent loss of an agricultural resource. There are no forest lands in the vicinity that could be affected. Therefore, the impact of agricultural or forest land conversion resulting from the project is considered *less-than-significant*.

The analysis of Imperial County agricultural land use designations and zoning compatibility under the proposed General Plan is applicable to the near-term facility improvements, as all improvements would be located within Heber Dunes SVRA and would serve to enhance the existing use of the site. Implementation of the proposed near-term facility improvements would be consistent with Imperial County land use designations and would not conflict with a Williamson Act contract. A *less-than-significant* impact regarding agricultural designations would result.

3.5.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to agricultural resources. Implementation of the near-term facility improvements would not result in significant impacts to agricultural resources.

3.5.5 Mitigation Measures

No significant impacts to agricultural resources would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to agricultural resources would result from the near-term facility improvements and no mitigation is required.

3.6 Visual Resources

This section provides a discussion of the visual characteristics of the project site and surrounding area. Also discussed are relevant visual resource policies applicable to the continued management of visual resources on the project site.

3.6.1 Existing Setting

Project Site

Heber Dunes SVRA is dominated by low sandy dunes and desert scrub vegetation, which is in contrast to the surrounding level irrigated agricultural fields. Vegetation ranges from small shrubs and bushes to tall trees that block views to and from the site. The densest vegetation occurs along the eastern boundary, obscuring views of the site from areas west, including SR-7. Much of the project site is covered with a pattern of trails through the dunes and vegetation, as shown in Photo 3.6-1. The dunes undulate across the site, but there are no substantially large or pronounced geologic formations visible on the site.



Photo 3.6-1. View of dunes within Heber Dunes SVRA

OHV users access Heber Dunes SVRA for recreation, and the site is generally family oriented. Typically, most of the users are on quads; however, larger dune buggies and

motorcycles are also used. Users and their equipment, including large trucks and trailers, are visible throughout Heber Dunes SVRA.

Built visual elements on the project site include a public restroom facility (Photo 3.6-2), other older concrete block structures, and wooden and metal sheds.



Photo 3.6-2. View of restroom facilities

There is a fenced storage and maintenance area with multiple metal storage units. An RV serves as the park staff's residence. Most of these human-made elements are centrally located and clustered together. In the southwest corner of the site, three large overhead SDG&E transmission towers traverse the property, as shown in Photo 3.6-3. These towers carry overhead transmission lines, which connect to smaller transmission poles located both on- and off-site.



Photo 3.6-3. View of SDG&E electrical tower and overhead transmission lines

Picnic facilities are located throughout the project site and typically include a concrete slab with a shade structure covering picnic tables, as shown in Photo 3.6-4. Dumpsters and trash cans are also visible throughout the site, as well as CSP signage.



Photo 3.6-4. Typical picnic facility at Heber Dunes SVRA

Surrounding Area

The area of Imperial County that surrounds the project site is generally characterized by flat agricultural land, as shown in Photo 3.6-5. The flat cropland, paired with minimal tall landscaping and structures, allows for vast views in almost all directions. The colors of the landscape vary throughout the year as the growing seasons change or fields are left fallow. The views surrounding the project site include the presence of agricultural equipment and supplies such as stacks of hay bales, large farm machinery, liquid holding tanks, storage sheds, irrigation equipment, and other similar agricultural-related items. There are also electrical transmission poles and overhead power lines that are the tallest features in the immediate vicinity of the project site and that dominate the skyline in certain locations (Photo 3.6-3).



Photo 3.6-5. Agricultural lands adjacent to Heber Dunes SVRA

The South Alamo Canal borders the project site to the east and south, but this canal is generally not visible unless the viewer is immediately adjacent to it. This is because the canal is located at-grade and does not have elevated banks or side walls, as shown in Photo 3.6-6.



Photo 3.6-6. View of South Alamo Canal

Project Viewshed

Despite the overall flat terrain surrounding the project site, the viewshed both to and from the project site is fairly limited by dense vegetation around the perimeter of Heber Dunes SVRA. Depending on on-site vegetation height and thickness, there are some vast views from portions of the project site, as shown in Photo 3.6-7. However, the tall dense trees located along the boundaries of the project site, specifically on the eastern border, obscure most of the visibility onto and off of the site (Photo 3.6-8). Therefore, even though views of the site are afforded from distant areas in all directions, actual views of the interior of the site are generally obscured.



Photo 3.6-7. View from Heber Dunes SVRA of adjacent agricultural fields



Photo 3.6-8. Eastern boundary of Heber Dunes SVRA

Sensitive Viewers

There are a limited number of sensitive receptors with views of Heber Dunes SVRA. The nearest residential receptors are more than 0.5 mile away, and views toward Heber Dunes SVRA are distant and partially or fully obscured by vegetation. Motorists traveling on SR-7 have short-term obscured views as they pass to the eastern vegetated border of Heber Dunes SVRA. Motorists on Heber Road also have views; however, this road is rural and generally used for agricultural operations. Farm workers in adjacent fields would have views toward Heber Dunes SVRA, but views into the interior of the site would be partially blocked due to vegetation, depending on the location.

Regulatory Setting

There are no regulatory requirements related to visual resources that are applicable to Heber Dunes SVRA.

3.6.2 Thresholds of Significance

The proposed General Plan project and near-term facility improvements would have significant environmental impacts related to aesthetics if they would do the following:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.6.3 Environmental Evaluation

General Plan Analysis

Visual resources at Heber Dunes SVRA and in the surrounding areas are of flat terrain with fairly limited vegetation other than agricultural crops. There are no designated or eligible scenic highways adjacent to or within visible range of Heber Dunes SVRA. Future development at Heber Dunes SVRA would not damage any designated scenic resources or existing visual character. Additionally, the proposed General Plan includes a specific guideline and management strategies for the preservation, avoidance, and protection of visual resources during construction and operation of future projects within Heber Dunes

SVRA. The General Plan policy requires appropriate planning to avoid conflicts that would have negative effects on viewsheds. This policy is as follows:

- **VUR Guideline 3.5:** Provide visitor use facilities that support opportunities for diverse visitor experiences, which could include a variety of OHV opportunities and other compatible recreation activities such as barbeque facilities and horseshoe pits. Locate facilities for effective and efficient visitor and staff use while minimizing use conflicts and negative effects on viewsheds and natural resources.

This guideline set forth by OHMVR Division and within the proposed General Plan serves to require consideration of visual resources when developing new facilities and to protect visual resources through active management and planning. The four scenic highways listed in Imperial County's Circulation and Scenic Element in the General Plan are not in visual proximity to the project site. Thus, the proposed General Plan would have a ***less-than-significant*** impact to scenic vistas or scenic resources.

Implementation of the proposed General Plan would not result in on-site development that would adversely impact the visual character of the site or surroundings. The majority of the site would remain in its current undeveloped state to facilitate OHV use, with improvements generally occurring in areas of existing development. The proposed General Plan would not result in overly expansive or tall structures that would be out of character. In addition, the site has a minimal number of sensitive viewers, as residential receptors are more than 0.5 mile away with obstructed view, and the majority of viewers are motorists passing to the east on SR-7 who have obscured, short-term views. Compliance with the visual resource management goal during any future development and/or improvements within Heber Dunes SVRA would minimize substantial adverse effects on existing viewsheds within and surrounding the park property. The overall visual character of the site would not be substantially altered. Thus, potential impact from implementation of the proposed General Plan to visual resources and visual character would be ***less-than-significant***

Overnight use of Heber Dunes may result in the future if a campground facility were to be constructed for managed camping activities. It is anticipated that nighttime light sources from a managed campground would result from individual campfires and headlights of the ranger vehicle patrolling the campground. This would produce minimal new nighttime light sources and would not create substantial glare, especially as there are no highly sensitive viewers in the immediate vicinity. The potential addition of light from nighttime campfires and patrol activities would not adversely affect views of the area and a ***less-than-significant*** impact would result.

Near-Term Facility Improvements Analysis

Similar to the proposed General Plan analysis, the near-term facility improvements would not change or damage the current scenic resources within or surrounding Heber Dunes SVRA. There are no scenic or eligible scenic highways within or in the vicinity that could be affected. Thus, the near-term facility improvements would not adversely impact a scenic vista or scenic highway and a *less-than-significant* impact would result.

The proposed new facilities would generally replace old and visually unappealing structures, such as the existing maintenance area. The proposed structures, including the new staff residence and administration/maintenance facility, would not be more than one story in height and would appear more uniform and uncluttered than the existing wooden and metal structures. New picnic structures and the training track would not appear out of character with the existing development within Heber Dunes SVRA. In addition, most of the facilities would be clustered together rather than expanding across the site.

These improved facilities and expanded recreation opportunities at Heber Dunes SVRA may increase use of Heber Dunes SVRA and, thus, additional traffic and on-site dust generation may result. Traffic and dust are already generated from current OHV use and a potential increase would not substantially degrade the existing visual character or quality of the site and its surroundings. For the reasons described above, the impact to visual resources and character resulting from implementation of the near-term facility improvements is considered *less-than-significant*.

Only lighting necessary for security would be included in the near-term facility improvements, which would not create a substantial new source of light or glare and would be a *less-than-significant* impact.

3.6.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to visual resources. Implementation of the near-term facility improvements would not result in significant impacts to visual resources.

3.6.5 Mitigation Measures

No significant impacts to visual resources would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to visual resources would result from the near-term facility improvements and no mitigation is required.

3.7 Biological Resources

3.7.1 Existing Setting

This section summarizes the potential environmental impacts to biological resources that would result with implementation of the proposed General Plan and near-term facility improvements. This section is based on field reconnaissance surveys and general wildlife surveys that were conducted on April 23, 2008, and May 24, 2010. An additional general wildlife survey was performed on March 24, 2010. Additional information in this section is taken from previous biological surveys and reports prepared for Heber Dunes SVRA.

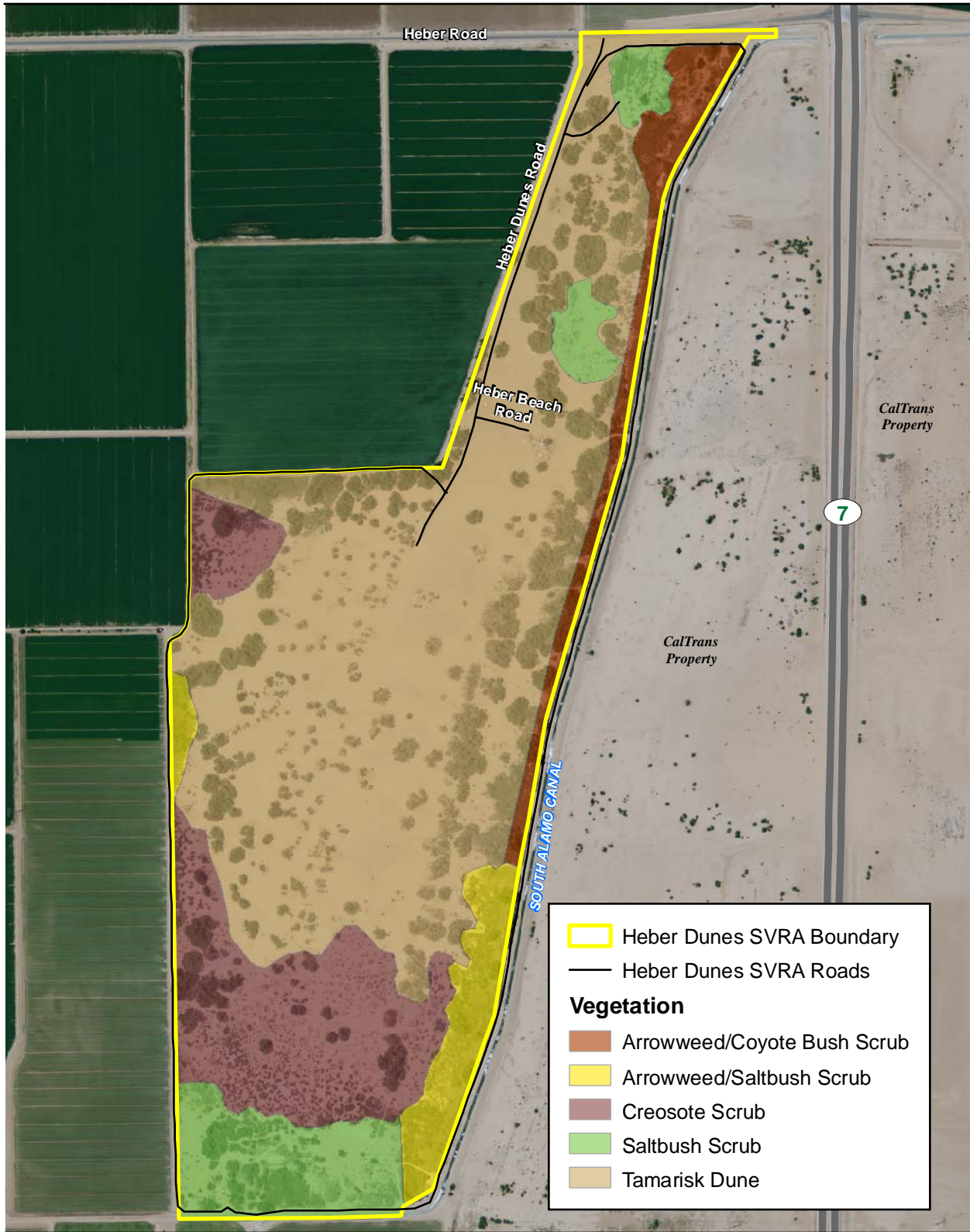
Vegetation

Heber Dunes SVRA is located in the Salton Trough area of the Colorado Desert on lake deposits of the ancient Lake Cahuilla, which completely dried up approximately 400 years ago. Heber Dunes SVRA is dominated by relict dune landscape that is surrounded by agricultural land use. Even though much of the habitat is dominated by nonnative tamarisk, the site remains an isolated island of habitat surrounded by land disturbed by agricultural crop production. Because of this, the site is inhabited by numerous wildlife species, both migratory and resident. Heber Dunes SVRA is not directly connected to any other undisturbed or native open space or natural wildlife habitat.

Five vegetation types have been identified within Heber Dunes SVRA:

- Creosote scrub
- Saltbush scrub
- Arrowweed/Saltbush scrub
- Arrowweed/Coyote bush scrub
- Tamarisk dune

A map of the existing vegetation communities within Heber Dunes SVRA is provided in Figure 3.7-1. All of these vegetation types represent important resource values for both plants and wildlife. The nonnative tamarisk-covered dune habitat is the most common vegetation type within Heber Dunes SVRA. The most common native vegetation community at Heber Dunes SVRA is creosote scrub. In addition to creosote scrub, there are three other native vegetation communities on-site: saltbush scrub, arrowweed/saltbush scrub, and arrowweed/coyote bush scrub. Each of the vegetation types found within the boundaries of Heber Dunes SVRA is described below.



Path: P:\2007\07080197.10 Heber Dunes\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Figures\EIR\HDSVRA_EIR_Figures\7_Vegetation_and_PlantComm.mxd, 8/3/2011, SteinB

Source: California State Parks 2009; NAIP 2009

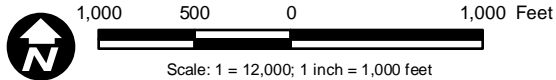


Figure 3.7-1
Vegetation Communities

Creosote Scrub

The creosote scrub vegetation community is dominated by creosote bush (*Larrea tridentata*) and occurs in two different locations in Heber Dunes SVRA. The largest area occurs in the southwest portion of the park and the smaller area is located in the central-western edge. Between the two locations there are approximately 56.0 acres of creosote scrub. The creosote scrub in these areas is found on the dune mounds and may represent the natural vegetation that occurred on the dunes that are now covered in tamarisk (see below). The creosote shrubs at Heber Dunes SVRA are very large specimens, as much as three times the size of creosote shrubs typically found in this area. It is assumed that the size of these shrubs is at least partially associated with the general age class of the shrubs. Dunes found in Imperial County are often vegetated with species like desert buckwheat (*Eriogonum deserticola*) or mesquite (*Prosopis glandulosa*). In some of the dune areas of Imperial County, such as the Imperial Sand Dunes Recreation Area, the vegetation may be dominated by creosote scrub. Without historical data, it is difficult to determine what the vegetation on the dunes was before the invasion of tamarisk, but, given the size and age class of creosote shrubs at the Heber Dunes SVRA, it is reasonable to assume that the historic natural vegetation at Heber Dunes SVRA included a major component of creosote scrub. The creosote-based habitat is a distinct habitat type for Heber Dunes SVRA, although it is widespread in the greater southwest region.

Within the creosote scrub, there is a very disturbed understory that has been heavily affected by off-road trails. Where the off-road activity has been limited, the understory vegetation is low in diversity with just a few annual species that are common to dunes and other sandy soil areas. The understory of annual plant species has declined since monitoring was implemented in 1999 and it appears that the root system of the creosote shrubs has been undermined with portions of the topsoil layer being washed away. The most common understory species in these areas is narrow-leaf oligomeris (*Oligomeris linifolia*). Other native species found in the understory include popcorn flower (*Cryptantha* sp.) and plicate coldenia (*Tiquilia plicata*). Two nonnative annual species common in this vegetation are black mustard (*Brassica nigra*) and Mediterranean schismus (*Schismus barbatus*). Understory species that are often associated with the dune systems (burro bush [*Ambrosia dumosa*], indigo bush [*Psoralea schottii*], and dye weed [*Psoralea emoryi*]) are conspicuously missing from the site.

As stated above, creosote scrub is the densest in the southern portion of Heber Dunes SVRA. While there is extensive off-road activity in and around the creosote scrub areas, it is important to note that many areas still have remnant soil crust formation on the dunes. The formation of soil crust is a common occurrence on desert soils, especially those with a high content of sand and silt like the soil at Heber Dunes. This crust is usually the result of wind

deposition along with the microbiotic activity of algae, cyanobacteria, and other microorganisms in the soil. The formation of this crust helps to lock up the soil surface, which provides for top soil stability, general erosion control, and the capture and retention of moisture. This soil crust can be very important for providing stable habitat for understory plants and animals, as well as for the more deep-rooted shrub species.

In the more heavily used areas at Heber Dunes SVRA, off-road activity has disturbed this very delicate soil layer, and, in some instances, eliminated it completely. In some areas, the soil crust loss is adversely affecting the creosote shrubs by undermining the root system and washing away the important top soil layer. This could also be contributing to the lack of a diverse understory of annual plant species at Heber Dunes SVRA.

Saltbush Scrub

The saltbush scrub community is found in three different areas of Heber Dunes SVRA: one at the very southern end of Heber Dunes SVRA and two at the northeastern end. Between the three locations, there is approximately 33.9 acres of saltbush scrub. This community is dominated by big saltbush (*Atriplex lentiformis*) throughout most of the area, with a mixture of big saltbush and bush seepweed (*Suaeda moquinii*) in one area. Mixed in with the heavy concentration of saltbush and seepweed are occasional patches of arrowweed (*Pluchea sericea*), coyote bush (*Baccharis emoryi*), apricot mallow (*Sphaeralcea ambigua*), and the occasional salt-cedar tamarisk (*Tamarix ramosissima*). There is very little native understory component species in the saltbush scrub.

The saltbush scrub areas also have off-road trails throughout them. This habitat has declined since monitoring was implemented in 1999 and there has been periodic die-off of the saltbush in some of these areas. Although a direct explanation for the periodic die-off has yet to be identified, it may be attributed to herbicide drift from the adjacent farm fields (which are often aerially sprayed), effects of irrigated water, herbivory or consumption by insects, or an unknown plant pathogen.

Arrowweed/Saltbush Scrub

Two vegetation types are dominated in part by arrowweed. The first is the arrowweed/saltbush scrub. There are two areas with this vegetation community in Heber Dunes SVRA: one along the central portion of the western boundary and a larger patch in the southeastern corner of the park. Between the two areas there is approximately 18.1 acres of arrowweed/saltbush scrub. This community differs from the saltbush scrub community by having arrowweed in about 50% of the vegetation. The arrowweed-dominated shrub areas probably represent the original habitat that occurred in the low areas that are not covered by dune sands. Other species found in this community include coyote bush and tamarisk. The invasive tamarisk that is a problem in this area is primarily

the more shrub-like species, such as salt-cedar, not the tree-like species that is found on the dunes (see description below). This community includes very few native understory plants but often has dense patches of the nonnative black mustard and other weed species.

The arrowweed/saltbush scrub areas are similar to the saltbush scrub in that there are off-road trails throughout; however, their effect on the vegetation is not as substantial as effects seen in the creosote scrub areas.

Arrowweed/Coyote Bush Scrub

The arrowweed/coyote bush scrub vegetation community occurs in a linear area along the eastern edge of the park and covers approximately 17.0 acres of Heber Dunes SVRA. As with the arrowweed/saltbush community, this community has about 50% cover of arrowweed, but instead of saltbush in the remainder, there is coyote bush. There appears to be more water resources available on this side of the park, possibly due to leakage from the linear South Alamo Canal that runs parallel to the eastern boundary. Because of this water resource, wetland-adapted species are scattered in this area, including mesquite (*Prosopis glandulosa*), cottonwood (*Populus fremontii*), and black willow (*Salix gooddingii*). This area also has scattered tamarisk throughout and very little native understory species.

In contrast to the other habitat types, the arrowweed/coyote bush scrub vegetation density has precluded the level of off-road trail activity found in the other areas.

Tamarisk Dune

The tamarisk dune community covers the greatest area of Heber Dunes SVRA, dominating the central portion. The tamarisk dune community covers approximately 209.5 acres and is the area most heavily affected by off-road activity. The large athel tamarisk trees (*Tamarix aphylla*) growing on the dunes have most likely replaced a native vegetation type. With their deep taproots, these tamarisk trees have tapped into the moisture that is often held in dune systems of this type. Tamarisk roots occasionally intrude into canals and tap canal water. However, the South Alamo Canal is lined with concrete, which reduces the potential for this vegetation community to tap into water from this canal.

Scattered native understory species have been detected in this community, including narrow-leaf oligomeris, popcorn flower, and plicate coldenia. These understory species are not nearly as common as they are in the creosote scrub vegetation. Nonnative species found in the understory of the vegetation type include black mustard, Mediterranean schismus, and Russian thistle (*Salsola tragus*). The Heber Dunes SVRA vegetation community is usually either tamarisk trees or bare open sand dunes.

Sensitive Plant Species within Heber Dunes SVRA

A search of the California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) database for sensitive species revealed no sensitive plant species at Heber Dunes SVRA. Although a number of sensitive plant species are known to occur on dune systems (e.g., Wiggins' croton [*Croton wigginsii*]), none of these species were observed at Heber Dunes SVRA. It is probable that endemic dune plant species once occurred at the park, but that off-road activity has extirpated them over time.

Sensitive Plant Communities within Heber Dunes SVRA

Sensitive plant communities are those that have experienced a substantial decline since the arrival of early settlers to California. Within the Salton Trough, this decline is usually associated with agricultural uses. None of the plant communities found at Heber Dunes SVRA are considered sensitive, either locally or regionally.

Invasive Nonnative Species within the Heber Dunes SVRA

Nonnative species are those that have not evolved in a particular area but have been introduced through human activities, either incidentally or deliberately. Most nonnative species are not invasive and do not cause adverse effects on natural plant and animal communities. Nevertheless, some nonnative species have resulted in the conversion of native habitats to a nonnative vegetation type, with a corresponding reduction of native plants and degradation of wildlife habitat.

While numerous nonnative annual and other understory plant species are found at Heber Dunes SVRA, none of these species are common enough to have converted the native habitats to nonnative plant communities. Nonnative tamarisk species are of specific concern. Large stands of athel tamarisk have type-converted the native vegetation (possibly creosote scrub) on the dunes to a vegetation dominated by the tamarisk trees. These trees are very large and can preclude the growth and development of other species (both native and nonnative) from growing near or under their canopy. In addition, the deep taproots produced by the tamarisk trees are capable of depleting the water table and affecting native vegetation up to 100 feet away. The more shrub-like salt-cedar species has become common along the east side, as well as in the southern and northern ends of Heber Dunes SVRA and is very invasive and destructive to native species. This invasion of salt-cedar has begun to type convert the saltbush and arrowweed areas. In the desert areas of the southwest, tamarisk can be one of the most invasive and dominant weed species known to affect native habitats.

Wildlife

The five habitat types present at Heber Dunes SVRA support various wildlife species, which are described below per each vegetation community. On March 24, 2010, a general wildlife survey was performed at Heber Dunes SVRA. This survey was performed early in the morning to detect any wildlife species either aurally or visually that may go undetected as the temperatures rise and wildlife retreats. Many avian species were detected during this time, as were Audubon's cottontails (*Sylvilagus audubonii*) and desert spiny lizards (*Sceloporus magister*). Additional information regarding wildlife historically found at Heber Dunes SVRA was compiled from previous wildlife surveys.

Creosote Scrub

More wildlife species and more wildlife sightings have been recorded in the creosote scrub portions of Heber Dunes SVRA than any other vegetation on the site. The southern half of Heber Dunes SVRA appears most productive, with seemingly larger species diversity consisting of migratory songbirds and resident and native songbirds in creosote habitat, and numerous snake tracks and western whiptails (*Aspidoscelis tigris*). Many desert wildlife species utilize creosote scrub for cover, foraging, and habitation, and some wildlife species are specific to this vegetation. Desert reptiles, amphibians, mammals, and birds will use creosote scrub to avoid predation and to escape excessive daytime temperatures. Some wildlife species will browse creosote vegetation (e.g., black-tailed jackrabbit [*Lepus californicus*]) or will feed on the creosote fruits (e.g., desert woodrat [*Neotoma lepida*]) themselves. Of these two species, only the black-tailed jackrabbit is known from Heber Dunes SVRA (SERG 1998).

Notable numbers of migratory songbirds were detected throughout Heber Dunes SVRA: more than 20 western tanagers and a minimum of three willow flycatchers. Bird species seen include red-winged black bird (*Agelaius phoeniceus*), Gambel's quail (*Lophortyx gambelii*), lesser nighthawks (*Chordeiles acutipennis*), and roadrunners (*Geococcyx californianus*). Reptile species found include western whiptail, long-tailed brush lizard (*Urosaurus graciosus*), long-nosed snake (*Rhinocheilus lecontei*), and desert iguana (*Dipsosaurus dorsalis*). The desert iguana is only known from the creosote scrub areas and the arrowweed habitat areas, while the long-tailed brush lizard is found in all the habitat types except the tamarisk dune areas. The desert pocket mouse (*Chaetodipus penicillatus*) and cactus mouse (*Peromyscus eremicus*) were found throughout most of the vegetation types at Heber Dunes SVRA (except the tamarisk dune areas), but both species are more common in the creosote scrub areas.

Several species frequently found in desert habitats, such as little pocket mouse (*Perognathus longimembris*) and desert wood rat, appear to be absent from Heber Dunes

SVRA. Particularly noteworthy is the absence of kangaroo rats (genus *Dipodomys*), which are perhaps the most common rodent occurring in creosote scrub and tamarisk/dune habitats. Some kangaroo rats, such as *D. deserti*, are blow-sand specialists that are restricted to dunes and other areas with soft, sandy soils. The absence of kangaroo rats and other native rodent species from Heber Dunes SVRA is most likely due to the small, isolated nature of the habitat on-site, surrounded by agricultural land.

Saltbush Scrub

Following the creosote scrub habitat, the habitat with the most wildlife species and sightings is the saltbush scrub areas of Heber Dunes SVRA, where there is good cover and food sources for some wildlife species. While no wildlife species are endemic to saltbush scrub, this vegetation type offers the best cover for understory and ground-dwelling species. Many of the bird species sighted at Heber Dunes SVRA are known from this vegetation type, and the saltbush scrub had the highest density of reptile sightings on-site, particularly the western whiptail lizard, which is very common in this habitat type as an understory species. Mammal species that occurred in the saltbush scrub include most of the common species for Heber Dunes SVRA, but of particular note is the spotted skunk (*Spilogale putorius*), which was only found in saltbush scrub.

Arrowweed Scrub

The two arrowweed scrub vegetation types had the least number of wildlife species sightings for the native vegetation types at Heber Dunes SVRA. Both the arrowweed/saltbush scrub and the arrowweed/coyote bush scrub offer good cover and foraging value, but did not have as many wildlife species and sightings as compared to the creosote and saltbush scrub habitat types. The arrowweed, in particular, is visited by numerous bird species foraging for insects and seeds. Bird species that were particularly common in this vegetation include red-winged blackbird (*Agelaius phoeniceus*) (the most common bird species at Heber Dunes SVRA), mourning dove (*Zenaida macroura*), white-winged dove (*Zenaida asiatica*), and verdin (*Auriparus flaviceps*). The arrowweed scrub areas had the highest concentration of side-blotched lizard (*Uta stansburiana*) for the site, but this species was found in the other vegetation types as well. Substantial populations of the desert spiny lizard are also found in arrowweed scrub.

Tamarisk Dune

The tamarisk dune areas had the lowest number of wildlife species sightings of any of the vegetation types at Heber Dunes SVRA. The bird, mammal, and reptile diversity for this habitat type is much lower than the native vegetation types. Historically, the one exception was the sidewinder rattlesnake (*Crotalus cerates*), which was only known to occur in the

tamarisk dune areas but has not been sighted in recent years and is assumed to be extirpated from the area.

As mentioned above, there are several desert small mammal species that are typically common but are lacking from Heber Dunes SVRA, especially from the sand dune portions of the site. Although the tamarisk dune areas have the potential to support species like the desert wood rat, little pocket mouse, and especially kangaroo rat species, none of these species have been recorded at Heber Dunes SVRA.

Other Wildlife Species within Heber Dunes SVRA

A number of wildlife species have been recorded at Heber Dunes SVRA that are not associated with any of the specific vegetation types. Bird species that have been recorded at Heber Dunes SVRA include migratory songbirds (including warbler species), migratory usage by Swainson's hawks (*Buteo swainsoni*), turkey vultures (*Cathartes aura*), meadowlarks (*Sturnella neglecta*), and northern harriers (*Circus cyaneus*), and nesting red-tailed hawks (*Buteo jamaicensis*).

Other reptile species that have been recorded at Heber Dunes SVRA include the gopher snake (*Pituophis melanoleucus*), California kingsnake (*Lampropeltis getula californiae*), coachwhip snake (*Masticophis flagellum*), and desert banded gecko (*Coleonyx variegatus variegatus*).

Other mammal species that have been recorded at Heber Dunes SVRA include valley pocket gophers (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), desert gray shrews (*Notiosorex crawfordi crawfordi*), coyote (*Canis latrans*), and bobcats (*Lynx rufus baileyi*).

Adjacent Agricultural Fields

The adjacent agricultural fields and associated roads that surround Heber Dunes SVRA offer habitat value to some of the desert wildlife species. A few of the wildlife species observed in the area are actually more common in the adjacent agricultural areas than the native vegetation within Heber Dunes SVRA, in particular, some of the large mammal species. These species include coyote, raccoon (*Procyon lotor*), Audubon's cottontail, black-tailed jackrabbit, and roundtailed ground squirrel (*Spermophilus tereticaudus*) (SERG 1998). The more regular occurrence of these species in the agricultural areas is due to the high concentration of available food, making them better foraging sites for heavy browsers like rabbits. While these species are more common in the agricultural field areas, they all have been found regularly in the interior of Heber Dunes SVRA during monitoring activities. The agricultural fields provide a food source for the rabbit species, supporting an active predator/prey cycle between the rabbits and coyotes.

One bird species, western burrowing owl (*Athene cunicularia*), has been observed in the surrounding agricultural areas on many occasions but only a few times in the vegetation types within Heber Dunes SVRA. The western burrowing owl has been observed nesting once in the saltbush scrub and once in the arrowweed habitat. The western burrowing owl is known to often prefer agricultural areas over native desert scrub communities, as the available food sources (insects and small mammals) in the agricultural areas are usually greater year-round than in many of the native vegetation types.

Sensitive Wildlife Species within Heber Dunes SVRA

During the March 24, 2010, survey, no signs of western burrowing owls within Heber Dunes SVRA were detected; however, a pellet from this species was detected on a berm along the western boundary, indicating that western burrowing owls are, at a minimum, possibly using Heber Dunes SVRA for foraging. The western burrowing owl is identified as a species of special concern by CDFG.

Other sensitive wildlife species that have been previously recorded from Heber Dunes SVRA include Albert's towhee (*Pipilo aberti* – CDFG special animal), sage sparrow (*Amphispiza belli* – CDFG watch list), and white-faced ibis (*Plegadis chihi* – CDFG watch list). Although the western diamondback rattlesnake (*Crotalus atrox*) is not considered sensitive, Heber Dunes SVRA is one of the very most western occurrences for this species, which is known from both roadkill and live specimens.

Pest Species of Wildlife

Brown-headed cowbird (*Molothrus ater*) populations have been observed at Heber Dunes SVRA. This species is characterized as a parasitic species because individual females lay their eggs in other bird nests, tricking the other birds into rearing the brown-headed cowbird young instead of their own. This parasitic species has had a large impact to local native bird reproduction rates, which ultimately impacts population growth and stability. In addition, local native species must compete with brown-headed cowbirds for food and habitat. Another avian pest species known to Heber Dunes SVRA is the great-tailed grackle (*Quiscalus mexicanus*).

Feral cats and dogs, along with domesticated cats and dogs that have been abandoned within or adjacent to Heber Dunes SVRA, are also present. These species often compete directly with the native predatory species that are known to occur within Heber Dunes SVRA, causing substantial degradation of bird, reptile, and small mammal populations.

Regulatory Setting

Below is a summary of the federal, state, and local regulations applicable to the proposed General Plan and near-term facility improvements.

Migratory Bird Treaty Act

The U.S. Fish and Wildlife Service (USFWS) administers and enforces the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S. Code [USC] 701–718h). Virtually all birds are protected under the MBTA, with four exceptions: California quail, English sparrows, common pigeons, and European starlings. The MBTA controls the taking of protected birds, their nests, eggs, parts, or products without obtaining a permit from USFWS.

Fish and Game Code

Fish and Game Code Sections 3503, 3503.5, and 3513 provide protection for the nests and eggs of all birds, protect raptors (birds of prey) and nongame migratory birds, and provide protection for the western burrowing owl from “take.”

California Code of Regulations

CCR, Title 14, Section 460 provides specific information regarding protection and take of fur-bearing animals in California.

California State Parks Off-Highway Motor Vehicle Recreation Act

Specific biological provisions in the Off-Highway Motor Vehicle Recreation Act outline management programs designed to work with natural processes of vegetation succession, control the spread of noxious and invasive weeds, and protect the natural wildlife habitat. The Habitat Monitoring System (HMS) was later developed to emphasize a broad range of scientifically accepted techniques and measures that are appropriate for the unique habitats found within SVRAs. The HMS provides information on baseline studies, focused studies, monitoring, and survey protocols. The guide is to be used by SVRA resource managers as a tool to aid in the development of park-specific monitoring plans and techniques. Additionally, The Wildlife Habitat Protection Program (WHPP) mandated by PRC Section 5090.35, and the Habitat Management System developed by the Division are a major part of each SVRA's resource monitoring and evaluation program that includes standardized protocols tailored for the needs of the particular SVRA. The goals of the WHPP are to monitor and manage wildlife and plant populations and restore habitats where necessary to sustain a viable species composition for each area. These plans enable adaptive management, allowing management practices and strategies to change, or “adapt,” as warranted by the new monitoring information. Environmental scientists for each SVRA conduct and oversee the monitoring based on the HMS and other monitoring protocols.

3.7.2 Thresholds of Significance

The proposed General Plan project would have significant environmental impacts related to biological resources if it would do the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (CWA) (including marsh, vernal pool coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan.

3.7.3 Environmental Evaluation

General Plan Analysis

Heber Dunes SVRA has been used for OHV recreation for many years, first as an Imperial County park and more recently as an SVRA managed by OHMVR Division. While disturbances to biological resources have occurred at Heber Dunes SVRA due to OHV activity, it is an objective of the proposed General Plan to manage Heber Dunes SVRA for the protection of natural communities and to provide quality OHV recreational experiences. To achieve this, the Planning Zones (shown in Figure 2-5), as defined in the proposed General Plan, direct activities to the most appropriate locations to maximize recreational opportunities while conserving natural resources. Specific guidelines detailed in the proposed General Plan would provide for the protection, conservation, and stewardship of biological resources within Heber Dunes SVRA.

Vegetation

As described above, the proposed General Plan contains guidelines specific to the protection of vegetation communities and habitat. Some of these guidelines include RM Guidelines 1 through 6, ER Guideline 3, and NPR Guidelines 1.1, and 1.3 through 1.8. Many of these guidelines focus on appropriate trail locations, habitat restoration, minimizing disturbance of natural resources, and implementation of OHMVR Division's resource management protocols and processes.

The value of the creosote scrub habitat and the effects of human disturbance on this habitat would be addressed with interpretation. The IE goals and guidelines focus on providing education about the value of creosote scrub habitat and dune ecology, the effects of human disturbance on these natural resources, and responsible OHV use to minimize impacts.

The field reconnaissance surveys conducted on April 23, 2008, and May 24, 2010, identified no federally or state-listed plant species within or adjacent to the site. Additionally, a search of the CNDDDB revealed no sensitive plant species on-site. No sensitive plant communities were found within the Heber Dunes SVRA. Thus, actions associated with implementation of the proposed General Plan would not degrade or destroy any sensitive plant species or plant communities and ***no significant impact*** would result.

Though none of the on-site vegetation is considered sensitive, it does have biological value due to its isolated nature surrounded by agricultural fields. The majority of the creosote scrub, saltbrush scrub, and arrowweed/saltbrush scrub is concentrated in the southern portion of Heber Dunes SVRA, and the proposed General Plan identifies this area as the Resource Management Zone and the Eastern Recreational Zone. Appropriate planning in these zones would direct potentially damaging activities away from vegetation with the highest resource value. Some future actions may require the direct removal of or cause indirect impacts to vegetation within Heber Dunes SVRA, such as construction of new structures or establishment of new trails. Adherence to the guidelines listed above would minimize disturbance to natural vegetation and habitat found within Heber Dunes SVRA through appropriate routing of trails with consideration of biological resources, protection of soil resources, habitat restoration, and general stewardship activities such as weed control. In addition, the proposed educational and interpretative programming would serve to educate users about the value of the on-site habitat and potentially minimize impacts to vegetation caused by off-trail use or other visitor activities. The establishment of the Resource Management Zone and adherence to the guidelines outlined in the proposed General Plan would minimize disturbance and require appropriate ongoing management, restoration, and conservation of the existing on-site vegetation communities. For this reason, the impact to the existing nonsensitive vegetation communities within Heber Dunes SVRA would be ***less-than-significant***.

Wetlands

There are no existing water bodies on-site that would lead to the presence of wetlands. The adjacent canal is concrete lined and does not appear to have significant seepage that could create wetland habitat. The project site is surrounded by agricultural land. Therefore, the proposed project would have **no impact** to federally protected wetlands as defined by Section 404 of the CWA.

Due to the lack of riparian features on the project site as described above, the proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFG or USFWS and **no impact** would result.

Wildlife

The proposed General Plan contains guidelines specific to the protection of wildlife species known to Heber Dunes SVRA. Wildlife protection is also afforded through the conservation of their habitat, as described in the vegetation section, above. One of the General Plan guidelines specific to wildlife conservation is listed below:

- **NPR Guideline 1.1:** Identify and establish Adaptive Management Opportunity Zones where populations of special-status native wildlife and special-status plant species are known to occur.

There is the potential for nesting birds to be present at Heber Dunes SVRA. The General Plan provides guidelines to minimize disturbance to these species and their nesting habitat. Adherence to these policies would reduce potential impacts to these species if they were present within Heber Dunes SVRA in the future. No critical habitat, as defined by the Endangered Species Act, has been designated for endangered or threatened species occurring at Heber Dunes SVRA. The continued and enhanced use of Heber Dunes SVRA for OHV use and social gathering in conformance with proposed guidelines to protect wildlife species and their habitat reduces potential impacts to wildlife species.

However, though no western burrowing owls were found to be occupying Heber Dunes SVRA during the March 2010 wildlife surveys, they have been observed on-site in the past, and there was evidence that borrowing owls utilize the site and are likely present in the adjacent agricultural fields. Because of the high potential for their presence within Heber Dunes SVRA, construction or operation activities have the potential to affect western burrowing owls and would be a potentially **significant impact (Impact Biology-1a)** to a special status species.

No element of the proposed General Plan would create substantial barriers to the movement of wildlife through the project site, such as long stretches of fencing, walls, or other impassable obstacles. Wildlife would continue to be able to pass through the project site and a *less-than-significant* impact related to the interference with wildlife movement would result.

There are no ordinances, policies, or adopted habitat conservation plans applicable to Heber Dunes SVRA for the protection of biological resources. Thus, there would be no conflict with these types of biological resource protection plans and *no impact* would result.

Near-Term Facility Improvements Analysis

Vegetation

The location of the near-term facility improvements would minimize potential removal or degradation of existing on-site vegetation. As shown in Figures 2-6a and 2-6b, the proposed improvements are generally located in areas that have already been disturbed or where there is minimal vegetation. It is likely that some tamarisk trees would need to be removed in the vicinity of the proposed staff residence area. Though the on-site vegetation is important due to the unique nature of the isolated dune ecology in the middle of agricultural fields, the vegetation is not considered sensitive, and minor removal of tamarisk trees or other on-site vegetation would not constitute a significant impact. Similar to the vegetation analysis above for the proposed General Plan, adherence to the guidelines would further reduce any potential impacts to vegetation and implementation of the near-term facility improvements would result in a *less-than-significant* impact.

Wetlands

As described under the General Plan analysis, there are no existing water bodies on-site that would lead to the presence of wetlands or other riparian features. Therefore, the proposed project would have *no impact* to federally protected wetlands as defined by Section 404 of the CWA or riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFG or USFWS.

Wildlife

None of the near-term facility improvements would be located in the southern portion of the site near the most concentrated areas of creosote scrub and other wildlife habitat. As described above, the proposed improvements are generally located in areas that have already been disturbed or where there is minimal habitat to attract wildlife. Similar to the

wildlife analysis above for the proposed General Plan, adherence to the guidelines would further reduce any potential impacts to wildlife and their associated habitats.

However, as described under the General Plan, there is a high potential for western burrowing owl to occur within Heber Dunes SVRA. For this reason, construction of the near-term facility improvements could result in a potentially **significant impact (Impact Biology-1b)** to western burrowing owl.

No component of the proposed near-term facilities improvements would create substantial barriers to the movement of wildlife through the project site, such as long stretches of fencing, walls, or other impassable obstacles. As described in Section 2.6.5, fencing for the training track would be selected to allow for free passage of native species. Wildlife would continue to be able to pass through the project site and a **less-than-significant** impact related to the interference with wildlife movement would result.

As described under the General Plan analysis, there are no ordinances, policies, or adopted habitat conservation plans applicable to Heber Dunes SVRA for the protection of biological resources and **no impact** would result.

3.7.4 Summary of Significant Impacts

Due to the high probability for western burrowing owl to occur within Heber Dunes SVRA, construction or operation of future General Plan actions (**Impact Biology-1a**), as well as construction of near-term facility improvements (**Impact Biology-1b**), has the potential to result in significant impacts to western burrowing owl.

Implementation of actions under the proposed General Plan would not result in other significant impacts to biological resources. Implementation of the near-term facility improvements would not result in other significant impacts to biological resources.

3.7.5 Mitigation Measures

Mitigation Measure Biology-1

In the event that western burrowing owls are discovered within a construction area or in an area that interferes with operation and management of Heber Dunes SVRA, CDFG will be consulted to determine the proper course of action, which may include [avoidance or](#) measures such as limiting construction to the nonbreeding season, burrow exclusion outside of the breeding season, collapsing of excluded burrows, and the creation of artificial burrows.

Implementation of this mitigation measure would reduce Impact Biology-1a and Impact Biology-1b to **less-than-significant**.

3.8 Cultural Resources

This section provides a brief summary of the archaeology and history of Heber Dunes SVRA and the cultural resources known to occur within the project site and surrounding area. This section also evaluates the potential impacts related to cultural resources that would result from the implementation of the proposed General Plan. This section is based on information summarized from the Cultural Resources Inventory for Heber Dunes SVRA report (EDAW AECOM 2009a). The cultural resources report is attached as Appendix F.

3.8.1 Existing Setting

Methodology

A records search was conducted through the California Historical Resources Inventory System's South Coastal Information Center at San Diego State University. In addition, project archaeologists consulted with the Imperial Valley Pioneers Museum and with local residents to obtain further historical information on the Heber Dunes area. The Native American Heritage Commission (NAHC) was contacted to request a Sacred Lands file search and a list of Native American contacts for government-to-government consultation purposes.

An intensive field survey was conducted by project archaeologists between March 31 and April 2, 2009. Constraints on field survey included dense impassable vegetation in areas of the site, particularly on dune tops and in the southern area of the property. Trail cuts and areas of exposed dune stratigraphy were examined for evidence of subsurface deposits.

Regional Archeological and Historical Setting

Regional Prehistory

The prehistory of the desert region of Imperial County is generally divided into three major periods of occupation: Paleoindian, Archaic, and Late Prehistoric. The first well-documented Paleoindian cultural tradition in southern California is the San Dieguito complex (12,000 to 7000 years before present [B.P.]). Artifact types and categories associated with the San Dieguito complex include percussion-flaked core tools and flake-based tools such as scraper planes, choppers, scrapers, crescentics, elongated bifacial knives, and leaf-shaped projectile points. Though generally found in coastal areas, related materials have been found in the Mojave Desert and in the Great Basin, sometimes called the Lake Mojave complex. Few San Dieguito/Lake Mojave sites in the desert contain subsurface deposits or material that can be dated. Temporal placement of desert sites is based primarily on degree of weathering and patination, and absolute dating has been problematic.

In the desert, the Archaic period can be divided into the Pinto complex (7000 to 4000 B.P.) and the Amargosa or Gypsum complex (4000 to 1500 B.P.). The Pinto complex shows evidence of a shift from big game exploitation to a broader-based economy, with increased emphasis on the exploitation of plant resources. Groundstone artifacts are rare; these are typically thin slabs with smooth, highly polished surfaces that may be platforms upon which fibrous leaves or skins were scraped. Projectile points are distinctively crude and other lithics include percussion-flaked scrapers, knives, scraper planes, and choppers. In the subsequent Amargosa or Gypsum complex, manos and basin metates became relatively common. These tool types and the addition of groundstone hard-seed-processing equipment suggest an attempt to adapt to drier desert conditions in the greater Southwest.

Late Prehistoric period patterns indicate higher population densities and elaborations in social, political, and technological systems. The desert manifestation of the Late Prehistoric is broadly referred to as the Patayan pattern. Culture traits generally associated with this period include increasingly elaborate kinship systems and rock art. Extensive trail systems indicate connections between the coast and desert for trade, religious activities, and other interactions, peaceful or otherwise. Cremation rather than inhumation also became the burial norm. Artifactual material is characterized by the presence of arrow shaft straighteners, pendants, comales (heating stones), Tizon Brownware pottery, ceramic figurines, ceramic "Yuman bow pipes," ceramic rattles, miniature pottery, various cobble-based tools, bone awls, manos and metates, and mortars and pestles. Subsistence in desert areas is thought to have focused on acorns and grass seeds, with small game serving as a primary protein resource and big game as a secondary resource. Settlement in the Patayan consisted of seasonal settlements of small mobile groups concentrated along the Colorado River floodplain.

Ethnohistory

This area of the Salton Trough is in the traditional territory of the Kamia. Also known as Kumeyaay, Ipai, Tipai, and Diegueño, the Kamia in this area settled primarily along the New River and the Alamo River. The Kamia or Desert Kumeyaay ranged over the Imperial Valley and northeastern Baja California. They relied on gathering, supplementing that subsistence base with floodplain horticulture along the New and Alamo rivers and at various springs. Domesticated plants included maize, tepary beans, squash, pumpkin, and gourds, with grasses intentionally planted for harvesting of their seeds. Large game hunting is thought to have been only a minor part of Kamia subsistence. Small game like hares and rabbits were netted, and fish and aquatic birds formed a large component of the animal protein. The predominant determining factor for placement of villages and campsites was the ready availability of water, preferably on a year-round basis, with seasonal movements to exploit available food resources. Inland bands could travel to the coast to fish and gather salt, then

shift to desert areas in the spring to gather agave, moving to higher altitudes later in the year to gather seasonally available acorns and pine nuts. During the winter and spring, Kamia groups lived in seasonal villages located on floodplain terraces. Winter houses, or *uwa* in Kamia, were substantial earth-covered post-and-beam structures measuring 4 to 8 meters square with thatched gable roofs. Three walls and the roof were covered in sand, and these houses held multiple extended families. Wikiups, or summer houses, were circular domed structures. Cleared circles or circular rock alignments are generally the archaeological manifestation of such construction.

Regional History

Early Spanish expeditions in the lower Colorado area make no mention of the desert Kamia. Spanish colonization began in earnest in 1769, though contact with the interior came later, when Pedro Fages led a Spanish expedition through what is now eastern San Diego and Imperial counties in 1785. Despite the lack of early interaction between colonists and interior Native Americans, the Kamia near present-day Jacumba were already hostile to the Spaniards and in alliance with other native groups, actively resisting Spanish rule in the area by the time of Fages' expedition. Still, during their period of governance, the Spaniards had little involvement in inland areas. The Mexican period (1821–1848) retained many of the Spanish institutions and laws; the mission system, however, was secularized in 1834. Secularization allowed for increased Mexican settlement and also meant that many Native Americans were further dispossessed. The Native Americans of the eastern mountain areas began to have hostile interactions with the Mexican settlers who began to enter the area. By this time, contact had led the Eastern Kumeyaay to incorporate domestic livestock, especially horses and cattle, procured through raids. Anglo-European contact also led to the adoption of agriculture, replacing the previous subsistence system based on hunting and gathering. At the start of American rule in 1848, gold was discovered in California and American immigration began in earnest, further disrupting native communities. Desert Kamia at Jacumba, which became a focal point of contact mid-century as a result of its location on the mail route from San Diego to Fort Yuma, were finally subdued in 1880 and evicted from the Jacumba area. Today, the Kamia have no reservation of their own, but, following a long-standing tradition, reside with the Quechan and with the Kumeyaay in San Diego County, or live in Anglo communities.

In present-day Imperial County, transportation rather than settlement remained the primary focus during the 19th century, with mail and stage routes threaded through the area. The Southern Pacific line between Los Angeles and Yuma was completed in 1877. Creation of the California Development Company in the mid-1890s led to the financing and construction of the first canal in the lower Colorado Desert in 1901. Siltation of the canal and overflowing river channels, however, flooded the Salton Sink between 1905 and 1907

and created the Salton Sea. The IID was formed by referendum in 1911 and was delivering water to approximately 500,000 acres of agricultural and residential property in the Imperial Valley through a wide-ranging water conveyance system of unprecedented scale by the mid-1920s. Transportation development continued in the valley over the course of the 20th century. Construction of I-8 in 1967 marked the end of Highway 80's primacy as the transportation corridor and helped usher in renewed population growth and development in Imperial Valley.

Park History

Little recorded history on the Heber Dunes SVRA property is available, and most information obtained for the project's Cultural Resources Report (EDAW AECOM 2009a) was through oral interviews with long-time residents and park staff. Many local residents know the area as "Heber Beach." The project area was part of a much more extensive network of dunes before being graded in 1905 for the construction of irrigation canals. While the earliest portions of the South Alamo Canal were constructed in 1908, the portion of the canal along the eastern boundary of the park was constructed sometime between 1945 and 1957. Previous to concrete lining in 1989, the area adjacent to the unlined canal supported freshwater marsh vegetation and the project area supported raccoon hunting by locals. A local resident recalls there being "Indian pottery" in the dunes, though none has been observed in recent studies. An island of dunes in the agricultural valley, the size and bulk of its dune structures, and the area's soil chemistry made farming at Heber Dunes uneconomical. Six parcels were acquired by Imperial County in the 1960s and 1970s to create Heber Dunes County Park. The purchased properties were administered by Imperial County as a county park. Originally envisioned as a general family recreation spot, unauthorized OHV activity steadily increased as the industry burgeoned beginning in the late 1970s. Beginning in 1998, the park was operated by CSP under lease agreement to Imperial County. The first formalized trails for OHV use were developed that same year. As part of the trail development, Associate State Archaeologist Phil Hines requested a records search from the Southeast Information Center at the Imperial Valley College Desert Museum in 1998, and conducted a pedestrian survey of a proposed trail route on March 24, 1999. No cultural resources were identified.

Archeological and Historical Resources

The results of the records search indicated that 10 previous investigations had been conducted within a 1-mile radius of the project area. Three of these investigations cross the extreme northeast corner of the project area, while five of these cross the extreme southwest corner of the project area; thus, the majority of the project area had not been previously surveyed. Only one site, the South Alamo Canal (CA-IMP-7364H, P-13-007364), was located within a 1-mile radius of the project area. While the earliest portions of the

South Alamo Canal were constructed in 1908, the portion of the canal along the eastern boundary of the park was constructed sometime between 1945 and 1957. As a linear element of the extensive Imperial Valley water conveyance system, the canal was considered eligible as a contributing element to a broader historic district, the entire conveyance system, which is of national significance and meets National Register of Historic Places (NRHP) eligibility criteria.

The records search included a check of listings in the NRHP, California Register of Historical Resources (CRHR), and Directory of Historic Properties data for Imperial County. No historical resources were identified within a 1-mile radius of Heber Dunes SVRA.

The NAHC was contacted to solicit a Sacred Lands File Search and to request a list of contacts to conduct consultation. The NAHC response stated that no Native American culture resources were found within 0.5 mile of the area of potential effects; however, Native American cultural resources are known within proximity to the area (NAHC 2010). Native American tribal consultation was initiated and no responses have been received to date.

One new resource, temporary site number HD-1, was identified within Heber Dunes SVRA during the pedestrian survey conducted for the project's Cultural Resources Report. This site consists of a disturbed secondary deposit of early 20th century historic material on what appears to be dredged and mounded sandy soils in the northeast portion of the project area. The site consists of a scatter of historic ceramics and glass, with bundles of barbed wire in various locations. Artifact concentrations currently on the surface were created by a Heber Dunes SVRA assistant who identified the site prior to the archaeological survey. Diagnostic artifacts include a Knowles Taylor & Knowles ceramic fragment pre-dating 1931 and a hobbleskirt Coca-Cola bottle post-dating 1915. Also identified at the site were two exotic palm trees, one still standing and one dead at the southern boundary of the site. Historic maps do not indicate that any former building or structure was present at this location, and no other buildings or structures appear to have been present within the Heber Dunes property.

The tamarisk trees found within Heber Dunes SVRA may have been introduced as windrows by adjacent farmers but appear to have no additional historical basis or cultural importance to their on-site planting.

Regulatory Setting

Federal and state regulations have been enacted to protect archaeological and historic resources, as well as human remains. These regulations include the following.

National Historic Preservation Act

Enacted in 1966, the National Historic Preservation Act (NHPA) established the NRHP, which authorized funding for state programs with provisions for pass-through funding and participation by local governments, created the Advisory Council on Historic Preservation, and established the Section 106 review process for protecting historic resources. The goal of the Section 106 review process is to offer a measure of protection to sites that are determined eligible for listing in the NRHP. As part of this process, the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Preserving Historic Buildings were developed to provide guidance to federal agencies in reviewing potential impacts to historic resources. The NHPA provides the legal framework for most state and local preservation laws.

California Register of Historical Resources

The Office of Historic Preservation (OHP) administers the CRHR, which was established in 1992 through amendments to the PRC, as an authoritative guide to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected from substantial adverse change. The CRHR includes resources that have been formally determined eligible for, or listed in, the NRHP, State Historical Landmark Number 770 or higher, Points of Historical Interest recommended for listing by the State Historical Resources Commission (SHRC), resources nominated for listing and determined eligible in accordance with criteria and procedures adopted by the SHRC, and resources and districts designated as city or county landmarks when the designation criteria are consistent with CRHR criteria.

California Public Resource Code

The California PRC requires management and protection of cultural resources specific to SVRA areas. Section 5090.35(f) states:

The division [Division of Off-Highway Motor Vehicle Recreation] shall monitor and protect cultural and archaeological resources within the state vehicular recreation areas.

California Health and Safety Code

California Health and Safety Code Section 7050.5 regulates procedure in the event of human remains discovery. Pursuant to PRC Section 5097.98, in the event of human remains discovery, no further disturbance is allowed until the County Coroner has made the necessary findings regarding the origin and disposition of the remains. If the remains are determined to be Native American, the County Coroner is required to contact the NAHC.

The NAHC is responsible for contacting the most likely Native American descendent, who would consult with the local agency regarding how to proceed with the remains. According to Section 15064.5 of the State CEQA Guidelines, all human remains are a significant resource.

Native American Consultation

Government Code Section 65352.3 (SB 18) requires local governments to consult with California Native American tribes identified by the California NAHC prior to the adoption or amendment of a general plan or specific plan. The purpose of this consultation is to preserve or mitigate impacts to cultural places.

3.8.2 Thresholds of Significance

The proposed Preliminary General Plan would have significant environmental impacts related to cultural resources if it would do the following:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

As cited in Section 15064.5, the lead agency shall consider a resource to be “historically significant” if the resource meets the CRHR criteria for eligibility or is listed in a local historic register or deemed significant in a historical resource survey. According to the CRHR criteria, a significant historical resource is one that meets one or more of the following:

- a. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 - b. Is associated with the lives of persons important in our past;
 - c. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - d. Has yielded, or may be likely to yield, information important in prehistory or history.
- Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5, outlined above in “a” through “d.”
 - Disturb any human remains, including those interred outside of formal cemeteries.

3.8.3 Environmental Evaluation

General Plan Analysis

The OHMVR Division Cultural Resource Management Program promotes the protection, preservation, and interpretation of cultural resources throughout the various OHV park units. OHMVR Division archaeologists also conduct public outreach through stewardship programs, state conferences, and training. The Ocotillo Wells District has two archaeologists assigned to manage the cultural resource program for the various OHV park units in southern California.

In addition, the proposed General Plan includes specific goals and management strategies for preservation, avoidance, and protection of cultural resources that may be present within Heber Dunes SVRA. The General Plan policies require planning to avoid or minimize disturbance of on-site cultural resources, appropriate actions if cultural resources are identified, and general stewardship of cultural resources within park property. These policies include the following:

CR Guideline 1.1: No cultural resources have been identified within Heber Dunes SVRA through studies to date. However, if unanticipated resources are discovered within or adjacent to areas that will be affected by proposed activities, such activities will be planned and designed to avoid or minimize impacts to the identified resources.

CR Guideline 1.2: In the event that some disturbance to cultural resources is unavoidable, appropriate measures will be identified and implemented in consultation with a qualified cultural resource professional. Such measures will be consistent with all applicable rules and regulations relating to the protection of cultural resources.

Oversight by the OHMVR Division Cultural Resource Management Program and the policies and guidelines set forth within the proposed General Plan would serve to protect cultural resources through active stewardship, monitoring, and management. Required compliance with federal and state cultural resource regulations and management goals would minimize potential that future development and improvements within Heber Dunes SVRA would cause substantial adverse effects on known or unknown prehistoric and historic resources present within park property. Thus, potential impact from implementation of the proposed General Plan to the significance of a historic or archaeological resource would be *less-than-significant*.

One new resource, temporary site number HD-1, was identified during the pedestrian archaeological survey of Heber Dunes SVRA. HD-1 consists of a secondary deposit of

historic material appearing to date to the first half of the 20th century. It is known that IID was involved in backfilling and ground-disturbing operations as part of the lining of the South Alamo Canal in 1989, which likely resulted in the disturbed mounds of soil presently visible. The site is not associated with a particular occupation in this location and appears to contain primarily mixed household refuse, including beverage, medicinal, and domestic product glass bottles, as well as domestic tableware ceramics. The site has been disturbed by the piling of artifacts into concentrations by well-intentioned park staff.

Preliminary assessment of this site suggests that it is not eligible for the CRHR and does not constitute a historical resource under CEQA as defined in Section 3.8.2. As a general refuse scatter dating after the initial settlement and development of irrigation and agriculture in Imperial Valley, temporary site number HD-1 is not associated with events that have made a significant contribution to broad patterns of state history and does not appear eligible under Criterion a, as defined in Section 3.8.2. Because it cannot be associated with a particular household, residential occupation, or person, it not does appear to be significant under Criterion b. As an archaeological site composed of a general scatter of unassociated household ceramics and glass, neither the resource nor any of its components are eligible under Criterion c. Temporary site number HD-1 appears to be a disturbed, secondary deposit with no stratigraphy and limited artifact provenance. This disturbed deposit contains the range, both in date and type, of historic artifactual materials commonly seen distributed in scatters in undeveloped and less developed areas of Imperial County. Documentation and analysis of diagnostic artifacts and recording of the site have exhausted its potential to yield information significant to local or state history. As such, the site is no longer eligible under Criterion d. Further, the mounded deposit overgrown by tamarisk and other vegetation at HD-1 retains little to no integrity of setting, feeling, or association. For these reasons, site HD-1 is not considered to be significant and, thus, disturbance of this site by current or future actions per the proposed General Plan would result in a *less-than-significant* impact.

The previously recorded South Alamo Canal (CA-IMP-7364H, P-13-007364), while older than 45 years along the segment adjacent to Heber Dunes SVRA's eastern boundary, is outside of the project area and would not be affected by any future actions associated with the proposed General Plan. There were no additional archaeological or historical sites recorded within a 1-mile radius of the project site. Any future acquisitions of land for Heber Dunes SVRA use as part of the proposed General Plan would require environmental analysis per CEQA, including evaluation of potential cultural resources impact. Because a large portion of the site has been previously disturbed by ongoing OHV use, the survey of the project site found only one nonsignificant site, and no cultural resource sites were recorded within the immediate vicinity of the project area, the potential to disturb an

unknown archaeological or historical site would be limited and is considered ***less-than-significant***.

The survey of the project site and a records search identified no human remains in the project area. It is not anticipated that human remains would be encountered during implementation of future actions within the project site as guided by the proposed General Plan. If buried human remains were encountered during any activity in the project area, no further disturbance would be allowed per the California Health and Safety Code Section 7050.5, and the required procedures would be followed. If the remains were determined to be Native American, the NAHC would be notified within 24 hours, as required by PRC 5097. The NAHC would notify designated most likely descendents who would provide recommendations for the treatment of the remains. Because the discovery of human remains on the project site is unlikely, and because of the required adherence to regulations if human remains were discovered during implementation of the proposed General Plan, the potential impact would be ***less-than-significant***.

Near-Term Facility Improvements Analysis

The areas proposed for disturbance as a result of the near-term improvements are almost entirely located in vacant, unvegetated, and previously disturbed areas. These areas were surveyed for cultural resources during the pedestrian survey with no significant resources identified, and the previous disturbance reduces the potential for significant cultural resources to remain. If unknown buried cultural resources were discovered during ground-disturbing activities associated with the near-term improvements, such as trenching for utility placement or pad grading, CSP guidelines and policies outlined in the proposed General Plan would dictate the protection and preservation of those resources. Because there is low potential for cultural resources to be located in areas proposed for development of the near-term facility improvements, and because policies exist to protect and preserve any resources that could be discovered during construction, the impact to the significance of a historic or archaeological resource would be ***less-than-significant***.

As described under the General Plan analysis, the new resource, HD-1, discovered during the pedestrian survey was not found to be significant, and disturbance of the site would not result in a significant impact. In addition, the location of site number HD-1 is outside of the proposed footprint of all near-term facility improvements and construction of these improvements would not disturb the site. For these reasons, implementation of the near-term facility improvements would result in a ***less-than-significant*** impact to site HD-1.

As described under the proposed General Plan analysis, it is not anticipated that human remains would be encountered within Heber Dunes SVRA. Because the discovery of human remains is unlikely during construction of the near-term facility improvements and

because of the required adherence to regulations if human remains were to be discovered, the potential impact would be *less-than-significant*.

3.8.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to cultural resources. Implementation of the near-term facility improvements would not result in significant impacts to cultural resources.

3.8.5 Mitigation Measures

No significant impacts to cultural resources would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to cultural resources would result from the near-term facility improvements and no mitigation is required.

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3.9 Geology and Soils

This section discusses the topics of geology, topography, seismicity, and soils. The geologic and seismic conditions and issues are addressed on a more regional basis, while topography and soil characteristics are addressed both at the regional level and the local level. The information in this section was summarized, in part, from the geologic review prepared for the project site, *Preliminary Geologic Review, Heber Dunes SVRA Site*, April 3, 2009, prepared by Wright Environmental Services (2009a). The Preliminary Geologic Review is attached as Appendix G of this document.

3.9.1 Existing Setting

Geological resources consist of the geology, soils, and topography of a given area. Geology includes bedrock materials, mineral deposits, and fossil remains. Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Topography is typically described with respect to the elevation, slope, aspect, and surface features found within a given area. Long-term geological, seismic, erosional, and depositional processes typically influence the topographic relief of an area. The principal geologic factors influencing the stability of built structures are soil stability and seismic properties.

Heber Dunes SVRA is located within the Imperial Valley, an essentially flat, alluvium-filled basin following the same northwest trend as the Salton Trough. Located in the south-central part of Imperial County, the valley is bounded to the north by the Salton Sea and extends south into Mexico. The Algodones Dunes and Sand Hills lie to the east; to the west are the Fish Creek Mountains, Superstition Hills, Superstition Mountains, and Coyote Mountains. The Yuha Desert lies to the southwest.

Geology

The geologic setting of Heber Dunes SVRA is encompassed by the southern Imperial Valley, part of the Salton Trough, a structural and topographic depression that lies within the Basin and Range physiographic province. The Salton Trough is an extension of the East Pacific Rise as it emerges from the 1,000-mile-long trough occupied by the Gulf of California and continues northward to Palm Springs. Several active faults occur within and near the project area, as detailed later in this section.

The sub-sea-level basin of the Salton Trough has received a continuous influx of sand, silt, and clay derived from the surrounding mountains and the Colorado River, which created ephemeral lakes in the Imperial Valley basin until roughly 300 years ago. As recently as 300 years ago, Lake Cahuilla filled the basin to the elevation of the Colorado River delta. The shoreline of this ancient lake has an elevation of about 35 feet above mean sea level and is visible today. Another geologic feature of the basin is the Imperial East Mesa. The

Imperial East Mesa is a terrace of the Colorado River delta located between the east side of the ancient lakebed and the Algodones Dunes.

The region is underlain by Quaternary lake deposits and alluvium. Quaternary sand dunes are mapped on the Heber Dunes SVRA property. A 1937 aerial photograph shows that, historically, the area surrounding the property was predominantly covered with sand dunes with a stream channel to the west of the site. The Imperial Fault crosses the property from southeast to northwest.

Topography

Heber Dunes SVRA consists of rolling sand dunes and areas of claypan soils. The dunes range in elevation from 25 to 50 feet above sea level and consist of fine sands with silty sand, clay silts, and silty clays. These topographic features are unique in that they are surrounded by flat, irrigated agricultural lands.

Soils

Six soil types exist at Heber Dunes SVRA. The majority of the site, approximately 85%, is composed of Rositas fine sand (284 acres). Other on-site soils types include Meloland and Holtville loams (21 acres), Vint loamy very fine sand (13 acres), Meloland very fine sandy loam (12 acres), Vint and Indio very fine sandy loams (9 acres), and Indio loam (1 acre) (USDA 1981).

The site is generally composed of stabilized sand dunes (fine sand with a minimal amount of silt) that overlay the Quaternary lacustrine deposits. Soil profiles appear to be very thin in vegetated areas. Vehicle tracks reveal some sandy areas that are slightly eroded.

Surface soil of the Rositas soil association consists of nearly level to moderately steep (with slopes up to 30%), excessively well-drained sand to silt loam formed in the transitional area between the ancient beachline of the Lake Cahuilla basin to the middle and upper levels of alluvial fans from the Imperial West Mesa. This soil type is deep (to at least 60 inches), highly permeable, and with a low water capacity. These soils are mainly used for desert recreation and wildlife habitat, but they have the potential for irrigated farming. The overall large size of the dune substrate at Heber Dunes SVRA precluded its development, unlike many of the smaller dune areas throughout the Salton Trough, which were easier to remove or level for other uses, such as agriculture.

There are many types of soil erosion, such as that caused by wind or water (including runoff). Soil erosion depends on numerous factors, including slope, propensity of certain soil types to erode under various conditions, how consolidated (compacted) the soil is, and water infiltration capacity. Some local and minor erosion has occurred from vehicle use at

the site. The vegetation appears to have stabilized the low hills/dunes, and slope problems and landslides have not been reported or observed.

Seismicity and Surface Rupture

The entire southern California region is a seismically active area with multiple fault lines. Imperial County is an area of high seismic activity. Most of the seismic activity is in the Salton Trough (Imperial Valley) and, consequently, the valley is subject to potentially destructive and devastating earthquakes. When an earthquake occurs, it generates seismic waves that spread out from the source of the earthquake. These waves cause the ground to shake and are what people refer to when they feel an earthquake. The shaking can range from being imperceptible to humans to a very violent movement making it difficult to stand and severely stressing structures. The degree of shaking varies with ground conditions and the magnitude of the earthquake. The shaking is normally greatest near the epicenter (directly above the source of the earthquake) and it may affect a wide area around the epicenter, with the intensity generally decreasing with distance.

Several regional faults are known to be quite active in the Salton Basin, including the San Andreas Fault and the San Jacinto Fault. Numerous other active faults occur in and near the project area, including the Imperial and Brawley faults. The Imperial Fault crosses the southern and central portions of the park from southeast to northwest. Rupture and/or ground distress has been noted at the South Alamo Canal and on the property (linear mark on the ground from the 1979 Imperial Valley Earthquake). In the past 100 years, five earthquakes with a magnitude equal to or greater than 6.5 have occurred within Imperial Valley, two of which were along the Imperial Fault. It was noted in the Geology Review (Wright Environmental Services 2009a) that there have been accounts of small tremors caused by the Imperial Fault.

An Alquist-Priolo Earthquake Fault Zone (Fault-Rupture Hazard Zone) is mapped for the Imperial Fault on the southern part of Heber Dunes SVRA. The project is not within the Alquist-Priolo Special Studies Zone Act of 1993 (California PRC Sections 2621–2630). About 55 centimeters of lateral offset was noted in Heber Dunes from the 1979 Imperial Valley Earthquake. Related earthquake effects, including ground cracking, sand boils, and lateral spreading, were observed near the park property from that earthquake.

Surface rupture results from permanent movement or displacement along a fault plane at the ground surface. Different types of movement are classified by their relative direction. If the displacement is predominantly horizontal, the fault is classified as strike-slip; if the movement is predominantly vertical, the fault is classified as either normal or reverse. The displacement can range from a few millimeters to several meters. Surface rupture does not occur in all earthquakes. Impacts associated with surface rupture can be reduced by

recognizing the faults where surface rupture capable of damaging structures may occur and avoiding construction on those faults.

Surface rupture has occurred on and near the project site and can be expected to occur again in future earthquakes on the Imperial Fault. Past ruptures appeared to occur in the near fault vicinity in the southern portion of the site near the fault and was in the same area as the 1940 earthquake.

Liquefaction

Liquefaction is a secondary response to ground shaking. Some soils, typically those composed of loose fill and sediment and saturated with water, can experience a change in physical properties when subjected to seismic waves. These soils lose their strength and rigidity and, therefore, the ability to support the weight of many structures. Liquefaction has historically been responsible for catastrophic destruction in areas built in reclaimed and other low-lying lands near water bodies. The potential for liquefaction is typically reduced by identifying those soils with liquefaction potential and using piles or some other means to transfer the weight of structures to stable soils. Lateral spreading, likely generated by liquefaction at depth, has been observed along Heber Road.

Landslides

Landslides are a geological phenomenon that includes a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. Although the action of gravity is the primary driving force for a landslide to occur, there are other contributing factors that affect original slope stability. Typically, preconditional factors build up specific subsurface conditions that make the area/slope prone to failure; however, the actual landslide often requires a trigger before being released. Landslides occur when the stability of a slope changes from a stable to an unstable condition. A change in the stability of a slope can be caused by a number of factors, both natural and human-made, acting together or alone.

Low sand dunes cover Heber Dunes SVRA, with a large area of the site being topographically level. No significant slope instability or landslide problems have been observed. The vegetation appears to have stabilized the low hills or dunes with no known slope problems. No landslides were reported in the Heber Dunes area from the 1979 Imperial Earthquake.

Regulatory Setting

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed to prevent the construction of buildings used for human occupancy on the surface trace of active faults and requires the

State Geologist to delineate earthquake fault zones by regulation along active faults within the state and to issue appropriate maps. For the purposes of the Alquist-Priolo Earthquake Fault Zoning Act, an active fault is one that has moved in the past 11,000 years.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. The Seismic Hazards Mapping Act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. The site is not located in a seismic hazard zone and, therefore, no further discussion is detailed in this analysis.

California Building Code

The California Building Code (CBC) is contained in CCR, Title 24, Part 2. Title 24 is assigned to the California Building Standards Commission, which is responsible for coordinating building standards. The CBC incorporates, by reference, the national Uniform Building Code (UBC), with California-specific amendments, including provisions to address potential seismic activity, and provides regulatory oversight to ensure that structural designs are specific and responsive to site conditions.

California Public Resource Code

The California PRC requires management and protection of soil resources specific to SVRA areas. Section 5090.35(a) states,

The protection of public safety, the appropriate utilization of lands, and the conservation of land resources are of the highest priority in the management of the state vehicular recreation areas; and, accordingly, the division shall promptly repair and continuously maintain areas and trails, anticipate and prevent accelerated and unnatural erosion, and restore lands damaged by erosion to the extent possible.

Soil Conservation Standard and Guidelines

The Soil Conservation Standard and Guidelines for Off-Highway Vehicle Recreation Management are applicable to OHV areas funded by the California OHV Trust Fund, including all SVRAs. The Guidelines provide measures to help achieve the standard that OHV recreation facilities shall be managed for sustainable long-term prescribed use

without generating soil loss that exceeds restorability, and without causing erosion or sedimentation that significantly affects resource values beyond the facilities.

3.9.2 Thresholds of Significance

The proposed General Plan would have significant environmental impacts related to geology and soils if it would do the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving the following:
 - rupture of known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map used by the State Geologist for the area or based on other substantial evidence of a known fault;
 - strong seismic ground shaking;
 - seismic-related ground failure, including liquefaction; or
 - landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

3.9.3 Environmental Evaluation

Analysis of the Proposed General Plan

Geology

The geologic composition of Heber Dunes SVRA is dominated by low sand dunes and flat claypan areas that would continue to be used for OHV recreation. No major excavation is anticipated for implementation of the General Plan. Minor trenching for utilities or concrete foundations for new structures within Heber Dunes SVRA would likely be required but would not be substantial or create geologic instability. Park facilities would be

appropriately located in areas that would not modify the unique sand dune areas. All regulatory requirements related to geologic stability and safety would be adhered to when designing and constructing Heber Dunes SVRA facilities. For these reasons, geologic impacts from implementation of the proposed General Plan would be *less-than-significant*.

Soils

The stabilized sand dunes and flat claypan areas are ideal for OHV recreation. In many areas, the vegetation at Heber Dunes SVRA appears to have stabilized the low hills/dunes. However, some erosion has occurred in areas where the soil layer has been disturbed by OHV use. NRCS provides ratings that indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil's surface. All of the soil types on-site have a rating of "slight," indicating that erosion is unlikely under ordinary climatic conditions (NRCS 2010). Though the soil erosion hazard is generally slight, erosion could occur from wind and infrequent periods of intense rainfall, most specifically in areas that have been disturbed. The potential for erosion generally increases as a result of human activity, primarily through development of structures and impervious surfaces, and the removal of vegetative cover.

It is possible that both construction and operation of actions taken under the proposed General Plan could result in the removal of vegetation or creation of impervious surfaces that could heighten the potential for erosion. However, there are multiple guidelines and procedures in place to minimize the potential for erosion and erosion-related hazards. Actions that would take place under the proposed General Plan would be required to meet all criteria in the 2008 Soil Conservation Standard and Guidelines. As required, the purposeful planning of use activities and facility locations, and the active management and maintenance of soil resources would reduce the potential for erosion.

The proposed General Plan also specifically includes guidelines related to maintaining soil stability and promoting soil conservation. Two of these guidelines are as follows:

NPR Guideline 1.2: Utilize an Adaptive Management Process for biological resources and soil resources that incorporates the 2008 Soil Conservation Standard and Guidelines and appropriate resource management.

RM Guideline 4: Close secondary trails to promote soil conservation and habitat protection. Closures would target trails that duplicate routes and that are unnecessary for maintenance of the overall experience.

In addition, Section 3.10, Hydrology and Water Quality, identifies best management practices (BMPs) and requirements directed at implementing sediment and erosion-

control measures for water quality purposes during both construction and operation of activities or facilities. Consistency with the *Off-Highway Vehicles Best Management Practices Manual for Erosion and Sediment Control* (CSP 2007) would be required.

As outlined above, there are multiple standards and guidelines related to minimizing erosion potential that must be met when implementing future actions under the proposed General Plan. With adherence to these guidelines and requirements, significant soil erosion impacts are not anticipated and impacts are considered ***less-than-significant***.

The soils on-site are adequate and appropriate to support the general types of facilities that could be constructed in conformance with the proposed General Plan. The shrink-swell hazard of the majority of the soils on-site is low. The site currently supports the use of septic systems without complications. Development of facilities under the proposed General Plan must adhere to all regulatory requirements related to soil safety, such as the CBC, and soil impacts related to expansion or septic systems would be ***less-than-significant***.

Seismicity and Surface Rupture

As described above, Heber Dunes SVRA is located in a seismically active area and has been subject to past seismic activity. There is a high potential that future earthquakes and other seismic activity could impact the site. Future earthquakes on the Imperial Fault can be expected to cause ground rupture and strong to very strong ground shaking on the property. Potential impacts associated with seismic activity may include shaking that could result in substantial damage to structures, liquefaction as a result of seismic shaking in an area of loose unconsolidated soils, and/or surface rupture with substantial damage to structures.

An Alquist-Priolo Earthquake Fault Zone (Fault-Rupture Hazard Zone) is mapped for the Imperial Fault on the southern part of Heber Dunes SVRA. Any proposed development within the mapped Earthquake Fault Zone requires geologic investigation on the fault and report(s) review by the oversight agencies. As stated in the Geologic Review, future development would require investigations for geologic hazards, and engineering studies should be performed (Wright Environmental Services 2009a).

The CBC and UBC serve to address potential seismic activity and provide regulatory oversight to ensure that structural designs are specific and responsive to site conditions. All facilities constructed under the proposed General Plan would conform to the CBC. These building codes, along with additional requirements determined through project-specific engineering and geologic studies, reduce the potential for harm or damage due to seismic activity. Given the conformance to building codes, additional geologic or engineering studies, and the requirements for any development within the Alquist-Priolo Earthquake Fault Zone,

impacts related to seismicity, strong ground shaking, or surface rupture would be ***less-than-significant***.

Liquefaction

High vibratory ground motion levels can be expected during seismic activity. Such ground motion brings the possibility of liquefaction. Liquefaction susceptibility is primarily a function of age, density, depth of sediment, and depth to groundwater. Generally, the susceptibility of liquefaction increases wherever unconsolidated material exists in the presence of sand lenses and high water tables. The liquefaction potential within Heber Dunes SVRA is considered very low, as it consists of relatively well-consolidated and dense materials (Wright Environmental Services 2009a). In addition, all building codes and engineering requirements related to soil and seismic safety would be adhered to, thus reducing the potential for harm or damage due to liquefaction. Therefore, impacts related to liquefaction would be ***less-than-significant***.

Landslides

Exclusive of the actual sand dunes, Heber Dunes SVRA is located on a topographically level site with little relief. Areas of structural development constructed under the proposed General Plan would likely take place in the flat, claypan areas or other flat locations and not within the sand dunes. No changes would occur to the overall topography to induce landslides. Impacts related to landslides would be ***less-than-significant***.

Analysis of the Near-Term Facility Improvements

Geology

Similar to the discussion of the proposed General Plan, no major excavation is anticipated for implementation of the near-term improvements other than minor trenching for utilities and concrete foundations and pads for structures. These excavations would not be substantial or create geologic instability. The proposed facilities would not modify the unique sand dune areas. All regulatory requirements related to geologic stability and safety would be adhered to when designing and constructing the proposed improvements. For these reasons, geologic impacts from implementation of the near-term facility improvements would be ***less-than-significant***.

Soils

The description of on-site soils for the proposed General Plan analysis is identical for that of the near-term facility improvements. Though the soil erosion hazard is generally slight, during construction and operation of the near-term facility improvements, erosion could occur from wind and infrequent periods of intense rainfall, most specifically in areas that

would be disturbed. The near-term facility improvements would result in the removal of vegetation and create new areas of impervious surface that could increase erosion. However, as described under the proposed General Plan analysis, there are multiple guidelines and procedures in place to minimize the potential for erosion and erosion-related hazards. Actions that would take place under the proposed General Plan would be required to meet all criteria in the 2008 Soil Conservation Standard and Guidelines, adhere to the guidelines included in the proposed General Plan related to maintaining soil stability and promoting soil conservation, be consistent with the OHV BMP Manual (CSP 2007), and implement any other sediment or erosion-control measures specified in other documents or permits. With adherence to these guidelines and requirements, significant erosion impacts are not anticipated, and impacts are considered ***less-than-significant***.

As outlined under the analysis of the proposed General Plan, development of the near-term facility improvements must also adhere to all regulatory requirements related to soil safety, such as the CBC; therefore, soil impacts related to expansion or the use of septic systems would be ***less-than-significant***.

Seismicity and Surface Rupture

Potential impacts associated with seismic activity as described for the proposed General Plan would also be applicable to the near-term facility improvements. The near-term facility improvements would not be located in the southern part of the park and no structures would be placed over or near the trace of the Imperial Fault that traverses the site. The near-term facility improvements would be located outside of the Alquist-Priolo Earthquake Fault Zone (Fault-Rupture Hazard Zone) that is mapped for the Imperial Fault on the southern part of Heber Dunes SVRA. All buildings constructed for the near-term facility improvements would conform to the CBC and other regulatory requirements regarding seismic safety to minimize harm or damage from seismic activity. Given the conformance to building codes and any additional geologic or engineering studies, impacts related to seismicity or surface rupture would be ***less-than-significant***.

Liquefaction

As described for the proposed General Plan, the liquefaction potential within Heber Dunes SVRA is considered very low, as it consists of relatively well-consolidated and dense materials. In addition, all building codes and engineering requirements related to soil and seismic safety would be adhered to for design and construction of the near-term facility improvements, thus reducing the potential for harm or damage due to liquefaction. Therefore, impacts related to liquefaction would be ***less-than-significant***.

Landslides

The near-term facility improvements would not be located on areas with dunes or steep slopes. No changes would occur to the overall topography to induce landslides. Impacts related to landslides would be *less-than-significant*.

3.9.4 Summary of Significant Impacts

No significant impacts to geology and soils would result from implementation of the proposed General Plan or the near-term facility improvements.

3.9.5 Mitigation Measures

No significant impacts to geologic resources would result from implementation of the proposed General Plan or near-term facility improvements and no mitigation is required.

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3.10 Hydrology and Water Quality

This section provides a summary of the existing hydrologic conditions within the project area, identifies current water resource regulations, and evaluates potential water quality and hydrologic impacts associated with the implementation of the proposed General Plan and several near-term facility improvement projects.

3.10.1 Existing Setting

Surface Water

Heber Dunes SVRA is located within the Imperial Hydrologic Unit (HU) of the Colorado River Basin, as defined by the State Water Resources Control Board (SWRCB) (Figure 3.10-1). The Imperial HU encompasses an area of approximately 2,271 square miles.

Annual rainfall averages approximately 3 inches within the vicinity of Heber Dunes SVRA. Precipitation over the entire area occurs mostly from November through April, and August through September, but its distribution and intensity are often sporadic. Local thunderstorms may contribute all of the average seasonal precipitation at one time, or only a trace of precipitation may be recorded at any locale for the entire season (CRBRWQCB 2006).

The major drainages within the Imperial HU are the Alamo River and New River. The Alamo River lies approximately 0.5 mile east of Heber Dunes SVRA and the New River lies approximately 9 miles west. Both rivers drain to the Salton Sea, approximately 30 miles northwest of Heber Dunes SVRA. These rivers convey agricultural irrigation drainage water from farmlands in the Imperial Valley, surface runoff, and lesser amounts of treated municipal and industrial waste waters from the Imperial Valley. The flow in the New River also contains agricultural drainage, treated and untreated sewage, and industrial waste discharges from Mexicali, Mexico (CRBRWQCB 2006).

Colorado River water, imported via the All American Canal, is the predominant water supply and is used for irrigation, and industrial and domestic purposes (CRBRWQCB 2006). Numerous canals and agricultural drainages also occur within the Imperial HU. The Ash Main Canal lies approximately 0.5 mile west of Heber Dunes SVRA, while the South Alamo Canal borders Heber Dunes SVRA on the east and south boundaries. Additional irrigation canals and drainages border the site on the west.

The majority of surface drainage (storm water runoff) appears to infiltrate to groundwater. Overall drainage is west and northwest and appears to be confined by the perimeter road (Wright Environmental Services 2009a). Heber Dunes SVRA does not drain to the Alamo River.



Path: P:\2007\07080197.10 Heber Dunes\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Figures\EIR\Figures3.10-1_HydrologicUnits.mxd, 12/09/10, Shals2

Source: California State Parks 2009; NAIP 2009

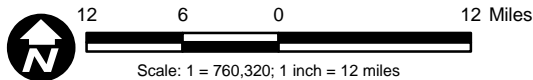


Figure 3.10-1
Imperial Hydrologic Unit

Groundwater

Very large groundwater aquifers underlie Imperial Valley. Groundwater is stored in the Pleistocene sediments of the valley floor; however, the fine-grained lake sediments in the central portion of Imperial Valley inhibit groundwater movement, and tile-drain systems are used to dewater the sediments to a depth below the root zone of crops and to prevent the accumulation of saline water on the surface. Few wells have been drilled in these lake sediments because the yield is poor and the water is generally saline. The few wells in the valley are for domestic use only. In the Coyote Wells Hydrologic Subunit and Davies HU, which are at higher elevations, the water yield from wells is higher, and the waters are of lower salt concentration. Groundwater is the main water supply in these areas. Factors that diminish groundwater reserves are consumptive use, evapotranspiration, evaporation from soils where groundwater is near the surface, and losses through outflow and export (CRBRWQCB 2006).

Groundwater in shallow aquifers near the project area is estimated to occur within 50 feet of the surface. U.S. Geological Survey (USGS) drill boreholes for earthquake studies after the 1979 earthquake showed shallow groundwater about 5 feet below the surface near Heber Road a few miles north of the property (Wright Environmental Services 2009a).

Floodplain

Heber Dunes SVRA is situated within the Imperial Valley floor at an elevation of approximately 25 to 50 feet above mean sea level. Despite the site's low elevation and flat topography, the potential for flooding is low, as it is situated approximately 0.25 mile east of the 100-year flood zone (i.e., an area having a 1% chance of being inundated in any given year) designated for the Alamo River.

Water Quality

Heber Dunes SVRA is located within the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) (Region 7), which is responsible for implementation of state and federal water quality protection laws and regulations within the Colorado River Basin, including Heber Dunes SVRA.

Beneficial Uses of Water

The Region 7 Basin Plan (CRBRWQCB 2006) establishes beneficial uses for surface water and groundwater within the Colorado River Basin. Existing beneficial uses designated for water bodies within the vicinity of Heber Dunes SVRA are the following:

- Alamo River – Freshwater replenishment; water contact (infrequent fishing) and noncontact recreation; warm freshwater habitat; wildlife habitat; preservation of rare, threatened, or endangered species; and potential hydropower generation.
- Groundwater – Municipal and domestic supply and industrial service supply

2006 CWA Section 303(d) List of Water Quality Limited Segments for Region 7

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of surface water bodies that are impaired for water quality. The waters on the list are designated as not meeting water quality standards, even after point sources of pollution have installed the minimum required levels of pollution-control technology. The law requires that priority rankings be established for waters on the list for the development of action plans, called Total Maximum Daily Loads (TMDLs), to improve the water quality (SWRCB 2006). TMDLs are a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.

The Alamo River is listed as impaired on the current 303(d) list for chlorpyrifos, DDT, dieldrin, polychlorinated biphenyls, selenium, and toxaphene (SWRCB 2006). Recent proposed additions include chlordane, diazinon endosulfan enterococcus, escherichia coli (E. coli), and mercury (CRBRWQCB 2008).

Total Maximum Daily Loads

Currently, TMDLs for selenium and sedimentation/siltation are in effect, primarily to protect the Salton Sea. TMDLs for all other listed pollutants are proposed to be completed by 2019.

Regulatory Setting

Regulations exist at federal and state levels that guide the development and enforcement of codes to protect water resources. These regulations include those outlined below.

Federal Regulations

Federal Clean Water Act of 1972

The primary federal law regulating water quality is the CWA, issued by EPA. EPA delegates its authority in California to SWRCB and Regional Water Quality Control Boards (RWQCBs). Each RWQCB prepares and adopts a Water Quality Control Plan (Basin Plan), which is a master policy document for managing surface and groundwater quality throughout each respective region. SWRCB and RWQCBs issue permits, which implement the standards included in the Basin Plan plus other requirements of the State Water Code and the CWA.

The purpose of the CWA is to provide guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters through prevention and elimination of pollution. The CWA applies to discharges of pollutants into waters of the U.S. The CWA establishes a framework for regulating storm water discharges from municipal, industrial, and construction activities under the National Pollutant Discharge Elimination System (NPDES). Under the CWA, municipalities across the nation are issued Municipal NPDES permits. In California, SWRCB administers the NPDES program. The following CWA sections are most relevant to this analysis:

- Section 303(d) of the CWA requires states, territories, and authorized tribes to develop a list of water bodies that are considered to be “impaired” from a water quality standpoint. Water bodies that appear on this list do not meet water quality standards even after the minimum required levels of pollution control technologies have been implemented to reduce point sources of pollution. In turn, the law requires that respective jurisdictions (i.e., RWQCBs) establish priority rankings for surface water bodies on the list and develop action plans, referred to as TMDLs, to improve water quality. The California SWRCB publishes the list of water-quality-limited segments in California.
- Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. obtain a state certification that the discharge complies with other provisions of the CWA. The California Water Resources Control Board administers the certification program within California through its nine RWQCBs.
- Section 402 of the CWA establishes the NPDES permit program to regulate the discharge of pollutants from point sources. The CWA defines point sources of water pollutants as “any discernable, confined, and discrete conveyance” that discharges or may discharge pollutants. These are sources from which wastewater or storm water is transmitted in some type of conveyance (pipe and channel) to a water body; they are classified as municipal or industrial. Municipal point sources consist primarily of domestic treated sewage and processed water, including municipal sewage treatment plant outfalls and storm water conveyance system outfalls. These outfalls contain harmful substances that are emitted directly into waters of the U.S. Without a permit, the discharge of pollutants from point sources into navigable waters of the U.S. is prohibited. NPDES permits require regular water quality monitoring. Assessments must be completed to ensure compliance with the permit standards.
- Section 403 of the CWA provides that point source discharges to the territorial seas, contiguous zones, and oceans are subject to regulatory requirements in addition to

the technology- or water-quality-based requirements applicable to typical discharges. The requirements are intended to ensure that no unreasonable degradation of the marine environment will occur as a result of a discharge, and to ensure that sensitive ecological communities are protected. These requirements can include ambient monitoring programs designed to determine degradation of marine waters, alternative assessments designed to further evaluate the consequences of various disposal options, and pollution prevention techniques designed to further reduce the quantities of pollutants requiring disposal and thereby reduce the potential for harm to the marine environment. If CWA Section 403 requirements for protection of the ecological health of marine waters are not met, an NPDES permit will not be issued.

- Section 404 of the CWA establishes a permit program, administered by the U.S. Army Corps of Engineers (USACE), regulating discharge of dredged or fill materials into waters of the U.S., including wetlands. Activities in waters of the U.S. that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. CWA Section 404 permits are issued by USACE.

California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) Plan was designated in 1976 through the Federal Land Policy and Management Act (FLPMA) for the California Desert. The purpose of the CDCA Plan is to establish guidance for the balanced and environmentally sustainable management of the public lands of the California Desert by BLM. The CDCA Plan establishes long-term goals for protection and use of the California Desert and establishes four multiple-use classes for management. The class designations govern the type and degree of land-use actions allowed within the areas defined by these different classes. As such, all land-use actions and resource-management activities must meet the guidelines given for each class. These multiple-use classes are defined below (BLM 1999):

- Class C (Controlled Use): These lands are to be preserved in a natural state; access is generally limited to nonmotorized, nonmechanized means. In terms of water quality, these areas are managed to maintain and enhance both surface and groundwater resources.
- Class L (Limited Use): These lands are managed to protect sensitive, natural, scenic, ecological, and cultural resource values. They provide for generally lower intensity, carefully controlled multiple uses that do not significantly diminish resource values. In terms of water quality, these areas are managed to provide for the protection of

water resources, except for instances of short-term degradation caused by water development projects. BMPs can be used to avoid degradation.

- Class M (Moderate Use): These lands are managed in a controlled balance between higher intensity use and protection. A wide variety of uses such as mining, livestock grazing, recreation, energy, and utility are allowed. Any damage that permitted uses cause must be mitigated. In terms of water quality, areas in this class are managed to minimize degradation of water quality and comply with CWA Section 208. BMPs are used to avoid impact to water quality.
- Class I (Intensive Use): These lands are managed for concentrated use to meet human needs. Reasonable protection is provided for sensitive natural values, and mitigation of impacts and rehabilitation of impacted areas will occur when possible. In terms of water quality, areas in this class are managed to minimize degradation of water quality and comply with CWA Section 208. BMPs are used to avoid impact to water quality.

According to the above definitions, the project site contains primarily Class I or M lands, with some limited Class L or C areas designated for resource protection.

Page 79 of the CDCA Plan outlines natural resource impact minimization guidelines as follows:

While vehicle-access designations generally follow multiple-use class boundaries, there are several cases where the area's vehicle designation may be either more restrictive or less restrictive than that of the surrounding multiple-use class. Examples include Special Areas, sand dunes, and dry lakes.

All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands, and in accordance with the following criteria:

- (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention shall be given to protect endangered or threatened species and their habitats.
- (c) Areas and trails shall be located to minimize conflicts between off-road-vehicle use and other existing or proposed recreational uses of the same or

neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

- (d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road-vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

State Regulations

2008 Soil Conservation Standard and Guidelines

CSP was required by Chapter 1027/86 of the PRC to establish a generic soil loss standard by January 1, 1991, to allow for rehabilitation of OHV areas and trails. These standards were updated in 2008 in compliance with an assembly bill requiring OHMVR Division to establish a measurable soil conservation standard for restoration of OHV areas and trails. The 2008 standards strive to guide sustainable, long-term management of trails and reduce erosion and sedimentation impacts through the following:

- Maintenance and monitoring protocols;
- Sustainable design and construction guidelines; and
- Trail assessment and design using physiographic data including topography, geology and soils, vegetation, and water course types and protection zones.

OHV Best Management Practices Manual for Erosion and Sediment Control

The OHV BMP Manual was prepared for OHMVR Division to provide guidelines for selecting and implementing BMPs to prevent impacts to water quality from OHV trail construction projects; the construction and maintenance of low-volume access roads; the creation of new buildings, campgrounds, and other user facilities; special OHV events; and routine park maintenance. The OHV BMP Manual was compiled to be specific to use by the Carnegie SVRA but also provides useful BMP selection and design guidance statewide.

The OHV BMP Manual provides methods to minimize the impacts of erosion and sedimentation on water quality, including guidance for selecting appropriate BMPs for Storm Water Pollution Prevention Plans (SWPPPs). There is also guidance on designing and building future trails and roadways in a manner that will minimize watershed and water quality impacts.

To comply with existing water quality and erosion-control regulations, goals outlined in the OHV BMP Manual are as follows (CSP 2007):

1. Minimize soil erosion and compaction of soils resulting in loss of soil productivity and sedimentation to waterways.
2. Minimize disturbance and sedimentation to riparian areas, wetlands, and waterways adversely impacting amphibians and wildlife.
3. Minimize spread of invasive, nonnative, and noxious weeds along travel routes, and minimize disturbance to botanical resources.
4. Prevent the creation of additional routes in Environmentally Sensitive Areas.

Statewide General NPDES Permit for Construction Activity

The State of California adopted a new Construction General Permit on September 2, 2009, and enforcement began on July 1, 2010. SWRCB Water Quality Order 2009-0009-DWQ (Construction General Permit) regulates construction site storm water management. Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit for discharges of storm water associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

Permit applicants are required to submit a Notice of Intent (NOI) to SWRCB and to prepare a SWPPP. The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on potential pollutants. The BMPs identified are directed at implementing both sediment- and erosion-control measures and other measures to control potential chemical contaminants. The SWPPP also includes descriptions of the BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (post-construction BMPs).

Porter-Cologne Water Quality Control Act of 1969

Division 7 of the California Water Code is the basic water quality control law for California. This law is titled the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act establishes a regulatory program to protect water quality and to protect beneficial uses of state waters.

California Fish and Game Code

Under Sections 1601–1603 of the California Fish and Game Code, agencies are required to notify CDFG prior to implementing any project that would divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake.

Colorado River Basin Plan

The Basin Plan for the Colorado River Basin (CRBRWQCB Region 7), most recently amended in 2006, establishes water quality objectives for constituents that could potentially cause an adverse effect or impact to the beneficial uses of water (CRBRWQCB 2006). Specifically, the Colorado River Basin Plan is designed to accomplish the following:

- (1) designate beneficial uses for surface and ground waters;
- (2) set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to California’s anti-degradation policy;
- (3) describe implementation programs to protect the beneficial uses of all water in the region; and
- (4) describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan.

The Colorado River Basin Plan incorporates by reference all applicable SWRCB and RWQCB plans and policies.

3.10.2 Thresholds of Significance

The proposed General Plan and near-term facility improvements would have significant environmental impacts related to hydrology and water quality if they would do the following:

- Result in a substantial increase in impervious surfaces and associated increased runoff;
- Result in a substantial increase in erosion and sedimentation;
- Substantially degrade the quality of groundwater and surface water;
- Violate federal, state, or regional water quality standards; or

- Require or result in the construction of new storm water drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

3.10.3 Environmental Evaluation

General Plan Analysis

The proposed General Plan includes goals and guidelines for improving the quality of the recreational experience while protecting and maintaining natural communities. For example, NPR Guideline 1.2 states that OHMVR Division's 2008 Soil Conservation Standard and Guidelines would be implemented. In addition, future actions would also be guided by the OHV BMP Manual that provides guidelines for selecting and implementing BMPs to prevent impacts to water quality from OHV use and related activities. Per the manual and guidelines, project-appropriate BMPs would be implemented to protect water quality and may include measures such as erosion-control mats, silt fences, fiber rolls, sedimentation basins, and berms, among other feasible and effective options.

Construction activities as part of the proposed General Plan would be subject to other applicable permitting requirements, such as the Construction General Permit issued by the RWQCB. This permit would require preparation of a SWPPP, including identification of construction BMPs that must be implemented to reduce construction effects on receiving water quality, plus post-construction BMPs.

Future actions implemented as part of the proposed General Plan that would require construction and the creation of new impervious surfaces would likely have impacts similar to those discussed below in the near-term facility improvements section. Consistency with management goals and implementation of BMPs specifically identified for future actions would minimize the potential that development and improvements within Heber Dunes SVRA would cause substantial adverse effects on hydrology and water quality. Therefore, as fully detailed below in the near-term facility analysis, potential water quality impacts related to impervious surfaces and runoff, increases in erosion and sedimentation, ground and surface water quality, and storm water drainage facilities due to implementation of the proposed General Plan are considered *less-than-significant*.

Near-Term Facility Improvements Analysis

Impervious Surfaces

Implementation of the near-term facility improvements discussed in Section 2.6 are intended to provide basic park facilities related to administration, maintenance operations, and recreation opportunities. Implementation of these actions would result in an increase

in impervious surfaces and associated increased runoff. The development of any facilities in a location that was previously occupied by pervious surfaces could increase runoff. Some of the proposed improvements require the construction of new buildings and concrete pads and have the potential to create impervious development in areas that may currently be pervious, such as the residence area and camp host sites, maintenance facility and ranger/staff station, and picnic areas. Though the proposed near-term facility improvements would create some new areas of impervious surfaces, the majority of the 340-acre site would remain in its existing undeveloped condition. The extensive pervious areas maintained throughout the site would serve to absorb and drain any new runoff created by the new impervious surfaces. In addition, this arid region receives minimal rainfall, averaging only 3 inches yearly.

Any facility improvement projects would be developed in compliance with the Construction General Permit, 2008 Soil Conservation Standard and Guidelines, and OHV BMP Manual, and would be required to control construction-related erosion and sedimentation impacts. The Construction General Permit and guidance documents would outline BMPs that would be implemented during construction to help minimize sedimentation and the amount of runoff, which may include sedimentation basins, check dams, silt fencing, and immediate revegetating/hydroseeding of cleared areas. Operation-related (post-construction) BMPs would also be implemented for the proposed projects, mitigating the potential for sedimentation and increases in rate or amount of runoff, including Low-Impact Development (LID) BMPs (vegetated swales, detention basins, permeable pavement, infiltration basins or trenches) and incorporating berms or similar containment measures in paved areas.

As described above, significant impacts related to increased areas of impervious surfaces are not anticipated, as the amount of new impervious surface is relatively small, there are large areas of pervious surface available to absorb and drain any resulting runoff, and appropriate water quality regulations and permitting would be adhered to. Therefore, water quality and hydrology impacts related to impervious surfaces are considered ***less-than-significant***.

Erosion and Sedimentation

The potential for erosion generally increases as a result of human activity, primarily through development of structures and impervious surfaces and the removal of vegetative cover. As discussed above, some of the near-term facility improvements would increase the amount of impervious surfaces and require a minimal removal of vegetative cover. The proposed facility improvements have the potential to increase erosion and sedimentation, which could impact South Alamo Canal.

However, construction phase BMPs would be required, in accordance with the Construction General Permit requirements, to control construction erosion and sedimentation impacts. In addition, post-construction phase BMPs would be required, and may include the use of vegetated swales, infiltration basins, permeable pavement, and berms; these would minimize runoff and resultant erosion and provide filtration to avoid sediment from entering the South Alamo Canal. For the demolition and construction phases, each respective project that is greater than 1 acre would adhere to the required project SWPPP that specifies BMPs consistent with the General Construction Permit for the purposes of controlling wet weather erosion.

Significant erosion or sedimentation impacts are not anticipated if regulations, BMP requirements, and soil conservation guidelines are adhered to. Therefore, impacts related to erosion and sedimentation are considered *less-than-significant*.

Groundwater and Surface Water Quality

Groundwater Impacts

Groundwater supplies within the Heber Dunes SVRA region are limited by both the geology and the semiarid hydrologic conditions of the region. Only a small portion of the region is underlain by permeable geologic formations that can accept, transmit, and yield appreciable amounts of groundwater. As discussed above, additional impervious surfaces could result from the development of near-term facility improvements. However, none of the improvement projects would involve any long-term use of groundwater and no substantial adverse impacts are expected.

The site currently supports the use of a septic system on-site, and geology and soils are adequate for this type of wastewater disposal system. The proposed near-term facility improvements would include installation of a new septic system for the staff residence area. The use of a septic system would not create significant impacts to groundwater quality in the area.

Construction of the near-term facilities improvements would include some ground excavation for utility installation and shallow ground disturbance for building foundation and pad construction. These ground-disturbing activities are not anticipated to reach groundwater depth. However, if groundwater is encountered during proposed project construction, dewatering, in compliance with the NPDES general permit for construction dewatering, would be required to avoid flooding in excavated areas. Due to the short duration of such activity, no associated substantial adverse impacts related to groundwater supplies, recharge, or movements are expected to result from dewatering. Therefore, impacts to groundwater quality are considered *less-than-significant*.

Surface Water Impacts

The Alamo River, listed as impaired on the current 303(d) list, is located approximately 0.5 mile east of Heber Dunes SVRA. Since overall drainage is west and northwest of the site and the site does not drain to the Alamo River, no adverse impacts to the Alamo River are expected from any facility improvement projects. The South Alamo Canal is located immediately outside of the Heber Dunes SVRA boundary; therefore, some of the proposed near-term facility improvement projects could potentially create a water quality impact to the South Alamo Canal.

The near-term facility improvements could allow for contaminants to enter the South Alamo Canal through typical construction activities, such as the following:

- Earthwork associated with the construction of the proposed residence area or new roadway transit, including excavating, repositioning, and compacting of materials. Soil could enter the South Alamo Canal during storm events unless control measures (construction BMPs) are implemented.
- Demolition and construction activities could generate airborne particulates. These particulates could enter the South Alamo Canal during storm events unless control measures and BMPs are implemented.
- Demolition and/or construction activities could involve spills or releases from associated equipment (e.g., spills during refueling and maintenance activities, oil leaks from equipment). These contaminants could enter the South Alamo Canal during storm events unless control measures are implemented.

The proposed project must adhere to the Construction General Permit requirements. As such, erosion and sediment controls would be used and the requirements of the SWPPP would be in place during construction activities to reduce the amount of soils disturbed and to prevent disturbed soils from entering runoff and the South Alamo Canal.

Operation of the proposed improvement projects, when built, could potentially increase impervious surface area and thus increase potential for pollutant loading into the South Alamo Canal without implementation of adequate post-construction BMPs. As described above, the majority of the site would remain as pervious surface that would absorb and drain the runoff associated with the new impervious surfaces. In addition, the proposed projects could increase the amount of vehicle traffic and other motor-generated pollutants, which could create source pollutants such as brake dust or motor oil deposits that could impact the South Alamo Canal.

Significant impacts are not anticipated if regulations are adhered to. Therefore, impacts related to surface water are considered *less-than-significant*.

Water Quality Standards

All regional, state, and federal water quality standards as stated in the Colorado River Basin Plan are currently implemented through the RWQCB (CRBRWQCB 2006). These standards have been set to control both point and nonpoint sources of water pollution. Proposed near-term facility improvements could potentially increase the amount of pollutants entering water resources within the Heber Dunes SVRA region. However, all development associated with the improvement projects would be required to conform to the water quality standards enforced by SWRCB. This would include applying for and complying with NPDES and storm water permits, all relevant sections of the CWA, and all other relevant standards and regulations.

Additionally, because the proposed project would be subject to the newly adopted Construction General Permit (2009-0009-DWQ), future associated proposed projects would adhere to the corresponding updated requirements as well, which are stated above under State Regulations.

As described above, the proposed improvement projects would be required to adhere to pertinent federal, state, and regional water quality standards, such as the Construction General Permit, and all CSP and OHMVR Division standards and guidelines.

Significant impacts are not anticipated if regulations are adhered to. Therefore, impacts related to water quality standards are considered *less-than-significant*.

3.10.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to hydrology or water quality. Implementation of the near-term facility improvements would also not result in significant impacts to hydrology or water quality.

3.10.5 Mitigation Measures

No significant impacts to hydrology or water quality would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to public hydrology or water quality would result from the near-term facility improvements and no mitigation is required.

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3.11 Public Services and Utilities

The following section includes a description of the existing infrastructure and public services at Heber Dunes SVRA and the surrounding area, and the extent to which the proposed General Plan and the near-term facility improvements at Heber Dunes SVRA would require an expansion of services in response to the demand generated. This analysis focuses on the following topics: park security; fire protection; medical aid; emergency access and egress; water source and water treatment facilities; and electricity, gas, and telephone service. Water quality issues associated with storm water runoff are addressed in Section 3.10, Hydrology and Water Quality.

3.11.1 Existing Setting

Emergency Services

State Park Rangers provide security for Heber Dunes SVRA, are the first to respond to fire and medical emergencies, and have law enforcement authority. In the event of an emergency, the on-site park ranger requests assistance from the Southern Communication Center (SURCOM) of the California State Parks Radio System. SURCOM directs requests to the relevant responsible agency. In addition, calls made to 911 from cell phones within Heber Dunes SVRA are automatically routed to the California Highway Patrol, which then transfer the calls to SURCOM.

Security

The on-site park ranger provides security for the Heber Dunes SVRA and is the first to respond to fire and medical emergencies on-site. State Park Rangers are peace officers under California Penal Code 830.2 and PRC 5008. If the emergency is beyond the ability of the ranger, the ranger will use radio communication with SURCOM to notify the Imperial County Sheriff's Office to mobilize the adequate response for the security or emergency situation.

Fire Protection

Imperial County Fire Department (ICFD) is the jurisdictional agency responsible for responding to fires within Heber Dunes SVRA. The closest ICFD fire station is in Heber, approximately 5 miles west of the entrance to Heber Dunes SVRA. The typical response time from the Heber station to Heber Dunes SVRA is approximately 10 to 15 minutes (Imperial County Fire Department 2009). The station is equipped with a three-person engine company. ICFD currently pumps water out of the South Alamo Canal when responding to fires at Heber Dunes SVRA. Radio communication between the park ranger,

SURCOM, and ICFD allows for the mobilization of adequate response in the case of an emergency.

Medical Aid

ICFD automatically responds to all 911 calls originating from within Heber Dunes SVRA with an ambulance. In addition, Goldcross Ambulance automatically responds to all 911 medical aid calls originating within Heber Dunes SVRA. If Gold Cross Ambulance is unable to respond, the City of Calxico Fire Department also provides ambulance support.

On-site rangers typically serve as first responders to medical emergencies and are trained in emergency responder medical aid. Medical equipment on-site includes oxygen, trauma kits, and equipment to assess the extent of injuries, such as blood pressure gauges and stethoscopes.

Emergency Access/Egress

Regional access is via SR-7 and direct access to Heber Dunes SVRA is provided by Heber Road. Internal access is via Heber Dunes Road, which is a paved roadway extending from the entrance at Heber Road at the northern Heber Dunes SVRA boundary approximately 2,000 feet southwest, paralleling the western boundary of the site. Heber Dunes Road provides primary access for emergency responders. Outside of the paved road, Heber Dunes SVRA is dominated by sand dunes. If a person were to be injured in the remote sandy dunes area, that person would be transported via four-wheel drive vehicle back to the emergency response vehicle or airlifted out, if necessary.

Utilities

Water Source and Water Treatment Facilities

Heber Dunes SVRA purchases water from IID. All water used in Heber Dunes SVRA comes from the South Alamo Canal, which runs along the eastern boundary of the property. The South Alamo Canal is fed by the All American Canal, which receives water from the Colorado River. Water from the South Alamo Canal is treated by an on-site water treatment plant. Water is diverted from the canal into a cistern with a rock filtration system. The 2,000-gallon cistern is located east of the shower/restroom facility, immediately east of the Heber Dunes SVRA property boundary, and just west of the canal. The cistern is owned by IID and maintained by OHMVR Division. Once the water has been treated by the rock filtration system, it goes through reverse osmosis and is treated by chlorine and then held in a sealed 4,000-gallon storage tank.

At times, South Alamo Canal water has high turbidity and pH levels. Turbidity is an issue when many farmers in the region are using water, which stirs up sediment within the canal.

The pH becomes elevated due to algae blooms that occur during periods of high temperatures. Turbidity and pH are addressed through the on-site treatment process.

Potable water is distributed to the shower/restroom facility and the permanent staff residence site. Water use at the shower/restroom facility includes water faucets, drinking fountains, restrooms with flush toilets, and showers. The shower/restroom facility contains four restrooms, two public showers, and two drinking water fountains. Each restroom has a flush toilet, sink, and floor drain.

No fire hose cabinets or hydrants are located within Heber Dunes SVRA. Fire response equipment currently uses water from the South Alamo Canal to refill fire truck tanks in the event of a fire.

Wastewater

Wastewater from the shower/restroom facility and the ranger/staff station are served by a septic system. The shower/restroom facility was built in 2008.

Electricity

IID provides electricity to Heber Dunes SVRA. Three large SDG&E electrical transmission towers bisect the southwest corner of the site and carry high-voltage 500-kilovolt (kV) overhead electric lines across the site. These lines were built in 1984 and have been designated as Western Electric Corridor. SDG&E has a 200-foot-wide easement associated with the transmission towers and lines through Heber Dunes SVRA.

Generally, SDG&E uses existing roads to access its facilities, with the exception of the southernmost tower where access can be obscured by shifting sands. SDG&E patrols the lines by air and land, and washes the insulators on the towers as needed (typically once a year) using deionized water. SDG&E requires 24-hour access to these facilities to respond to unexpected emergency outages.

On-site electrical service is provided to existing facilities, such as the on-site staff residence, showers/restrooms facility, and security lighting, via wooden transmission poles carrying overhead low-voltage transmission lines.

Natural Gas

A 200-gallon propane tank is used for heating water and cooking at the permanent trailer site. The tank is refilled as needed.

Telephone

Telephone lines and service are provided by AT&T to the permanent residence site. The telephone cables are located above the ground and run from the Heber Dunes SVRA entrance to the end of Heber Dunes Road, at which point they are conveyed underground to the residence, shower/restroom facility, and maintenance area.

Solid Waste

Allied Waste Management provides trash collection and recycling services in Imperial County. Dumpsters are provided and maintained by Allied Waste Management and are located throughout Heber Dunes SVRA. Solid waste is then transported to the Allied Imperial Landfill. The Allied Imperial Landfill is located at 104 East Robinson Road in an unincorporated area, east of the city of Imperial, approximately 15 miles from the project site.

Permitted waste types at the Allied Imperial Landfill are Class III, nonhazardous, municipal waste, including agricultural, ash, construction/demolition, industrial, mixed municipal, and tires. The permitted rate of disposal for the landfill is a maximum of 1.135 tons per day (CalRecycle 2010).

Regulatory Setting

Regulations exist at local, state, and federal levels that guide the development and enforcement of codes to adequately provide public services and facilities to city and county residents and businesses. These regulations include the following.

Uniform Fire Code

The Uniform Fire Code (UFC) is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The UFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The UFC and UBC use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the UFC employs a permit system based on hazard classification.

California Fire Code

The California Fire Code (CFC) and Office of the State Fire Marshall provide regulations and guidance for local agencies in the development and enforcement of fire safety standards.

The CFC also establishes minimum requirements that would provide a reasonable degree of safety from fire, panic, and explosion.

Imperial County

Imperial County has an Emergency Operations Plan that serves as a comprehensive, single source of guidance and procedures to prepare for and respond to significant or catastrophic natural, environmental, or conflict-related risks that produce situations requiring coordinated response. The ICFD is the local Office of Emergency Services in Imperial County and provides leadership in all phases of developing emergency response management (Imperial County 2007).

3.11.2 Thresholds of Significance

The proposed General Plan project and the near-term facilities would have significant environmental impacts related to public services if they would do the following:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services including police, fire, medical aid, or emergency access;
- Exceed wastewater treatment requirements of the applicable RWQCB;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Result in insufficient water supplies available to serve the project from existing entitlements and resources, or that would require new or expanded entitlements;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that there is inadequate capacity to supply the project's projected demand in addition to the provider's existing commitments;
- Result in the determination that insufficient permitted capacity exists to accommodate the project's landfill and solid waste disposal needs;

- Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Conflict with federal, state, and local statutes and regulations related to solid waste.

3.11.3 Environmental Evaluation

General Plan Analysis

The purpose of the proposed Heber Dunes SVRA General Plan is to provide for more effectively managed, responsible OHV recreation and improved related day use recreational opportunities. Adequate emergency response services and utilities to Heber Dunes SVRA are a significant element, given that the proposed General Plan would permit facility development and additional recreational opportunities.

Emergency Services

The proposed General Plan specifically includes policies requiring that coordination with state and local districts and agencies occur, and future development planning consider the adequate provision of emergency services. These policies are as follows:

- **PO Guideline 3.7:** Work with state agencies and local communities, districts, and agencies to achieve a unified delivery of services in response to public safety emergencies.
- **PO Guideline 3.8:** When planning new facility development or property acquisitions, address the needs for maintenance and public safety personnel, equipment, communications, and emergency vehicle access.

As guided by the proposed General Plan, future development of Heber Dunes SVRA would continue to be focused on community- and family-oriented OHV and OHV-compatible recreation opportunities. The family-focused nature of Heber Dunes SVRA and novice use conditions minimize potential emergency situations relative to other OHV recreation areas that may experience more rowdy visitor groups or dangerous use situations. Existing security within Heber Dunes SVRA is expected to be sufficient to meet any increased demand associated with implementation of the proposed General Plan. Security at Heber Dunes SVRA would continue to be administered by the park ranger. The ranger would continue to be the first to respond to security emergencies. Backup services through radio communication would continue between the park ranger, SURCOM, and the Imperial County Sheriff's office to ensure mobilization of adequate responders in the case of a large-scale emergency at Heber Dunes SVRA.

Fire protection would continue to be provided by ICFD within Heber Dunes SVRA. The fire department currently has one new frontline fire engine and one reserve engine. Vehicle fires can occur and unauthorized campfires are occasionally started on-site, typically within the stands of tamarisk trees.

Any new facilities constructed as part of the proposed General Plan would be required to meet all fire code regulations. Implementation of the proposed General Plan would not cause the need for additional fire equipment or staff. There would not be an increase in the response time of the ICFD to Heber Dunes SVRA. As with security services, radio communication between the park ranger, SURCOM, and ICFD would continue. ICFD would also continue to respond to all 911 medical emergencies with an ambulance service provided by Goldcross Ambulance. Emergency personnel and equipment would continue to have direct access to Heber Dunes SVRA via Heber Road.

For these reason, implementation of the proposed General Plan would create a *less-than-significant* impact to emergency services or physical impacts associated with new or altered facilities.

Utilities

The proposed General Plan includes policies aimed at incorporating sustainable practices into future development and operations. The use of sustainable initiatives could reduce demand for utilities such as water, electricity, or solid waste disposal. An example of these policies is the following:

- **VUR Guideline 3.1** Promote opportunities to incorporate sustainability into Heber Dunes SVRA development, operations, and maintenance. Sustainability initiatives could include incorporating alternative energy and promoting energy efficiency, using reclaimed water, applying Leadership in Energy and Environmental Design (LEED) standards to new construction, and other sustainability initiatives.

The application of LEED standards would help ensure that facilities would be designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, carbon dioxide emissions reductions, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Potable water demand for Heber Dunes SVRA would continue to be required for the shower/restroom facilities, staff residence, camp host site, and maintenance area. Water would be continued to be purchased from IID and distributed from the South Alamo Canal. OHMVR Division would continue to maintain the water treatment plant cistern and store the water on-site. Expanded or new on-site water distribution would be installed as

necessary. The current water capacity is adequate to accommodate these existing uses, and it can be anticipated that future improvements under the proposed General Plan (i.e., shade structures, trail development, maintenance facilities) would likely require minimal water use beyond current demand. Use of public facilities such as the shower/restroom would likely increase with higher visitor use and the resulting demand for water would subsequently increase. Heber Dunes SVRA would continue to focus on OHV use and social gathering, with minimal facilities requiring water use. Any substantial future development that would create a demand for water requiring additional water treatment or storage capacity would undergo project-specific environmental review. Wastewater would continue to be treated with on-site septic systems that are adequate for the volume of wastewater generated. For these reasons, implementation of the proposed General Plan would result in ***less-than-significant*** impacts to water sources, exceedance of wastewater treatment requirements, water treatment facilities, or storm water drainage facilities.

Similar to water demand at Heber Dunes SVRA, there is limited electrical need on-site. Facility development and improvement under the proposed General Plan would likely increase electrical demand slightly, though many improvements would likely not require power (i.e., shade structures, trails, picnic facilities). Expanded or new on-site electrical distribution would be installed as necessary. Electrical services would continue to be provided by IID, and any minor increase in electrical demand generated by implementation of the proposed General Plan would not impact overall regional supply, facilities, or distribution. The potential use of photovoltaic solar panels to generate electricity within Heber Dunes SVRA would help to meet the on-site demand for electricity for the restroom/shower facilities, staff housing, and maintenance area.

Propane gas would continue to be provided via the existing 200-gallon tank currently on-site for water heating and cooking at the permanent residence site, and additional tanks would be added as necessary for future development, though demand is likely to be minimal. The individual propane tanks would be refilled as needed.

Telephone service would continue to be provided by AT&T or other contractor and expanded to additional facilities if required.

Solid waste disposal would continue to be provided by Allied Waste Management. With increased visitation at Heber Dunes SVRA, solid waste generation would also increase. If future demand warrants the need for additional waste receptacles, Allied Waste Management would provide the service and maintenance. This increase in solid waste generation would be minimal on a regional scale and would not affect landfill capacity and a ***less-than significant impact*** regarding solid waste disposal would result.

The facility improvements and enhanced recreational opportunities that would result with implementation of the proposed General Plan would generate increases in demand for utilities due to new facilities and increased visitation. However, as described in the analysis above, the increase in demand is anticipated to be relatively small and would not result in the need for new or expanded regional or local infrastructure or supplies. Implementation of the proposed General Plan would result in a ***less-than-significant*** impact to the provision of utilities.

Near-Term Facility Improvements Analysis

Multiple improvements are proposed in the near term, as discussed in Section 2.6. The near-term improvements of Heber Dunes SVRA facilities are located within the existing Heber Dunes SVRA boundary and would follow the goals and policies as outlined under the General Plan analysis.

Most of the near-term facility improvements are related to administration, staffing, and maintenance facilities at Heber Dunes SVRA, and would not increase the need for emergency services. The addition of passive recreation facilities, such as the new picnic structures, would also not substantially increase the need for the provision of emergency services. The training track, as proposed under the near-term facility improvements, would facilitate additional OHV recreation opportunities at Heber Dunes SVRA, which inherently has a level of user risk. However, the training track would be designed and constructed with user education and responsible OHV use as a primary objective. In addition, the training track would cater to novice users and would not facilitate high-speed or high-risk challenges. For these reasons, the demand for emergency services would not be substantially increased with implementation of the near-term facility improvements. A ***less-than-significant*** impact related to the provision of emergency services or physical impacts associated with new or altered facilities would result.

Some of the near-term facility improvements would replace or expand existing uses that currently generate the need for utilities, such as the new residence area, camp host sites, and pump house improvements. The maintenance facility and ranger/staff station building would create a new need for utility services. However, sustainable features such as a supplemental photovoltaic solar electric system on the roof and energy-efficient heating and cooling systems would be used and would reduce energy demand. Landscaping proposed with various components would require some water for irrigation, though plantings would be drought tolerant to reduce water demand. Infrastructure, such as water pipelines, overhead electrical transmission lines, and propane tanks, would be installed as necessary on-site to service the new facilities as required. No off-site utility improvements would be required. The demand for utilities would increase slightly, as some of the near-term facility improvements would create new demand for utility service. The near-term

facility improvements would also enhance the attractiveness of Heber Dunes SVRA as an OHV recreation and local social gathering area, and likely increase visitation, thus generating additional utility service demand. However, as with the proposed General Plan, the near-term facility improvements would not create a high demand for utilities and would not substantially affect local or regional service providers or require new infrastructure. For these reasons, near-term facility improvement impacts to public services and utilities would be *less-than-significant*

3.11.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to public services and utilities. Implementation of the near-term facility improvements would not result in significant impacts to public services and utilities.

3.11.5 Mitigation Measures

No significant impacts to public services and utilities would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to public services and utilities would result from the near-term facility improvements and no mitigation is required.

3.12 Recreation

This section describes the recreation opportunities at Heber Dunes SVRA and the surrounding region. For the purpose of analyzing environmental impacts from the proposed action to recreation, recreation opportunities on or adjacent to Heber Dunes SVRA are addressed in this section and are described below.

3.12.1 Existing Setting

Regional Recreation Opportunities

Imperial County has a varied terrain, including rugged mountains, sand dunes, dry lake beds, badlands, mud hills, desert washes, broad alluvial fans, rocky peaks, volcanic areas, natural springs, water bodies, and broad areas of desert pavement, which provide a variety of recreational opportunities, such as hiking, camping, boating, and OHV use.

Recreational OHV activity is popular in Imperial County due to the wide variety of opportunities and challenges for OHV users, from high-speed runs to very slow and technically difficult steep climbs through rocky and rough terrain. Heber Dunes SVRA is one of many recreational areas in Imperial County. Other designated OHV recreation areas are located within Imperial County. Imperial Sand Dunes is managed by BLM and is located approximately 30 miles northeast of Heber Dunes SVRA. The Imperial Sand Dunes recreation area covers approximately 159,000 acres, of which approximately 83,000 acres are currently available for OHV use. Recreational opportunities include OHV use, hiking, horseback riding, wildlife/scenery viewing, picnicking, nature study, environmental education, and camping. The three most popular areas are Mammoth Wash at the north end of the dunes, Glamis/Gecko located south of SR-78, and Buttercup Valley located south of I-8 near the Mexican border. Imperial Sand Dunes is characterized by very high sand dunes (some dunes are more than 300 feet tall), which provide a challenging OHV recreation experience. Many visitors to Imperial Sand Dunes travel from outside of Imperial County. Ocotillo Wells SVRA is also managed by the OHMVR Division. Ocotillo Wells SVRA is located approximately 65 miles northwest of Heber Dunes. Ocotillo Wells SVRA covers approximately 86,400 acres and recreational opportunities include OHV use, camping, environmental education, wildlife/scenery viewing, geocaching, and picnicking. Popular areas within Ocotillo Wells SVRA include Blow Sand Hill, Devil's Slide, Shell Reef, and the Pumpkin Patch. Plaster City OHV Open Area is located approximately 28 miles northwest of Heber Dunes SVRA and provides 41,000 acres for OHV use. Superstition Mountain OHV Open Area is a 13,000-acre area located 35 miles northwest of Heber Dunes SVRA. OHV use in nondesignated areas occurs throughout Imperial County.

Anza-Borrego Desert State Park also provides regional recreation opportunities. The park is located on the eastern side of San Diego County, with portions extending east into

Imperial County and north into Riverside County. At 600,000 acres, Anza-Borrego Desert State Park is the largest of the state parks within California. Recreational opportunities include hiking, camping, wildlife/scenery viewing, picnicking, bicycling, horseback riding, and interpretive activities and tours. Non-street-legal OHV use is not allowed within Anza-Borrego Desert State Park. However, vehicles with valid on-highway licenses (e.g., four-wheel drive Jeeps, trucks, sport utility vehicles, and motorcycles) can operate within the park on designated paved and unpaved roads.

Several additional parks and recreation facilities are located within Imperial County. Currently, there are about 250 acres of public parkland within unincorporated areas of Imperial County (excluding state and federal parks and Imperial County parks that have been closed) (Imperial County 2008b). This figure is reduced to 160 acres if water bodies and undeveloped areas are excluded. These recreation facilities range from small neighborhood parks to regional recreation facilities. Recreational opportunities provided by these parks include passive and active recreation opportunities such as barbeque facilities, picnic areas, sports fields, and fishing and boating. OHV use opportunities are not provided by any of these parks. County parks located in the vicinity of Heber Dunes SVRA are two neighborhood parks in the community of Heber, which provide playgrounds and landscaped areas; one community park in Heber, which provides a baseball field; and one regional park (Pioneer's County Park) in El Centro, which primarily serves as a campus for Pioneers Museum and Cultural Center.

In addition to existing regional recreation facilities, the nearby cities of Calexico, El Centro, and Holtville have various parks. Specifically, Calexico has 12 parks, El Centro has 28 parks, and Holtville has three parks. Most of these parks provide shaded areas, playgrounds, and sports fields. In addition to public parkland, some private recreation facilities (such as RV parks) exist within Imperial County, but they do not provide OHV use opportunities.

Recreation at Heber Dunes SVRA

For more than 30 years, Heber Dunes County Park was operated by Imperial County. OHMVR Division entered into negotiations with Imperial County and took over operations of Heber Dunes County Park in 1998, by lease agreement. The Heber Dunes site was officially deeded to OHMVR Division in 2007.

While substantial recreation facilities exist in Imperial County, Heber Dunes SVRA offers a unique recreational experience in a more intimate setting. Gentle terrain featuring low sand dunes and meandering trails offers opportunities for family-friendly recreation within proximity to population centers. Because Heber Dunes SVRA is relatively small, open for day use only, and has gentle terrain, most users are from the local area.

As indicated in visitor surveys administered in 2009 (EDAW AECOM 2009b), the majority of visitors (90%) to Heber Dunes SVRA are local residents who travel less than 30 minutes to get there (from nearby communities of Calexico, El Centro, Holtville, Imperial, and Heber). Because most visitors are from the local community, Heber Dunes SVRA has become a popular gathering and picnicking area for families and friends. The visitor survey also revealed that approximately 32% of visitors were children under the age of 15, signifying the popularity of Heber Dunes SVRA for families with children.

There are currently a limited number of developed facilities to support recreation opportunities within Heber Dunes SVRA, and the majority of Heber Dunes SVRA is dedicated to open sand dune and trail use. Existing recreation-supporting facilities are described below.

Ranger/Staff Facilities – The Heber Dunes SVRA ranger/staff area is where the main concentration of infrastructure is located. Staff members live on-site year-round at Heber Dunes SVRA. This area includes an RV residence, a ranger/staff office and workshop/tool area, a parking area for Heber Dunes SVRA vehicles, and an old restroom facility that is currently used for storage.

Restroom Facilities – A public restroom is located at the northern part of the park near the ranger/staff facilities. It consists of flush toilets, sinks, and showers.

Picnic Facilities – There are 13 picnic table areas, including one that is accessible for people with disabilities according to the Americans with Disabilities Act (ADA). Seven of the 13 picnic areas are clustered near the restroom facility. The remaining six are scattered south of Heber Dunes Road. Each picnic table area includes a shade-cover structure, picnic table and benches, fire pit, and trash can. Fires are permitted only in designated fire pits.

Camp Host Facilities – This is an unimproved site on the east side of the main access road where a seasonal camp host locates an RV during several months of the year. Volunteer camp hosts are present at the entrance of Heber Dunes SVRA during the busy months, typically from November through March of each year. Heber Dunes SVRA volunteers assist the park staff in cleanup and maintenance of Heber Dunes SVRA and facilities. Dumpsters are located in the immediate vicinity.

Signage – Some signage and wayfinding exists throughout Heber Dunes SVRA. At the main entrance area, a single-panel entry kiosk provides a “Guide to California Off-Road Adventures” poster. Along the entry road and perimeter road are various signs relating the rules of Heber Dunes SVRA as well as Vehicle Code provisions related to OHV recreation. Other signs post Heber Dunes SVRA hours, rules stating no fireworks and no camping and the Heber Dunes SVRA boundaries.

General Plan

The proposed Heber Dunes SVRA General Plan would serve as a guide for future development and enhancements. It would establish a long-term vision for Heber Dunes SVRA; identify potential recreation and facility improvements; and direct future Heber Dunes SVRA management, resource stewardship, and public use. The proposed General Plan would guide the recreational development of Heber Dunes SVRA to provide effectively managed, responsible OHV and related recreational opportunities, with recognition of the significance of Heber Dunes SVRA to the local population. The relatively small size and gentle dunes provide unique recreation opportunities for OHV use, family and social gathering, and interpretive programs.

Regulatory Setting

The California Parklands Act of 1980

Although a recreation element is not mandated by law to be included in a General Plan, recreation resources are to be considered in the Open Space Element of a General Plan (Government Code Section 65560). The California Parklands Act of 1980 (PRC Section 5096.141–5096.143) identifies the need for “the state to acquire, develop, and restore areas for recreation...and to aid local governments of the state in acquiring, developing, and restoring such areas.” The California Parklands Act also identifies the necessity of local agencies to exercise vigilance to see that the parks, recreation areas, and recreational facilities they now have are not lost to other uses.

California State Parks

The Heber Dunes SVRA project site is classified as an SVRA. Policies pertaining to an SVRA are outlined in California PRC 5090.43:

(a) State vehicular recreation areas shall be established on lands where there are quality recreational opportunities for off-highway motor vehicles and in accordance with the requirements of Section 5090.35. Areas shall be developed, managed, and operated for the purpose of making the fullest public use of the outdoor recreational opportunities present. The natural and cultural elements of the environment may be managed or modified to enhance the recreational experience consistent with the requirements of Section 5090.35.

(b) Lands for state vehicular recreation areas shall be selected for acquisition so as to minimize the need for establishing sensitive areas.

(c) After January 1, 1988, no new cultural or natural preserves or state wildernesses shall be established within state vehicular recreation areas. To protect natural and

cultural values, sensitive areas within state vehicular recreation areas may be designated by the [OHMVR] Division if the Off-Highway Motor Vehicle Recreation Commission holds a public hearing and makes a recommendation therefore. These sensitive areas shall be managed by the [OHMVR] Division in accordance with Sections 5019.71 and 5019.74, which define the purpose and management of natural and cultural preserves.

If off-highway motor vehicle use results in damage to any natural or cultural values, appropriate measures shall be taken to protect these lands from any further damage. These measures may include the erection of physical barriers and shall include the restoration of natural resources and the repair of damage to cultural resources.

CSP prepares General Plans for their park facilities. A park general plan directs the long-range development and management of a park by providing broad policy and program guidance. A California State Park must have an approved general plan before any major park facilities can be developed.

Off-Highway Motor Vehicle Recreation Act

The Off-Highway Motor Vehicle Recreation Act requires OHMVR Division to implement and administer the Off-Highway Motor Vehicle Recreation Program, which provides and supports sustainable, ecologically based opportunities for OHV recreation at specified areas throughout the state (PRC Section 5090 et seq.). The act states that effectively managed areas and adequate facilities for the use of OHVs and conservation and enforcement are essential for ecologically balanced recreation.

3.12.2 Thresholds of Significance

The Heber Dunes SVRA General Plan project would have significant environmental impacts related to recreational resources if it would exceed the following CEQA thresholds established in CEQA Appendix G:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

3.12.3 Environmental Evaluation

General Plan Analysis

The purpose of the proposed General Plan is to provide effectively managed, responsible OHV and related recreational opportunities, with recognition of the importance of Heber Dunes SVRA to the local population. While state and federal parkland with OHV recreation opportunities exist throughout Imperial County, these parks do not provide the novice use opportunities or proximity to local urban centers that make Heber Dunes SVRA unique. Heber Dunes SVRA's relatively small size and unique outdoor recreational setting provide opportunities for OHV use and family and social gathering during the day for the local population, as many users do not travel long distances to access the low-skill-level OHV recreation areas and facilities at Heber Dunes SVRA.

The guidelines and goals contained within the proposed General Plan establish the purpose of Heber Dunes SVRA and provide the framework for future development and management of recreational opportunities. There are numerous proposed General Plan goals that relate to recreational land use. As detailed in Section 2.5.4.1, the Visitor Use and Recreation (VUR) goals include themes such as providing a recreation experience for OHV users of diverse ages and experience levels and other visitors in a family-friendly environment. The guidelines focus on enhancing recreational opportunities and experiences compatible with OHV use for individuals, families, and community-centered groups. Within the Park Use and Operations (PO) goals, the recreation goals entail not only the enhancement of the quality of OHV recreational opportunities, but also the addition of visitor services and products. Other themes within PO goals include enhancing the resource management of Heber Dunes SVRA and providing essential visitor and management facilities to enhance the visitor experience and Heber Dunes SVRA operations.

Implementation of the proposed General Plan would not substantially change the current recreational uses that occur at Heber Dunes SVRA, but would, rather, enhance and add to the existing opportunities for recreation. During the public comment period, dissatisfaction was voiced regarding limiting or restricting OHV use within Heber Dunes. Comments also noted the need for additional shaded gathering places and passive use areas for activities such as picnics. The proposed General Plan outlines policies and designates appropriate use areas to accommodate and enhance both OHV recreation throughout the park as well as the provision of other recreation opportunities. Under the proposed General Plan, future expansion of facilities at Heber Dunes SVRA would provide a greater range of recreation, gathering, and resource management opportunities. The overall improvements of Heber Dunes SVRA would bring some new users to the park and may attract more distant users; however, the recreation goals and policies within the proposed General Plan would likely not alter the recreational opportunities offered at Heber Dunes SVRA in a manner that

would substantially increase the number of users traveling to the park from distant locations. Because of the relatively small size, intimate setting, and family-friendly atmosphere, and novice OHV use challenges of Heber Dunes SVRA, enhanced and expanded recreational opportunities would likely be taken advantage of by the local population. A variety of parks in the area offer OHV opportunities on a much larger scale with more varied and challenging terrain and currently provide camping facilities to accommodate users who travel from other areas and plan to spend multiple days.

The proposed General Plan would help guide the development of recreation facilities to appropriately accommodate the projected population growth in the local area and the continued popularity of OHV use. These two factors are expected to contribute to the anticipated increase in future visitation at Heber Dunes SVRA. In addition, implementation of the proposed General Plan would provide a framework for long-term maintenance of Heber Dunes SVRA facilities, including both physical structures and the natural features of the site, such that Heber Dunes SVRA would continue to successfully provide recreational opportunities into the future. Because implementation of the proposed General Plan would not create a substantial draw of nonlocal users who might also use other local recreational facilities, and Heber Dunes SVRA would receive better maintenance and oversight, the proposed General Plan would not increase the use of other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; therefore, a ***less-than-significant*** impact to recreational resources would result.

Implementation of the proposed General Plan would likely necessitate the construction of new recreation-based facilities within Heber Dunes SVRA to achieve the goals set forth within the plan. The specific environmental impacts of new park facilities would depend on the type and location of such facilities, which are not fully known at this time. Future actions could result in potential environmental impacts, such as increased noise and air pollution, degradation of biological habitat, and impacts to other sensitive resources. Potential environmental impacts are discussed and evaluated within the individual topic sections of this ~~DEIR~~FEIR; however, it is anticipated that implementation of the proposed General Plan's policies and programs and any required mitigation measures would adequately address any potential secondary environmental impacts, as detailed in each topic discussion. Once future projects are planned, OHMVR Division would determine if the actions are within the scope of this ~~DEIR~~FEIR or if additional project-level environmental analysis and mitigation would be required. For these reasons, the potential adverse physical effect on the environment that may result from future construction or expansion of recreational facilities in accordance with the proposed General Plan is considered ***less-than-significant***.

Near-Term Facility Improvements Analysis

In the immediate term, multiple improvements are proposed to provide basic park facilities related to administration, maintenance, and recreation opportunities. Proposed near-term facility improvements include a park staff residence area, maintenance facility and ranger/staff station, fuel station, picnic areas, training track, and associated upgrading of utilities and roadway repaving. The amenities would provide additional facilities with a more diverse range of recreational opportunities for novice users and expanded social gathering to further enhance the experience at the park and create a more user-friendly environment. The addition of a training track for young and novice users to gain additional experience would increase the opportunities and enjoyment of the recreational uses, along with more shaded picnic and gathering areas for passive recreation. New maintenance and administration facilities would allow for park staff to provide better oversight, maintenance, and education, which would add to the recreation value and experience at Heber Dunes SVRA.

For the reasons mentioned above, Heber Dunes SVRA functions as a highly valued park and recreation resource for nearby residents of Imperial County and visitors, and this recreation facility would be enhanced with the proposed near-term improvements. These improvements would aid in appropriately facilitating increased visitation and use of Heber Dunes SVRA. The near-term improvements of Heber Dunes SVRA facilities may bring some new users to the park and may attract some more distant users; however, the increased park attendance would not considerably increase the use of other existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, the impact would be ***less-than-significant***.

The near-term facility improvements are specifically considered in each of the environmental issues analyses presented in this **DEIR/FEIR**. The improvements are generally located in areas of previous disturbance and, as described in each issues analysis, many of the goals and policies of the proposed General Plan would reduce and minimize the potential for environmental impacts to occur. Based on the analysis presented in this **DEIR/FEIR**, implementation of the near-term facility improvements would not result in substantial environmental impacts that cannot be reduced; thus, adverse physical effects to the environment due to the construction or expansion of recreational facilities would ***less-than-significant***.

3.12.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts to recreational resources. Implementation of the near-term facility improvements would not result in significant impacts to recreational resources.

3.12.5 Mitigation Measures

No significant impacts to recreational resources would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts to recreational resources would result from the near-term facility improvements and no mitigation is required.

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3.13 Hazardous Materials

This section presents information on safety and hazardous materials conditions within the project vicinity and identifies potential impacts resulting from the construction and operation of the proposed General Plan and near-term facility improvements. A Phase I Environmental Site Assessment (ESA) was prepared to determine potential existing hazardous conditions that may exist on or near Heber Dunes SVRA (Wright Environmental Services 2009b) and provides information used in this analysis. The Phase I ESA is attached as Appendix H.

3.13.1 Existing Setting

Hazardous materials can be defined as an item, substance, or chemical that is a health hazard or physical hazard and/or can cause harm to people, plants, or animals when released into the environment. Hazardous materials may be released into the environment through spilling, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposal. The use of hazardous materials is common in many commercial, industrial, and manufacturing activities, and for general household use. Hazardous materials require special methods of disposal, storage, and treatment.

There are common hazardous materials used within Heber Dunes SVRA. Gasoline and oil products are used for vehicle and OHV operations, both by on-site staff and the public. The ranger occasionally collects small quantities of used oil left by park users and that oil is properly disposed of off-site. Additional hazardous chemicals are stored on-site and used by staff for maintenance operations such as paints, solvents, lubricants, coolant, and other common materials. The existing ranger/staff area has a small shop with two flammable lockers: one to store containers of fuel for park mowers and power tools, and the other to store paints, oil, and the small quantities of waste oil collected.

The ESA found that the Heber Dunes SVRA property was not listed on any federal, state, local, or tribal database included in the records search. An illegal hazardous materials dumping of paint, paint thinner, and other paint-related chemicals was reported near the southeast corner of the site in November 1997. The dump site was cleaned up and the case file is closed. The database search revealed no hazardous material sites within 1 mile of Heber Dunes SVRA. The ESA found no visual evidence of hazardous material contamination, indications of improper hazardous material storage or disposal, stains, or significant concerns on the property. The ESA found no recognized environmental conditions related to hazardous materials in connection with Heber Dunes SVRA.

Regulatory Setting

Federal

Comprehensive Environmental Response, Compensation, and Liability Act

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1980 in response to the contamination found at an abandoned factory site at Love Canal, New York (42 USC 9601 et seq.). CERCLA established requirements for remediation of closed, abandoned hazardous waste sites; provided liability for persons responsible for release of hazardous substances at these sites; and provided that the federal government is the lead agent for the cleanup of hazardous substances, pollutants, or contaminants identified at its sites. CERCLA was amended in 1986 to clarify federal responsibilities for remediating contamination found at its sites.

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) included provisions appropriating funds to federal agencies for the remediation of contamination on federal sites (10 USC 2701 et seq.). SARA pertains primarily to emergency management of accidental releases. It requires formation of state and local emergency planning committees, which are responsible for collecting material handling and transportation data for use as a basis for planning. Chemical inventory data are made available to the community at large under the “right-to-know” provision of the law. In addition, SARA also requires annual reporting of continuous emissions and accidental releases of specified compounds. These annual submissions are compiled into a nationwide Toxics Release Inventory.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) Subtitle C addresses hazardous waste generation, handling, transportation, storage, treatment, and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. The 1984 amendments to RCRA created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and containment systems for underground storage tanks that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

State

California Hazardous Waste Control Law

The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in California. The HWCL implements RCRA as a “cradle-to-grave” waste management system in California. The HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. The HWCL exceeds federal requirements by mandating source-reduction planning and containing a much broader requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of waste and waste management activities that are not covered by federal law with RCRA.

California Code of Regulations

Most state and federal regulations and requirements that apply to generators of hazardous waste are spelled out in CCR, Title 22, Division 4.5. Title 22 contains the detailed compliance requirements for hazardous waste generators; transporters; and treatment, storage, and disposal facilities. Because California is a fully authorized state according to RCRA, most RCRA regulations (those contained in 40 Code of Federal Regulations [CFR] 260 et seq.) have been duplicated and integrated into Title 22. However, because the Department of Toxic Substance Control (DTSC) regulates hazardous waste more stringently than the federal EPA, the integration of California and federal hazardous waste regulations that make up Title 22 do not contain as many exemptions or exclusions as does 40 CFR 260. As with the California Health and Safety Code, Title 22 also regulates a wider range of waste types and waste management activities than the RCRA regulations in 40 CFR 260. To aid the regulated community, California compiled the hazardous materials, waste, and toxics-related regulations contained in CCR, Titles 3, 8, 13, 17, 19, 22, 23, 24, and 27 into one consolidated CCR, Title 26 “Toxics.” However, the California hazardous waste regulations are still commonly referred to as Title 22.

3.13.2 Thresholds of Significance

The proposed General Plan project and the near-term facilities would have significant environmental impacts related to hazardous materials if they would do the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; or
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

3.13.3 Environmental Evaluation

General Plan Analysis

Hazardous materials typically used in construction operations, such as diesel fuel, solvents, and paints, among others, would likely be used during construction activities associated with implementation of the proposed General Plan. Hazardous materials used during construction activities would be handled, stored, and used in accordance with all federal, state, and local regulations.

Similar to current use, hazardous materials such as gasoline and oil would also be used and stored on-site during operation of Heber Dunes SVRA under the proposed General Plan. The enhancement and expansion of facilities and recreational opportunities at Heber Dunes SVRA is anticipated to attract additional visitors to the park and would increase the use of gasoline and oils for OHV operation. The increased use of these common materials for OHV operation would not create a substantial hazard to the public or environment, as individuals handle relatively small volumes of gasoline and oil, and staff members provide oversight and collection of any substances left behind. The use, storage, containment, and handling of hazardous materials would be in accordance with all federal, state, and local regulations, minimizing the potential for accidental release. For these reasons, implementation of the proposed General Plan would result in a ***less-than-significant*** impact regarding hazardous materials and their handling, transport, disposal, or accidental release into the environment.

No schools are within one-quarter mile of Heber Dunes SVRA and thus ***no impact*** would result regarding the emissions of hazardous materials near a school.

The Heber Dunes SVRA is not listed as a hazardous materials site and ***no impact*** would result regarding a hazard to the public or environment from a listed hazardous materials site.

Near-Term Facility Improvements Analysis

Similar to the discussion of construction activities under the proposed General Plan analysis above, common hazardous materials would be used during construction activities associated with the near-term facility improvements. Hazardous materials used during construction activities would be handled, stored, and used in accordance with all federal, state, and local regulations. Adherence to the required regulations would minimize exposure and reduce the potential for accidental release into the environment.

The near-term facility improvements include the installation of a self-contained fuel station located within the proposed outdoor maintenance yard. The fuel station would consist of one aboveground fuel tank with pumps, all of which would be installed on a concrete slab with curbing to provide full containment in case of an accidental spill. The aboveground tank would hold and dispense both gasoline and diesel for OHMVR Division vehicle use. Design, construction, and operation of the fuel station would be in compliance with all applicable regulatory requirements regarding the handling, storage, containment, and use of hazardous materials, thus minimizing any potential accidental release or exposure from this new facility. The construction of a new maintenance facility and yard would provide improved conditions to safely store hazardous materials used by staff for maintenance and operations at Heber Dunes SVRA. All use, storage, and handling of hazardous materials would continue to adhere to regulatory requirements. For these reasons, the near-term facility improvements would result in a ***less-than-significant*** impact related to hazardous materials and their handling, transport, disposal, or accidental release into the environment.

No schools are within one-quarter mile of Heber Dunes SVRA and thus ***no impact*** would result regarding the emissions of hazardous materials near a school.

The Heber Dunes SVRA is not listed as a hazardous materials site and ***no impact*** would result regarding a hazard to the public or environment from a listed hazardous materials site.

3.13.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan would not result in significant impacts related to hazardous materials. Implementation of the near-term facility improvements would not result in significant impacts related to hazardous materials.

3.13.5 Mitigation Measures

No significant impacts related to hazardous materials would result with implementation of the proposed General Plan and no mitigation is required. No significant impacts related to

hazardous materials would result from the near-term facility improvements and no mitigation is required.

3.14 Climate Change

3.14.1 Existing Setting

Emissions of greenhouse gases (GHGs) have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. GHGs persist in the atmosphere long enough to be dispersed around the globe and therefore climate change, as well any impact resulting from climate change, is borne globally. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, a single project would be unlikely to measurably contribute to a noticeable incremental change in the global average temperature. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative and projects should be evaluated through cumulative impacts because GHG emissions from multiple projects could result in a cumulative impact with respect to global climate change.

Attributing Climate Change – Physical Scientific Basis

Certain gases in Earth's atmosphere, classified as GHGs, play a critical role in determining Earth's surface temperature. Upon entering Earth's atmosphere, most solar radiation passes through the atmosphere. Some of the radiation is absorbed by Earth's surface, but a smaller portion is reflected back toward space and is termed infrared radiation. GHGs absorb infrared radiation and as a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This is known as the greenhouse effect, and is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of Earth's climate, known as global climate change or global warming. Climate change refers to persistent, recorded changes in the average weather of Earth, measured by variables such as wind patterns, storms, precipitation, and temperatures that evolve over a long period of time (e.g., decades or centuries). Scientific research on climate change indicates with very high confidence (i.e., at least 90%) that the current rate and magnitude of global temperature increases are primarily anthropogenic (i.e., human-caused) and will lead to adverse effects around the globe (IPCC 2007). It is unlikely that global climate change of the past 50 years can be explained without contribution from human activities (IPCC 2007).

Attributing Climate Change—Greenhouse Gas Emission Sources

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors (ARB 2010c). Emissions of CO₂ are byproducts of fossil fuel combustion. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2010c). CH₄ results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management. Two of the most common CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution, respectively.

State Greenhouse Gas Emissions Inventory

California, if it were considered its own nation, would be among the top 20 largest emitters of GHGs in the world (CEC 2006). California produced 478 million gross metric tons of CO₂ equivalent (CO₂e) in 2008 (ARB 2010c). CO₂e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. Expressing emissions in CO₂e takes the contributions to the greenhouse effect of all GHG emissions and converts them to the equivalent effect that would occur if only CO₂ were being emitted. This measurement, known as the global warming potential of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in the General Reporting Protocol of the California Climate Action Registry (CCAR 2009), 1 ton of CH₄ has the same contribution to the greenhouse effect as approximately 23 tons of CO₂. Therefore, CH₄ is a much more potent GHG than CO₂ on a per-molecule basis.

Combustion of fossil fuel in the transportation sector, which includes aircraft operations, was the single largest source of California's GHG emissions in 2008, accounting for 37% of total GHG emissions in the state (ARB 2010c). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (24%) and the industrial sector (19%).

Regulatory Setting

Numerous federal, state, regional, and local laws, rules, regulations, plans, and policies define the framework that regulates or will potentially regulate climate change. The following discussion focuses on climate change requirements applicable to the proposed project.

Federal

Supreme Court Ruling

EPA is the federal agency responsible for implementing the federal CAA. The U.S. Supreme Court ruled on April 2, 2007, that CO₂ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. However, there are no federal regulations or policies regarding GHG emissions applicable to the proposed General Plan.

Mandatory Greenhouse Gas Reporting Rule

On October 30, 2009, EPA published the final version of the Mandatory Greenhouse Gas Reporting Rule in the Federal Register. Mandatory GHG monitoring began on January 1, 2010, for large GHG emissions facilities and sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO₂ per year from 31 emissions sources. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule. Subsequent rulings have expanded the emissions sources required to report emissions data, and now include oil and natural gas industries, industrial wastewater treatment, and industrial landfills.

Endangerment Finding for Greenhouse Gases under the Clean Air Act

On December 7, 2009, EPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Endangerment Finding states that six key GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten the public health and welfare of current and future generations, and that emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. The findings allowed EPA to finalize the GHG standards proposed earlier in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.

State

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA, which was adopted in 1988.

Executive Order S-3-05

Executive Order S-3-05, signed in 2005, established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

Further, the Secretary of Cal/EPA is directed to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and state legislature describing progress made toward reaching the emission targets, impacts of global warming on California's resources, and mitigation and adaptation plans to combat these impacts.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, was signed in September, 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012.

AB 32 Climate Change Scoping Plan

In December 2008, ARB adopted its *Climate Change Scoping Plan*, which contains the main strategies that California will implement to achieve a reduction of approximately 169 million metric tons (MMT) of CO₂e, or approximately 30% from the state's projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 42 MMT CO₂e, or almost 10%, from 2002–2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO₂e),
- the Low-Carbon Fuel Standard (15.0 MMT CO₂e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO₂e).

ARB acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined (ARB 2008). With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT CO₂e will be achieved associated with implementation of SB 375, which is discussed further below.

Executive Order S-1-07

Executive Order S-1-07 establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10% by 2020. This order also directed ARB to determine if this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early action measure after meeting the mandates in AB 32. ARB adopted the LCFS on April 23, 2009.

Senate Bill 375

Signed in September 2008, SB 375 aligns regional transportation planning efforts, regional GHG-reduction targets, and land use and housing allocation. It requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which would prescribe land use allocations in that MPO's Regional Transportation Plan (RTP). ARB has established reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. ARB adopted regional targets on September 23, 2010 (ARB 2010). These reduction targets are to be updated every 8 years but can be updated every 4 years if advancements in emission technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG-reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

This bill also extends the minimum time period for the Regional Housing Needs Allocation cycle from 5 years to 8 years for local governments located within an MPO that meet certain requirements. City or County land use policies (including general plans) are not required to be consistent with the RTP (and associated SCS or APS). However, new provisions of CEQA would incentivize qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

California Off-Highway Recreational Vehicle Regulations

There are currently no regulations directly addressing the GHG emissions of off-road vehicles in California. California Off-Highway Recreational Vehicle Regulations control mobile source emissions (including evaporative emissions) by ensuring that all OHVs operating in California meet adopted air pollutant emission standards. In January 1994, ARB adopted emission-control regulations for OHVs, including off-road motorcycles (dirt bikes) and ATVs, manufactured on or after January 1, 1997. These regulations require all OHVs sold in California, model year 1998 and later, to be certified by the On-Road Light-Duty Certification Section of ARB demonstrating that the vehicles meet the adopted emissions standards.

In July 2006, ARB approved evaporative emission standards for OHVs that went into effect in 2008. These standards approved changes to the use seasons for OHVs with red sticker registration based on new air basin data and added three vehicle types subject to OHV regulations: off-road utility vehicles, off-road sport vehicles, and sand cars (i.e., dune buggies, sand rails, etc.). Three state OHV facilities were also changed to year-round use seasons: Oceano Dunes SVRA, Heber Dunes SVRA, and Mammoth Bar OHV Park.

ARB's Enforcement Program is responsible for preventing the illegal sale and use of nonconforming or non-California-certified vehicles, engines, and emissions-related parts in California. Any noncertified vehicle that is imported, delivered, purchased, sold, rented, leased, acquired, or received for use, registration, or resale in California is subject to a maximum fine of \$5,000 under California Health and Safety Code, Sections 43150–43156. Therefore, all vehicles in California would meet ARB's emission standards and would emit lesser GHG per mile traveled due to increased efficiency as compared to uncontrolled vehicles.

California State Parks - Off-Highway Motor Vehicle Recreation Division Green Initiatives

As required by PRC Section 5090.24(h), Duties and Responsibilities of the Commission, the OHMVR Commission (Commission) prepared the *OHMVR Commission Program Report* to inform the Governor and Legislature of progress and developments in the state's OHMVR Program (OHMVR 2010a).

The Commission is committed to supporting sustainable OHV recreation opportunities while at the same time reducing effects on the environment by encouraging environmentally responsible choices. Likewise, OHMVR Division is committed to becoming a leader in environmental responsibility and resource protection within the OHV community. Accordingly, OHMVR Division fulfills its commitments through various means, including actively pursuing opportunities to implement its green program initiatives as outlined in its Strategic Plan. In addition, OHMVR Division is developing, analyzing, and implementing responsible green program management strategies and environmentally sustainable land management solutions. OHMVR Division is dedicated to efforts and actions related to improving technology, reducing use of fossil fuels, increasing energy efficiency, and enhancing the overall environmental sustainability of its operations.

OHMVR Division's efforts and on-the-ground strategies include the purchase of renewable energy and alternative fuels and vehicles, energy-efficiency improvements for new and existing facilities, and the procurement of less energy-intensive and more environmentally responsible goods and services. Moreover, OHMVR Division actively pursues actions to reduce its carbon footprint, GHG emissions, toxic substances, and waste from its

operations. Ongoing research, strategies, and long-term goals include developing green specifications for equipment, facilities, and vehicles.

Global Warming and Greenhouse Gas Emissions

The Commission shares concern over GHG emissions and the recognition of their significant adverse impact to the state's climate and environment, and state and federal policies and regulations have been developed requiring or promoting reductions in GHG emissions. In 2006, California's Global Warming Solutions Act (AB 32) was passed. AB 32 recognizes the significant effects of GHG emissions and the threats to public health, natural resources, and the environment of California resulting from global warming. OHMVR Division and its SVRAs comply with AB 32 and other state, federal, and county policies and regulations concerning GHG emissions.

In keeping with the carbon emission reduction goals of AB 32, OHMVR Division's Strategic Plan outlines the following long-term objective: Using the 2009–2010 fiscal year as a baseline, achieve a 25% reduction in carbon footprint from management of the SVRAs by 2020. OHMVR Division is currently working with SVRA staff to implement strategies and solutions to achieve this goal.

Solar Development

The use of solar systems at some of the SVRAs is one of several strategies the SVRAs are using to reduce their carbon footprint. Some of the SVRAs are successfully meeting a portion of their electrical demand through on-site generation.

Wind Energy

Wind-generated electrical power offers advantages and opportunities for OHMVR Division to reduce the carbon footprint at the SVRAs. In looking at its portfolio of options to reduce its carbon footprint, OHMVR Division is currently analyzing the feasibility of using wind turbines to produce energy to power several of its facilities.

Alternative Fuel Vehicles

The last several years have seen an increase in development and use of alternative fuel OHVs. In addition, highway-legal vehicles designed for off-highway use are now being offered by many manufacturers in flex-fuel and hybrid configurations. Some manufacturers are now offering fully electric motorcycles and four-wheel drive vehicles for off-highway use. These electric vehicles provide important opportunities for the public, OHMVR Division, and the future of OHV recreation. They produce minimal noise, use no fossil fuels directly, and can be operated near urban areas with little sound disturbance to surrounding

residents, and may present opportunities for development of OHV recreation areas in locations near urban centers.

California's Management Memo 06-03, Vehicle Purchase and Lease Policy, was released in 2006 as part of the state's efforts to meet ambient air quality standards and reduce the state fleet's petroleum use and impact to the environment. This policy applies to the purchase and lease of light-duty, alternative fuel, gasoline, hybrid-electric, sport utility, and four-wheel drive vehicles. OHMVR Division and its SVRAs meet and exceed this mandate.

OHMVR Division recently purchased a small fleet of electric dual-sport motorcycles and electric Recreational Utility Vehicles (RUVs). These vehicles provide fuel-efficient and durable transportation for SVRA staff.

The purchase of these electric vehicles is an early step in the right direction and is in line with OHMVR Division's education efforts and long-term strategy to meet the Governor's mandates, fulfill its Strategic Plan goals, and reduce its own-as well as California's-carbon footprint. OHMVR Division, its SVRAs, and its staff are in a position to promote zero emission OHVs to the public and educate the public on reducing their own carbon footprint through such mechanisms as purchasing electric vehicles.

Recycling and Waste Reduction Programs

Since the early 2000s, OHMVR Division and its SVRAs have increased solid waste recycling and decreased the tonnage going to landfills. The overall recycling rate has increased from below 20% in 2000 to over 50% in each of the past several years. Staff specialists are researching and looking to further improve recycling and waste disposal opportunities. Opportunities include collecting and evaluating data related to waste and consumption to raise the awareness of staff and visitors. In addition, several of the SVRAs have instituted unique recycling programs.

Regional Guidelines

Imperial County Air Pollution Control District

Imperial APCD has not adopted any regulations or guidelines related to GHG emissions applicable to the current project.

3.14.2 Thresholds of Significance

ARB and APCD have not identified a significance threshold for analyzing GHG emissions associated with development projects such as the proposed General Plan, or a methodology for analyzing impacts related to GHG emissions or global climate change. By the adoption of AB 32 the state has identified GHG emission reduction goals and that the effect of GHG

emissions as they relate to global climate change. While the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change.

To meet AB 32 goals, California would need to generate less GHG emissions than current levels. It is recognized, however, that for most projects, no simple metric is available to determine if a single project would substantially increase or decrease overall GHG emission levels.

The state has established GHG emission-reduction targets and has determined that GHG emissions as they relate to global climate change are a source of adverse environmental impacts in California that should be addressed under CEQA. While APCD has not adopted any thresholds at this time, GHG gas emissions must be addressed in CEQA documents according to Appendix G of the State CEQA Guidelines.

Adoption and implementation of the proposed General Plan and near-term facility improvements would result in a significant adverse impact related to GHG emissions if it would do the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant effect on the environment; or
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHG.

In addition, Section 15064.7 of the State CEQA Guidelines states that “a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies.” In the absence of significance guidelines from APCD, this analysis will use the adopted thresholds from other air districts including the South Coast Air Quality Management District (SCAQMD) and Bay Area Air Quality Management District (BAAQMD).

3.14.3 Environmental Evaluation

Methodology

At the time of writing this [DEIR/FEIR](#), neither ARB nor APCD has formally adopted a recommended methodology for evaluating GHG emissions associated with new development. Pursuant to full disclosure and according to Office of Planning and Research’s CEQA Guidelines that state, “A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project,” the construction and operational emissions associated with implementation of the proposed General Plan have been quantified using methods described below.

Construction-related GHG emissions were estimated using similar methodology to that described for criteria air pollutants in Section 3.3, Air Quality and are included in Appendix D. URBEMIS 2007 Version 9.2.4 estimates CO₂ emissions associated with construction-related GHG sources such as off-road construction equipment, material delivery trucks, soil haul trucks, and construction worker vehicles (Rimpo and Associates 2008).

Operational emissions of GHGs, including GHGs generated by direct and indirect sources, are estimated according to the recommended methodologies from ARB and the California Climate Action Registry (CCAR). Direct sources include emissions such as vehicle trips, propane consumption, and wood combustion in fire pits. Indirect sources include off-site emissions occurring as a result of the project's operations, such as electricity and water consumption. Direct emissions associated with area and mobile sources were estimated using URBEMIS2007 (Rimpo and Associates 2008) and the CCAR General Reporting Protocol (CCAR 2009). Modeling was based on project-specific data (e.g., size and type of near-term improvements) and vehicle trip information from the traffic analysis prepared for the proposed General Plan (Fehr & Peers 2010).

Indirect emissions associated with on-site electricity use were estimated using electricity consumption rates from the California Energy Commission's (CEC) California Energy Demand 2000–2010 report (CEC 2000). GHG emission factors associated with electricity production were obtained from the CCAR General Reporting Protocol (CCAR 2009). As described in Section 3.11, Public Services and Utilities, the current water capacity is adequate to accommodate these existing uses, and it can be anticipated that future improvements under the proposed General Plan (i.e., shade structures, establishing landscaping, trail development, and maintenance facilities) would likely require minimal water use beyond current demand. Use of public facilities such as the shower/restroom would likely increase with higher visitor use and the resulting demand for water would subsequently increase. Heber Dunes SVRA would continue to focus on OHV use and social gathering, with minimal facilities requiring water use. Any substantial future development that would create a demand for water requiring additional water treatment or storage capacity would undergo project-specific environmental review. For these reasons, GHG emissions associated with water consumption would be similar to existing levels and are not included in the analysis.

The methodology used in this ~~DEIR~~-FEIR to analyze the proposed General Plan's contribution to global climate change includes a calculation of GHG emissions and a discussion about the context in which they can be evaluated. OHMVR Division's purpose of calculating the project's GHG emissions is for informational and comparison purposes, as neither ARB nor APCD has adopted a quantifiable threshold for evaluating whether project-generated GHGs would be considered a significant impact.

General Plan Analysis

The proposed General Plan identifies long-range visions and goals, and provides direction on future types of improvements, services, and programs. Since the proposed General Plan does not contain specific development proposals, construction-related emissions associated with potential improvements cannot be accurately determined at this stage of the planning process. Nonetheless, given the location of Heber Dunes SVRA, its current usage, and near-term improvements, it is anticipated that future improvements that involve construction activities would be similar in nature to the near-term facility improvements expected to occur over a 2-year period. Therefore, future improvement construction emissions are expected to be similar to those of the near-term facility improvements.

Increased activity within Heber Dunes SVRA, as envisioned by the proposed General Plan, would result in increased GHG emissions. Improvements and enhancements to Heber Dunes SVRA under the proposed General Plan would be implemented over many future years, as a general plan provides guidance and vision for a period of 20 years or more. For this reason, future conditions were analyzed for the year 2030. This future analysis date is appropriate and conservative, as it accounts for projected increases in traffic on local roadways and most improvements occurring per the proposed General Plan would likely be in place.

Operational area and mobile sources of GHGs for the proposed General Plan would include emissions from the proposed near-term development and any future improvements and increased visitation to Heber Dunes SVRA. Area source emissions of GHGs would be from propane combustion in heaters and water heaters, landscape maintenance, fire pits, and barbeques. Mobile source emissions of GHGs would be from passenger vehicles; light-duty trucks, motorcycles, and motor homes. Off-road mobile source emissions would be generated by use of OHVs at Heber Dunes SVRA. Trips would be generated by Heber Dunes SVRA visitors, the proposed staff residence and RVs, and the ranger/staff station and maintenance facility. In addition, electricity consumption at Heber Dunes SVRA facilities would be an indirect source of GHG emissions. The maintenance facility and ranger/staff station would be fitted with a supplemental photovoltaic solar electric system as part of near-term facility improvements. Operational emissions were quantified using the same assumptions as detailed in Section 3.3, Air Quality. The analysis was based on peak day-trip generation at General Plan buildout. Area source emissions were quantified for operation of the near-term facility improvements. While it is likely that additional future improvements could occur over the planning horizon of the General Plan, any associated emissions would be similar in magnitude. In addition, the potential use of photovoltaic solar panels to generate electricity within Heber Dunes SVRA would help to meet the on-

site demand for electricity for the restroom/shower facilities, residential staff's permanent residence site, and maintenance area. Traffic generated by implementation of the proposed General Plan represents the largest source of operational GHG emissions. Estimated GHG emissions for the proposed General Plan are shown in Table 3.14-1.

TABLE 3.14-1. SUMMARY OF MODELED GREENHOUSE GAS EMISSIONS (CO₂E) FROM IMPLEMENTATION OF THE PROPOSED GENERAL PLAN

Source	CO ₂ e Emissions ¹
Construction Emissions	2,246 metric tons
Amortized Construction Emissions ²	75 metric tons
Operational Emissions at Full Buildout (Year 2030) (metric tons/year)	
Area Sources ³	17
On-Road Mobile Sources ⁴	342
OHV Sources ⁴	417
Electricity Consumption	20
Total Operational Emissions	796
Total Operational Emissions including amortized Construction Emissions	871

CO₂e = carbon dioxide equivalent

¹ The values presented do not include the full life cycle of GHG emissions that would occur over the production/transport of materials used during the construction of development envisioned under the plan or used during the operational life of the project, solid waste that would be generated over the life of the project, or the end of life for the materials and processes that would occur as an indirect result of the project. Estimating the GHG emissions associated with these processes would be too speculative for meaningful consideration and would require analysis beyond the current state of the art in impact assessment, and may lead to a false or misleading level of precision in reporting operational GHG emissions. Furthermore, indirect emissions associated with in-state energy production and generation of solid waste would be regulated under AB 32 directly at the source or facility that would handle these processes. The emissions associated with off-site facilities in California would be closely controlled, reported, capped, and traded under AB 32 and California ARB programs, as recommended by ARB's Scoping Plan (ARB 2008). Therefore, it is assumed that GHG emissions associated with these life-cycle stages would be consistent with AB 32 requirements.

² Construction emissions were amortized over a 30-year period and added to operational emissions per the methodology recommended by SCAQMD (SCAQMD 2008).

³ Area source emissions include emissions associated with propane combustion for space and water heating, and landscaping equipment. It was assumed that the propane tank would be refilled four times a year.

⁴ Mobile source and OHV emissions represent the average annual emissions based on the frequency of peak weekends, peak wintertime emissions, and peak summertime emissions.

Source: Modeling performed by AECOM in 2010

Due to the lack of a numerical threshold established by ARB or APCD, the following thresholds will be used to provide context:

- Facilities (i.e., stationary, continuous sources of GHG emissions) that generate greater than 25,000 metric tons CO₂/year are mandated to report their GHG emissions to ARB pursuant to AB 32.
- SCAQMD's adopted threshold of 10,000 metric tons CO₂e/year for stationary sources (SCAQMD 2008)
- SCAQMD's proposed significance screening level of 3,000 metric tons CO₂/year for residential and commercial projects (SCAQMD 2010); and
- BAAQMD's significance threshold for operational emissions of 1,100 metric tons CO₂e/year in its Draft Air Quality Guidelines (BAAQMD 2010).

As shown in Table 3.14-1, total annual GHG emissions for the proposed General Plan would be 871 metric tons of CO₂e. The annual emissions would be less than all of the emission levels listed above. This information is presented for informational purposes only, and it is not the intention of the lead agency to adopt any of the above-listed emission levels as a numeric threshold. Rather, the purpose is to put the project's GHG emissions in the appropriate statewide context in order to evaluate whether the project's contribution to the global impact of climate change would have a significant impact to the environment. Thus, the project's GHG emissions fall well below all adopted levels above which the emissions could be considered substantial. It is concluded that the proposed General Plan's GHG emissions would not have a significant impact, either directly or indirectly, on the environment and would not conflict with California's GHG-reduction goals and strategies of AB 32. This impact would be *less-than-significant*.

As described in the *Visitor Projections Methodology for Heber Dunes SVRA EIR* (AECOM 2010a) future annual visitation to Heber Dunes SVRA may be influenced by both regional demographic trends and trends in statewide OHV use. The visitor projections were developed based on the projected increase in population in Imperial County and historical data annual visitation to statewide SVRAs in the last 10 years as compiled by CSP. It was assumed that projected future visitation would grow at the historic average annual growth rate through the end of the planning horizon. This represents the upper end of the projected number of visitors to Heber Dunes SVRA. It should be noted that the increase in statewide SVRA visitation is projected to occur with or without the proposed project. While the improved facilities at Heber Dunes SVRA would attract more visitors, it is likely that the project is not creating "new" OHV users, but would accommodate visitors who would visit other SVRAs or use OHVs in nondesignated use areas in the county in the absence of the project. The enhancement of recreation opportunities at Heber Dunes SVRA would likely attract visitors who visit other OHV recreational areas in Imperial County and the immediate area, such as Ocotillo Wells SVRA, Superstition Mountain OHV Open Area,

Plaster City OHV Open Area, and Imperial Sand Dunes Recreation Area that are farther from the population centers. Thus, at the regional level, the project would help accommodate increases in OHV use in a more efficient manner.

The General Plan contains goals and guidelines that would serve to further reduce projected GHG emissions. These include:

VUR Guideline 3.1: Promote opportunities to incorporate sustainability into Heber Dunes SVRA development, operations, and maintenance. Sustainability initiatives could include incorporating alternative energy and promoting energy efficiency, using reclaimed water, to new construction, and other sustainability initiatives.

VUR Guideline 3.2: Minimize greenhouse gas emissions at Heber Dunes SVRA by supporting and encouraging renewable energy powered OHV use.

IE Guideline 4.3: Highlight opportunities for OHV recreationalists to minimize their impacts on natural and physical resources through engaging, creative, interpretive programming and education. Seek assistance in developing creative interpretive programming from organizations such as Tread Lightly!.

IE Guideline 4.4: Interpret the OHMVR Division carbon reduction goals and inspire Heber Dunes SVRA visitors to adopt similar measures in their daily lives, including OHV recreation.

Near-Term Facility Improvements Analysis

GHG emissions due to construction and operation of the near-term facility improvements would be similar to or slightly less than under the proposed General Plan. As discussed in the General Plan analysis, GHG emissions from the project would not have a significant impact to the environment and would not conflict with California's GHG reduction goals and strategies of AB 32. This impact would be *less-than-significant*.

3.14.4 Summary of Significant Impacts

Implementation of actions under the proposed General Plan and near-term facility improvements would not result in significant impacts with respect to GHG emissions.

3.14.5 Mitigation Measures

No significant impacts would result with implementation of the proposed General Plan and near-term facility improvements, and no mitigation is required.

Chapter 4.0 – Cumulative Analysis

4.1 Introduction

State CEQA Guidelines Section 15130 requires that an EIR discuss cumulative impacts of a project and determine if the project's incremental effect is "cumulatively considerable." According to CEQA, incremental effects of an individual project are considerable when viewed in connection with the effects of past projects and the effects of probable future projects (PRC Section 21083[b][2]). "Cumulative impacts" refer to two or more individual effects that, when considered together, are considerable or compound or increase other environmental impacts (State CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related reasonably foreseeable projects.

For purposes of this ~~DEIR~~FEIR, the project would have a significant cumulative effect if the following occurred:

- the cumulative effects of other past, current, and probable future projects without the project are not significant and the project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- the cumulative effects of other past, current, and probable future projects without the project are already significant and the project contributes measurably to the effect. The standards used herein to determine measurability are that either the impact must be noticeable or must exceed an established threshold of significance.

Section 15130(b) of the State CEQA Guidelines states, "[t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects that do not contribute to the cumulative impact."

4.2 Geographic Scope

The geographic area that could be affected by the proposed General Plan and near-term facility improvements varies depending on the type of environmental resource being considered. Each section of this ~~DEIR~~FEIR considers the specific geographic segment that is directly related to the individual topic addressed. For example, the analysis of some air

quality impacts is based on regional-scale growth; thus, a regional perspective must be used to assess cumulative air quality impacts. In the case of aesthetic impacts, given the localized impact area of concern, a smaller, more localized area surrounding the immediate project area, as well as a community scale that encompasses the larger community within which the proposed project is located, would be appropriate for consideration. Table 4-1 presents the geographic scales associated with the different resources addressed in this ~~DEIR~~-FEIR analysis.

TABLE 4-1. GEOGRAPHIC SCOPE OF CUMULATIVE IMPACTS

Resource Issue	Geographic Scale of Impacts
Air Quality	Local (carbon monoxide, particulate matter, air toxics) Air basin/regional (ozone and particulate matter) Global (greenhouse gases)
Agricultural Resources	Local and regional scales
Biological Resources	Local scale
Cultural Resources	Archaeological survey area (local scale) Lower Colorado River Valley (regional scale)
Geology and Soils	Local scale
Hazardous Materials	Local and community scales
Hydrology and Water Quality	Local scale and areas within the same watershed and aquifer
Land Use and Public Policy	Local and community scale
Noise	Local scale
Recreation	Community and regional scales
Transportation and Traffic	Regional and local scales
Public Services and Utilities	Regional and community scales
Visual Resources	Local and community scales

4.3 Cumulative Forecasting Methodology

The State CEQA Guidelines allow for the preparation of a list of past, present, and reasonably foreseeable future projects and/or the use of projections contained in adopted general plan or related planning documents as viable methods of determining the scope of related projects for the cumulative impacts analysis (State CEQA Guidelines Section 15130). Guidance is as follows:

- List Method – A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency.
- Regional Growth Projections Method – A summary of projections contained in an adopted general plan or related planning document that is designed to evaluate regional or area-wide conditions.

For the purpose of this ~~DEIR~~FEIR, both approaches were used. This is due to the localized nature and specific land use of the proposed General Plan and near-term facility improvements, while also considering that the project site is located in an area that has experienced and will continue to experience regional growth. This method allows for a thorough, project-based cumulative analysis within the defined geographic area of the proposed project. However, certain issues that extend far beyond the project vicinity (air quality, global climate change) also rely on projections.

4.3.1 Regional Growth Projections

Heber Dunes SVRA is located within unincorporated Imperial County. As determined through visitor surveys, visitors to Heber Dunes SVRA are primarily from the local area. The proposed General Plan and near-term facility improvements would enhance recreational opportunities for the surrounding community. Imperial County is expected to experience substantial population growth over the next decades, as shown in Table 4-2.

TABLE 4-2. REGIONAL GROWTH PROJECTIONS

Jurisdiction	Year					Percent Change
	2010	2020	2030	2040	2050	
Imperial County	189,675	239,149	283,693	334,951	387,763	+104

Source: California Department of Finance 2008

This type of regional and localized growth has the potential to result in numerous environmental issues such as traffic congestion, air quality degradation, biological habitat loss, agricultural lands development, water quality degradation, and other environmental changes. This cumulative analysis considers the regional growth trends and the more specific individual projects that are discussed below.

4.3.2 List of Cumulative Projects in the Vicinity

Information on past, present, and reasonably foreseeable future projects, and identified project impacts, were gathered at Imperial County, City of Calexico, City of Imperial, and Caltrans through review of available environmental documentation and consultation with planning staff (conducted in March 2010). A summary of project information and identified project impacts for these projects are shown in Table 4-3. The locations of the cumulative projects are shown in Figure 4-1.

TABLE 4-3. CUMULATIVE PROJECTS

Figure 4-1 Map Key	Project Name	Project Description	Location	Potential Impacts	Status
City of Holtville					
1	Alamo Trail	Creation of a new segment of the Alamo River Recreational Trail System between Early Walker Park and Butler Park. The trail is 1.5 miles long. Two staging areas will be provided for parking.	Along River channel off Highway 115 to Butler	Negative Declaration found no significant impacts.	Negative Declaration. Currently trail grubbing and cleanup. Site inspection ongoing.
City of Calexico					
2	Hallwood/ Calexico Place III and Casino	Development of 232 acres for commercial highway land uses, including a casino, hotel, retail, offices, and restaurants. Includes streets and detention basins.	West of State Highway 111/ Imperial Avenue and south of Jasper Road	Project issues included Air Quality, Biology, Cultural Resources, Toxic/ Hazardous Materials, Drainage/Absorption, Floodplain/Flooding, Land Use, Noise, Public Services, Traffic/Circulation, and Cumulative Effects. Findings made and Overriding Considerations adopted.	Project approved May 20, 2009. Development agreement under review.
3	Calexico Gran Plaza	Two-phased outlet commercial center development on 62 acres. Phase I would include 307,276 square feet of building area and Phase II would include 250,900 square feet of building area. Approximately 2,271 parking spaces provided. Proposed development would have	Between the International Border and Second Street	Environmental documentation not yet complete.	EIR pending.

Figure 4-1 Map Key	Project Name	Project Description	Location	Potential Impacts	Status
4	Esmeralda Estates	<p>24% lot coverage.</p> <p>Project consists of 80.08 acres of mixed-use development, 291 single-family homes (45.31 acres of 6,000-square-foot lots), 1.66 acres of open area and pedestrian links, 11.10 acres of easements, 2.61 acres of park, 1.46 acres for a fire facility, and 4.65 acres of retention basin.</p>	North of Jasper Road and east of Meadows Road	Environmental documentation not yet complete.	Project pending. Master EIR being prepared. Revised Notice Of Preparation sent out November 6, 2007, for 30-day public review. Second Screencheck DEIR currently being reviewed by City Staff.
5	Calexico Mega Park	<p>Development of 150-acre site with commercial/retail uses phased over 10 years of construction. The first 5 years of development would include construction of Segment 1: Jasper Crossing, approximately 404,845-square-foot retail center on 50 acres in the northwest portion of the project site. Jasper Crossing would include 18 buildings to be developed and occupied by retail stores, shops, restaurants, a drug store, financial uses, and a Target store. Jasper Crossing would provide</p>	Highway 111 and Jasper Road	<p>Conversion of land designated as Prime Farmland and Farmland of Statewide Importance to nonagricultural uses.</p> <p>Conflict with or obstruct the implementation of the applicable air quality plan.</p> <p>Increase noise levels along local roadways.</p>	Final EIR June 2009. Files being reviewed and closed.

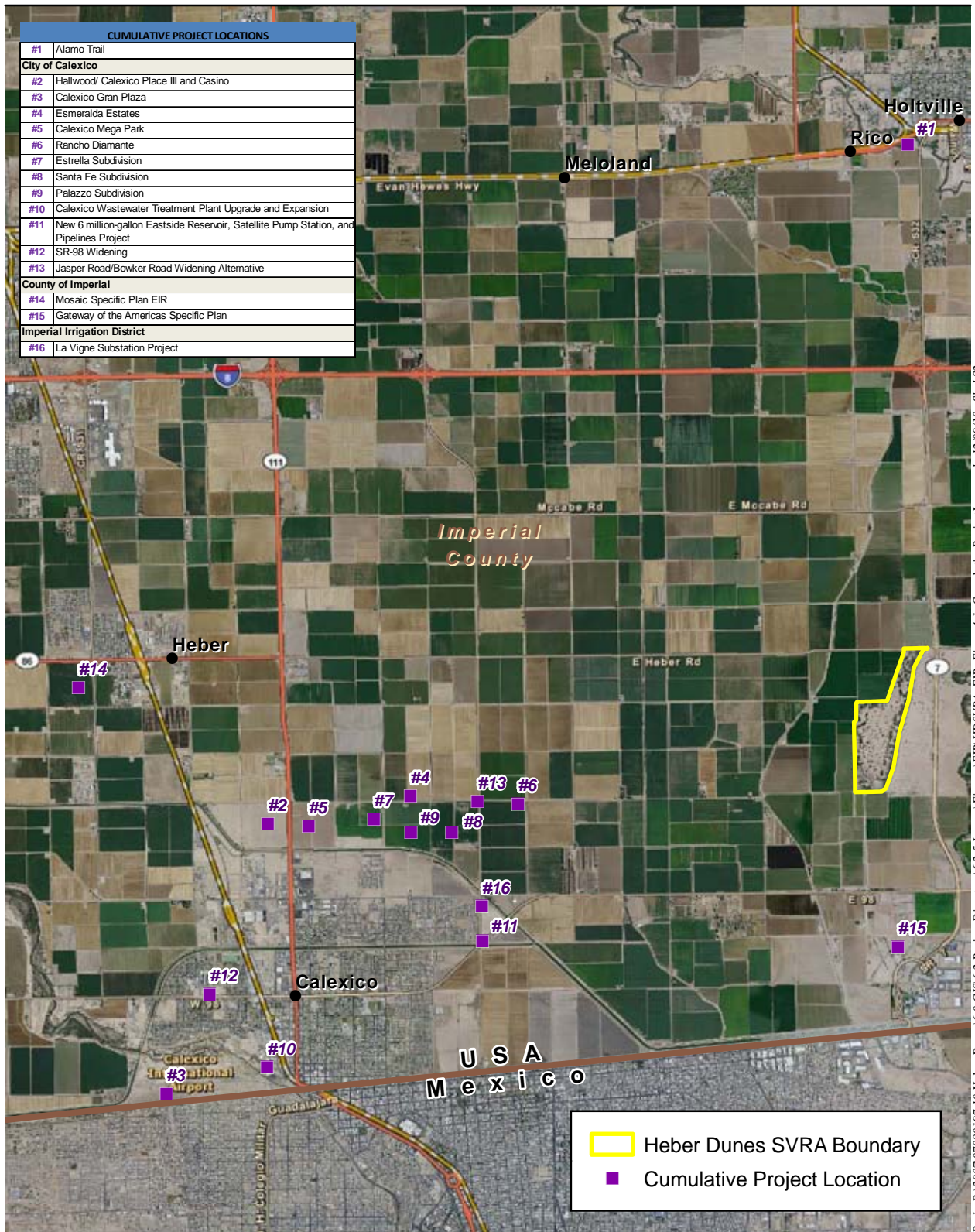
Figure 4-1 Map Key	Project Name	Project Description	Location	Potential Impacts	Status
		2,176 parking spaces, a storm water retention basin, and a new street (Rockwood Avenue).			
6	Rancho Diamante	Development of 1,042 acres with mixed use. Includes 2,560 single-family homes on 539.7 acres, 1,729 town homes on 105.7 acres, 22.2 acres of community park, 62.6 acres of schools, 38 acres of retention basins, and 172.1 acres of roadways and easements.	North of Jasper Road and east of Bowker Road	Environmental documentation not yet complete.	Project pending. Master EIR being prepared. Revised NOP sent out November 6, 2007, for 30-day public review. Second Screencheck DEIR currently being reviewed by City Staff.
7	Estrella Subdivision	Mixed-use development of 149.74 acres including approximately 371 single-family homes on 96.51 acres, 400 multi-family attached homes on 20.03 acres, a 12.94-acre school site, 6.05 acres of park, 1.56 acres of open area/pedestrian links, 12.65 acres of street with parkway, and 9.01 acres of retention basin area.	South of Jasper Road and west of Meadows Road	unavailable	Project approved by City Council November 20, 2007. Notice of Determination filed November 26, 2007. Annexation approved by Local Agency Formation Commission on September 24, 2009. Project officially annexed into the city in March 2010.

Figure 4-1 Map Key	Project Name	Project Description	Location	Potential Impacts	Status
8	Santa Fe Subdivision	A 220-acre mixed-use development. Includes 1,094 single- and multi-family residences, 17.5-acre school site, and park/detention basin.	South of Jasper Road and west of Bowker Road	Project issues include Agriculture, Air Quality, Cultural Resources, Cumulative Effects, Land Use, Noise, Hazardous Materials, Traffic, and Biology.	On hold indefinitely.
9	Palazzo Subdivision	Mixed-use development of 154.6 acres consisting of 182 single-family homes on 30.91 acres, 934 multi-family homes on 65.48 acres, 102 units of mixed-use commercial village on 6.40 acres, 21.62 acres for regional parks, and 13.33 acres for retention basins.	South of Jasper Road and east of Meadows Road	Environmental review not yet complete.	Awaiting screencheck EIR; second screencheck specific plan under review.
10	Calexico Wastewater Treatment Plant Upgrade and Expansion	Replacement of obsolete and older equipment with newer technology and expansion of treatment capacity from 4.3 million gallons per day to 6.5 million gallons per day. Both the upgrade and the increase in treatment capacity would be accomplished within the boundaries of the existing facility and an area that extends 250 feet south of the plant.	Cesar Chavez Boulevard and Second Street	No significant impacts after mitigation.	Notice Of Determination issued September 25, 2009.

Figure 4-1 Map Key	Project Name	Project Description	Location	Potential Impacts	Status
11	Eastside Reservoir, Satellite Pump Station, and Pipelines Project	Three-phased Water Treatment Improvement and Expansion Project with EPA funding. Construction and operation of a new 6-million-gallons-per-day reservoir, satellite pump station, and associated pipelines.	Near SR-98, Cole Road, Bowker Road, LaVigne Road	Negative Declaration prepared. No significant effects on environment identified.	NOD made on September 23, 2009. Ready for construction.
12	SR-98 Widening	The project proposes to widen SR-98 from two to four lanes from Dogwood Road through just west of Ollie Avenue, and from four to six lanes from Ollie Avenue through SR-111, tying back to the existing road at Rockwood Avenue. The project would also update the number of turning lanes according to traffic needs.	Dogwood Road and Rockwood Avenue	Mitigated Negative Declaration (MND) prepared and found no significant effects on the environment after mitigation. Project issues included Aesthetics, Air Quality, Biology, Drainage, Noise, Recreation, Traffic, and Land Use.	NOD filed. Caltrans approved project on October 30, 2008.
13	Jasper Road/ Bowker Road Widening Alternative	Widening Jasper Road to become a six-lane expressway.	Jasper Road/ Bowker Road	Environmental analysis not yet completed.	Project is in the project report/ environmental document phase, but, due to funding and resource constraints, work has been suspended as of April 19, 2010.

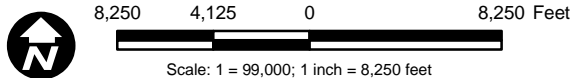
Figure 4-1 Map Key	Project Name	Project Description	Location	Potential Impacts	Status
Imperial County					
14	Mosaic Specific Plan EIR	A variety of land uses are proposed in the Specific Plan Area, including construction of up to 1,154 residential dwelling units of varying densities, approximately 2.7 acres for neighborhood commercial uses, and 23,200 square feet of commercial uses. An additional 17.8 acres would be dedicated for future use by the Heber Public Utility District and IID for public facilities.	Fawcett Road, SR-86, Dogwood Road	Significant unavoidable impacts to Air Quality and Agricultural Resources. Impacts less than significant after mitigation to Transportation, Geology, Noise, Hazardous Materials, Hydrology, Public Services, and Biology.	End of DEIR review November 12, 2008.
15	Gateway of the Americas Specific Plan	Includes 1,755 gross acres of land, of which 1,420.6 net acres are considered developable. Proposed master planned commercial and industrial complex.	5 miles east of the city of Calexico, approximately 0.25 mile north and parallel to SR-98	Significant unmitigable impacts to Noise, Agriculture, Public Safety, and Air Quality.	Program EIR completed in 1997. Portions under construction.
Imperial Irrigation District					
16	La Vigne Substation Project	Construct, operate, and maintain the new La Vigne View Substation and construct and maintain approximately 0.25 mile of 92-kV double-circuit line along Bowker Road.	Calexico, SR-98	Negative Declaration found no significant effects on environment.	Project approved on September 12, 2006. Project on hold as of April 7, 2010, and may be built at an unknown time in the future.

Sources: CEQAnet 2010 at <http://www.ceqanet.ca.gov>
 City of Calexico, Community Development Department – Planning Division, Project List Monthly Status Report, May 2010.
 Imperial County Planning and Development Services: <http://www.icpds.com/?pid=988>



Path: P:\2007\07080197_10 Heber Dunes 6.0 GIS\6.2 Project Directory\6.2.3 Layout\Figures\EIR\HDSVRA_EIR_Figure4-1_CumulativeProjectLocs.mxd, 12/09/10, Sheet52

Source: Source: California State Parks 2009; NAIP 2009; ESRI 2009



Heber Dunes SVRA Boundary
 Cumulative Project Location

Figure 4-1
Cumulative Project Locations

4.4 Cumulative Impact Analysis

As described in Section 4.2 and Table 4-1, the cumulative scenario under each environmental discipline differs depending on the potential area of effects. For example, the cumulative conditions for regional air quality account for impacts within the entire air basin because air quality impacts occur on a regional or basin-level scale, while the cumulative impacts for archaeology would be limited to a more local scale for ground-disturbing activities. The cumulative setting, limitations, and analysis for each discipline are discussed as appropriate below.

4.4.1 Land Use and Public Policy

Cumulative land use impacts are generally assessed on both a local and a community scale. Land use compatibility issues are relevant at a local level as they involve the interrelationship between land uses associated with the project and neighboring properties. A cumulative impact could be anticipated if there were a potential conflict with existing land uses that could, in combination with other potential projects, result in substantial changes to the community character or local planning objectives. Evaluating projects in proximity to the project site was necessary to determine if there would be any cumulative changes to the overall land use that characterizes the area. The list of projects provided in Table 4-3 was used for the cumulative analysis of Land Use and Public Policy.

While Heber Dunes SVRA is a unique land use within the context of adjacent agricultural land uses that extend for miles in most directions, it is generally considered compatible with those uses surrounding it. This is largely because it is a rural area with very few sensitive uses (i.e., residential, commercial, or other urban uses) that could be affected by sound, dust, or traffic associated with Heber Dunes SVRA. The proposed General Plan or near-term facility improvements would not substantially modify the land use at Heber Dunes SVRA; in fact, they would enhance the existing recreational opportunities. Because there are few proposed projects in the vicinity of Heber Dunes SVRA, the potential for cumulative land use impacts is further minimized. The nearest development that would alter existing land use near Heber Dunes SVRA is the Gateway project located approximately 1 mile south (see Figure 4-1, #15). The Gateway project area was previously agricultural land that is currently being converted to industrial and commercial uses. Imperial County General Plan designated the Gateway Specific Plan area in 1993 for urbanized development and anticipated this type of development. Development of the Gateway project is planned in four phases over 30 years (Imperial County 1997). Future residential and commercial developments are planned for areas near existing communities, such as Calexico and Heber. Because Heber Dunes SVRA currently provides recreation and OHV use opportunities, the recreational enhancements that would take place as part of the proposed General Plan and near-term facility improvements would not combine with the

new Gateway development to create local or regional land use conflicts or incompatibilities. For these reasons, the proposed General Plan and near-term facility improvements would not significantly contribute to a cumulative land use or public policy impact.

4.4.2 Transportation and Traffic

Cumulative analysis of transportation and traffic must consider long-term forecasted conditions that take background growth, future anticipated development, and the proposed project into account. Cumulative conditions were assessed within the context of future traffic conditions occurring in the year 2030. The Traffic Impact Study (Fehr & Peers 2010) provides analysis of roadway conditions and intersection operations in 2030 that accounts for anticipated increases in traffic volumes as well as the addition of vehicle trips generated by the proposed General Plan.

The nearest cumulative project that could combine with traffic accessing Heber Dunes SVRA and may have an influence traffic operations in the vicinity of Heber Dunes SVRA is the Gateway project, located approximately 1 mile south of Heber Dunes SVRA. Operation of this project would create a substantial amount of new commercial and industrial-based traffic, as the land was previously in agricultural production and would not have generated large volumes of traffic.

With increased visitation of Heber Dunes SVRA, traffic on the nearby roadways that provide access to the site, as well as regional transportation corridors, would also increase, as described in Section 3.2. In addition, as shown in the Traffic Impact Study, there is ample capacity on local roadways in the year 2030 to accommodate additional traffic volume before exceeding acceptable LOS C conditions. However, because the majority of visitation at Heber Dunes SVRA occurs on the weekend, specifically on Sunday, the increase in related traffic would not overlap with normal weekday traffic associated with most development, including the Gateway project.

4.4.3 Air Quality

A regional projection approach using large-scale planning documents is considered when evaluating potential cumulative air quality impacts to the overall regional air basin, and the list of projects is used to analyze localized cumulative impacts such as fugitive dust or CO hotspots. The air quality section of this ~~DEIR~~ [FEIR](#) includes a future analysis to consider long-term forecasted air quality conditions.

As described in Section 3.3, operational emissions associated with implementation of the proposed General Plan and the near-term facility improvements would not exceed the recommended thresholds of significance. The thresholds of significance are relevant to

whether a project's individual emissions would result in a considerable incremental contribution to the existing cumulative air quality conditions in the region. Since the project's emissions would be less than these threshold levels, the proposed project would not be expected to result in a considerable incremental contribution to a significant cumulative impact

On a local scale, it is possible that construction activities from other cumulative projects may be occurring at the same time as the proposed General Plan and near-term facility improvements. None of the cumulative projects, with the exception of the Gateway project, are in the immediate vicinity of Heber Dunes SVRA. The Gateway project is ongoing, and large portions of the project area have already been graded and facilities constructed. In addition, only minor ground-disturbing activities would be required on a short-term basis to implement the near-term facility improvements and other possible projects under the proposed General Plan. Overlapping construction activities at Heber Dunes SVRA and the Gateway project would not contribute to a significant cumulative air quality impact, as the intervening distance would serve to dissipate fugitive particles.

4.4.4 Noise

Because noise can travel only a limited distance, it is a local rather than regional issue, and thus, the use of the cumulative project list is appropriate for cumulative noise analysis. There are no projects in the immediate vicinity of Heber Dunes SVRA, with the nearest cumulative project being the Gateway project, approximately 1 mile south. Even if construction activities associated with the General Plan or the near-term facility improvements were to overlap with construction noise at the Gateway project, the distance between the two locations would eliminate the potential for significant cumulative noise impacts. Similarly, distance between Heber Dunes SVRA and the Gateway project site would minimize any potential for operational noises to combine and create a cumulative noise impact.

Implementation of the proposed General Plan and near-term facility improvements is expected to increase traffic in the local area due to increased visitation. Other cumulative projects in the area would also add traffic to the roadways. However, the majority of traffic generation associated with Heber Dunes SVRA is during weekends and would not overlap or combine with the typical traffic generated by other projects during weekday peak hours, thus minimizing potential for cumulative noise impacts due to increased traffic volumes.

4.4.5 Agricultural Resources

Extensive agriculture resources are located throughout the entire region. Imperial County is expected to experience continued population growth that may cause some areas of agricultural land to be converted to urban uses to support and accommodate the growing

population. Some projects on the cumulative project list, such as the Gateway project and other large residential and mixed-used projects, would convert agricultural land to urban development. The loss of these agricultural lands would be permanent and irreversible and, in some cases, has been found to be a significant unavoidable impact per CEQA. However, the continued use of Heber Dunes SVRA for OHV recreation and social gathering would not alter the existing environment in a manner that would cause the conversion of surrounding agricultural uses to nonagricultural uses, and would not result in the permanent loss of an agricultural resource, as the site is not currently used for agriculture and was never considered for agricultural use due to the unsuitable soils and topography. For this reason, implementation of the proposed General Plan and near-term facility improvements would not combine with regional growth and specific local projects to create a significant cumulative impact to agricultural resources.

4.4.6 Visual Resources

Visual resources can be either a localized resource or a regional concern, depending on the overall aesthetic environment. Due to the perimeter vegetation that screens a substantial portion of Heber Dunes SVRA, views of the site are limited from most places. The densest vegetation occurs along the eastern boundary of the site, obscuring views of the site from areas west, including SR-7 where most views occur as motorists pass. Because Heber Dunes SVRA is not visible on an at-large or regional scale, nor does it have visually dominant features, the cumulative visual environment is considered to be the local area.

The nearest cumulative project, the Gateway project, will substantially change the existing visual environment from agricultural fields to commercial and industrial development. Other local projects on the cumulative project list are generally residential and mixed use and would also alter the existing visual environment. Most of these planned projects are located near or adjacent to existing urban development, such as the city of Calexico, and would extend the urban aesthetic to areas previously used for agriculture. However, these projects are not in the same viewshed as Heber Dunes SVRA and would not combine visually to alter the existing aesthetic environment. Implementation of the proposed General Plan and near-term facility improvements would add some new structures to the property, but the majority of the area would continue to be open area for OHV use and recreation. These new structures and other enhancements would not substantially change the overall existing visual character of the area. For these reasons, no cumulative visual impacts are anticipated.

4.4.7 Biological Resources

The geographic scope for biological resources cannot be defined by jurisdictional or other political boundaries, as sensitive habitats and species can have widespread ranges and can

vary for individual species. For this reason, the biological cumulative impact analysis considers the local habitat ranges for sensitive species.

Implementation of the proposed General Plan, including the near-term facility improvements, is not anticipated to have a cumulatively considerable impact to the sustainability of biological resources in the region. The existing activities at Heber Dunes SVRA would continue and would be enhanced, while guidelines in the proposed General Plan would serve to protect and conserve the natural resources on-site. As outlined in Section 3.4, Biological Resources, there are no sensitive plant and/or wildlife species within Heber Dunes SVRA, and the natural vegetation communities that exist on-site are not locally or regionally sensitive. The western burrowing owl has been observed at Heber Dunes SVRA; but, it is not currently occupying the site, as it prefers the coverage and foraging opportunities of the nearby agricultural fields. The proposed General Plan and near-term facility improvements would not affect surrounding agricultural lands and would not displace or impact western burrowing owl habitat or activities in the nearby area. However, due to the high potential that western burrowing owls could occupy the site, mitigation (Impacts Bio-1a and 1b and Mitigation Measure Biology-1) has been included to avoid and reduce potential impacts to the species to less-than-significant. The conversion of agricultural land to urban development occurring throughout Imperial County could displace the western burrowing owl or other sensitive species that use the fields for life activities. Due to the lack of sensitive biological species within Heber Dunes SVRA and the various guidelines within the proposed General Plan that would provide appropriate planning, restrictions, and stewardship to protect on-site biological resources, implementation of the proposed General Plan and near-term facility improvements would not add to a cumulative biological impact.

4.4.8 Cultural Resources

Cultural resources are known to exist throughout southern California and are not limited to any specific locale. For this reason, the geographic scope for consideration of cumulative impacts to cultural resources generally includes the perspective of the resources that are physically present within the project area and within the broader regional geography associated with the Lower Colorado River Valley.

As discussed in Section 3.8, Cultural Resources, the areas currently proposed for disturbance within Heber Dunes SVRA are almost entirely located in vacant, unvegetated, and previously disturbed areas, and no cultural resources were found during surveys. In addition, the site has been used for OHV recreation for many years. Because there is low potential for cultural resources to be located in areas that would likely be used for any future development under the proposed General Plan or proposed for development of the near-term facility improvements, and there are policies to protect and preserve any

resources that could be discovered during construction, no significant impacts to cultural resources are anticipated. Growth and development throughout the region, including the projects on the cumulative projects list and development that may occur to accommodate regional population expansion, would potentially impact areas of sensitive cultural resources. However, because the proposed General Plan and near-term facility improvements at Heber Dunes SVRA are not expected to impact significant cultural resources, and because appropriate plans are in place if cultural resources were to be discovered, they would not add to a cumulative impact to cultural resources.

4.4.9 Geology and Soils

Though geology is a regional topic with geologic features spanning large areas, impacts to soils and geology are typically site specific. Construction of a project in extreme geologic conditions such as very steep slopes may have the potential to impact surrounding areas. However, adverse geology and soils impacts are generally avoided by required conformance with the UBC and other applicable regulations. In addition, there are no extreme geologic features in the project vicinity. For this reason, the cumulative study area for this topic included the list of cumulative projects in the general project vicinity.

The potential soil and geology impacts from the proposed General Plan and near-term facility improvements would affect only on-site development, and no major excavations or substantial ground disturbance is proposed. The project is not located adjacent to any cumulative projects that would significantly impact soil stability or geologic conditions. In addition, all development projects would be required to adhere to applicable regulatory guidelines for geologic, seismic, and soil safety. Thus, implementation of the proposed General Plan and near-term facility improvements, along with the other projects included on the cumulative projects list, would not create unstable geologic conditions in the surrounding area and would not contribute to a larger cumulative impact to geology and soils.

4.4.10 Hydrology and Water Quality

Water quality and hydrology impacts can have widespread effects throughout an entire watershed, a hydrologic unit, and additional downstream locations. For this reason, the analysis of potential cumulative impacts to water quality and hydrology includes the cumulative project list and the general area of the Imperial HU of the Colorado River Basin.

As described in Section 3.10, Hydrology and Water Quality, future development and improvements within Heber Dunes SVRA would not cause substantial adverse effects on hydrology and water quality. With anticipated regional growth in Imperial County, new urban development is likely to occur to support the increase in population, creating new impervious surfaces, runoff, erosion potential, and pollutant loads. Similar to most other

development, new facilities at Heber Dunes SVRA would also create increased impervious surface and result in additional non-point-source runoff and pollution. However, the extensive undisturbed areas that would be maintained throughout Heber Dunes SVRA would serve to absorb and drain any runoff created by the new impervious surfaces, and BMPs and management goals would serve to maintain soil stability and reduce the potential for erosion and sedimentation. All development projects would be required to adhere to all applicable permitting requirements regarding water quality, such as preparation and implementation of a SWPPP, thus minimizing the potential for water quality impacts. For these reasons, implementation of the proposed General Plan and near-term facility improvements would not contribute to a cumulative impact to water quality.

4.4.11 Public Services and Utilities

The cumulative analysis of public services and utilities is typically based on the local community being served and the potential impacts to that provision of service. The proposed General Plan and near-term facility improvements would enhance the existing uses at Heber Dunes SVRA and may result in slight increases for the need of public services such as emergency medical services and utilities such as electrical transmission. However, as discussed in Section 3.11, Public Services and Utilities, the increase in demand would be minor and would not affect the ability of local service providers to adequately serve the rest of the community. Existing emergency service responders and utility capacities are expected to be sufficient to meet any increase in demand for emergency services at Heber Dunes SVRA. The other cumulative projects are typically smaller residential developments or expansions of existing facilities and would not be expected to generate high demand for fire, medical, or police services. The Gateway project is one of the largest projects in the area and would require public services and utilities. However, the Gateway project is included as a specific planning area in the Imperial County General Plan and would have been accounted for in local and regional service and utility plans. In addition, projects located in other jurisdictions may be served by different providers or agencies. For these reasons, implementation of the proposed General Plan and near-term facility improvements would not add to a cumulative impact to public services and utilities.

4.4.12 Recreation

Recreation opportunities are often considered on the local level, as the local community population tends to be the users of nearby recreation facilities. However, in the case of OHV recreation, many people travel long distances, such as throughout all of southern California, to reach OHV recreation areas. While Heber Dunes SVRA does not typically attract users from outside the local area, regional consideration of cumulative recreation impacts is necessary due to the potential for visitors from outside the local area.

Implementation of the proposed General Plan and near-term facilities would not substantially change the current recreational uses that occur at Heber Dunes SVRA but, rather, would enhance and add to the existing opportunities for recreating. Because of the small size of Heber Dunes SVRA and minimal OHV use challenges, enhanced and expanded recreational opportunities would likely be taken advantage of most by the local population. The betterment of facilities at Heber Dunes SVRA would not negatively affect the larger OHV recreational areas that draw visitors from the region and would provide more recreational opportunities for the local community. Enhanced recreation that would result from implementation of the proposed General Plan and near-term facility improvements would help accommodate additional demand for OHV use and social gathering opportunities that are anticipated to occur with ongoing local and regional growth. For this reason, implementation of the proposed General Plan and near-term facility improvements would not add to a cumulative impact to recreational opportunities or facilities in the local area or region.

4.4.13 Hazardous Materials

While some hazardous conditions are site specific, other types of hazards, such as hazardous materials contamination, have the potential to impact an area beyond a project's boundary. The generation of hazardous conditions can result from not just the implementation of recently constructed or future projects, but from long-standing land uses such as gas stations or dry cleaners. Because of the possibility for large areas to be affected by hazardous conditions, the cumulative study area considered for this topic includes a 1-mile radius surrounding Heber Dunes SVRA. As described in Section 3.13, Hazards and Hazardous Materials, the storage and use of hazardous materials such as gasoline and oil on-site would continue. However, as with the current operations, the new fueling station would be required to meet all regulatory standards for safe containment, storage, and handling.

No other hazardous material sites were found within a 1-mile radius of Heber Dunes SVRA. The development of the Gateway project, approximately 1 mile south, would likely require the use of typical hazardous materials during construction and operation. This project would also be required to meet and comply with all regulatory safety requirements for hazardous materials to minimize any potential for release or contamination. With adherence to all requirements, the proposed General Plan and near-term facility improvements along with other cumulative projects would not contribute to a cumulative impact regarding hazardous materials.

4.4.14 Climate Change

From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative and projects should be evaluated through cumulative impacts, because GHG emissions from multiple projects could result in a cumulative impact with respect to global climate change. Thus, this is the approach that was taken in the climate change analysis, Section 3.14. As detailed in Section 3.14, the project's GHG emissions fall well below all adopted levels above which the emissions could be considered substantial. It is concluded that the proposed General Plan's GHG emissions would not have a significant impact, either directly or indirectly, on the environment and would not conflict with California's GHG-reduction goals and strategies of AB 32.

In addition, the proposed General Plan contains policies that would serve to further reduce projected GHG emissions, such as incorporating sustainability into Heber Dunes SVRA development, operations, and maintenance; supporting electric OHV use; and encouraging Heber Dunes SVRA visitors and OHV users to protect natural resources and incorporate sustainable practices into their daily lives. Also, by providing improvements to the recreational experience, more local visitors are likely to utilize Heber Dunes SVRA and this would help accommodate an increase in OHV use in a more efficient manner and minimize distance traveled to access OHV recreation areas.

Because implementation of the proposed General Plan and near-term facility improvements would not generate GHG emissions that could be considered substantial and may serve to reduce projected emissions, it would not significantly contribute to the combined GHG emissions resulting from other projects. The cumulative GHG emission impact would be less than significant.

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Chapter 5.0 – Other CEQA Required Analysis

5.1 Environmental Effects Eliminated from Further Analysis

The following topics were eliminated from full analysis in ~~the DEIR~~ [this FEIR](#) because there is no potential for significant environmental effects resulting from implementation of the proposed General Plan and near-term facility improvements related to these issues. A brief reason for elimination is provided below for each issue area.

5.1.1 Mineral and Energy Resources

Heber Dunes SVRA has an abundance of sand, as do many areas throughout Imperial County. Sand extraction has not occurred at Heber Dunes SVRA historically, and mineral resource extraction is not permitted within CSP property. The Conservation and Open Space Element of the Imperial County General Plan contains discussion and goals relating to mineral resources. Heber Dunes SVRA and the surrounding area are not shown as an area of mineral resources on the Mining Resources Map (Imperial County n.d.). The continued use of Heber Dunes SVRA for OHV recreation would not necessarily preclude its use for mineral extraction in the future.

SDG&E transmission towers and overhead transmission lines traverse the southern portion of Heber Dunes SVRA. These transmission facilities, associated easements, and access would not be altered by the proposed General Plan. Heber Dunes SVRA does not contain important energy resources. The Geothermal/Alternative Energy and Transmission Element of the General Plan delineates areas of potential future geothermal and wind development within Imperial County, and Heber Dunes SVRA and the surrounding area are not included (Imperial County 2006).

The proposed General Plan and near-term facility improvements are not expected to result in impacts to energy and mineral resources; thus, they are not further addressed in this ~~DEIR~~ [FEIR](#).

5.1.2 Population and Housing

As described in Chapter 2, a single staff RV residence currently exists within Heber Dunes SVRA. In addition to the on-site year-round staff, there are seasonal camp hosts who live on-site in RVs during the busy season. The existing on-site RV residence would be replaced with a new permanent residence and three new concrete RV pads for camp hosts. The improvements to on-site housing for Heber Dunes SVRA staff would not create population or housing impacts. No off-site housing would be created or affected, and improvements to the existing recreational opportunities would not generate substantial population growth in the area or require additional housing demand.

5.1.3 Paleontological Resources

Paleontological resources are the remains or fossil traces of prehistoric life, exclusive of humans. There is a direct relationship between fossils and the geologic formation in which they are found; therefore, with knowledge of the underlying geology of an area, it is possible to estimate the likelihood that paleontological resources are present. Heber Dunes SVRA is underlain by Quaternary sediments. The paleontological sensitivity for this geologic formation is not listed as high or moderate (County of San Diego 2009). In addition, the ground-distributing activities associated with actions as part of the proposed General Plan and near-term facility improvements would not require major excavations to depths that would substantially disrupt the underlying bedrock where fossils would potentially occur. For these reasons, no impact to paleontological resources is anticipated.

5.2 Unavoidable Significant Environmental Effects

As required by State CEQA Guidelines Section 15126.2(b), an EIR must describe any significant impacts that cannot be avoided, including those impacts that can be mitigated but not reduced to a less-than-significant level. Chapter 3 of this ~~DEIR~~-FEIR describes potential environmental impacts that may occur with implementation of the proposed General Plan and near-term facility improvements. For all issue areas, the proposed General Plan and near-term facility improvements would not result in any unavoidable significant environmental effects.

5.3 Significant Irreversible Environmental Changes

As required by Section 21100(b)(2)(B) of the CEQA Statutes and Section 15126(c) of the State CEQA Guidelines, an EIR must analyze the extent to which the project's primary and secondary effects would affect the environment and commit nonrenewable resources to uses that future generations would not be able to reverse. Irretrievable commitment of these resources is required to be evaluated to ensure that such consumption is justified. Implementation of the proposed General Plan and near-term facility improvements would cause the following irreversible environmental changes:

- Alteration of the natural environment as a consequence of the development process. Implementation of the proposed General Plan and near-term facility improvements would represent a commitment of land to OHV use and development of new recreation, administration, and maintenance facilities. This commitment of land resources would be consistent with the current use of the site and would improve the recreation opportunities offered at Heber Dunes SVRA, specifically important for the local community.

- Increased requirements of public services and utilities, which represents a permanent commitment of these resources. As described in Section 3.11, there are adequate utility supplies and availability of services to serve Heber Dunes SVRA with implementation of the proposed General Plan and near-term facility improvements.
- Use of nonrenewable natural resources for construction and operation of facilities per the proposed General Plan and near-term improvements. Resources may include diesel, gasoline, or oil for construction equipment; natural gas, propane, or other fossil fuels used to provide power, heating, and cooling to buildings; and gasoline and oil for OHV operation. The energy consumed in future development and maintenance of Heber Dunes SVRA would be considered a permanent investment. Implementation of the proposed General Plan and near-term facility improvements would not cause the use of fossil fuels at a greater rate than other typical projects or than consumed for agricultural operations immediately surrounding the project site. This impact would be reduced through sustainable practices in site design, construction, maintenance, and operations that are generally practiced by OHMVR Division. Sustainable principals used in design, construction, and management may include the use of a photovoltaic solar electric system for the administration building, the use of nontoxic materials and renewable resources, resource conservation, recycling, and energy efficiency. With implementation of the proposed General Plan and near-term facility improvements, the overall rate of use of renewable natural resources would not substantially increase or result in the depletion of any renewable resource.
- The use of various renewable natural resources, such as water and lumber for construction and operations. Implementation of the proposed General Plan and near-term facility improvements would be a relatively minor consumer of these supplies when compared to other types of development throughout the region. The use of drought-tolerant landscaping would reduce the need for irrigation water consumption. With implementation of the proposed General Plan and near-term facility improvements, the overall rate of use of renewable natural resources would not substantially increase or result in the depletion of any renewable resource.

5.4 **Growth-Inducing Impacts**

As required by State CEQA Guidelines Section 15126.2, this FEIR must discuss ways the project could foster economic or population growth, either directly or indirectly, in the surrounding area. Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place in the absence of the proposed project. A project can be determined to have a growth-inducing impact if it directly or

indirectly removes obstacles to growth or encourages or facilitates other actions considered to be “growth accommodating.” Growth inducement itself is not an adverse environmental effect but may lead to environmental impacts such as increased traffic and noise, degradation of air or water quality, degradation or loss of plant or wildlife habitats, or conversion of agricultural and open space land to urban uses.

The proposed General Plan and near-term facility improvements would not result in the creation of residential development beyond improved on-site housing facilities for park staff and, thus, would not directly facilitate growth in the area. As described above, indirect growth inducement would also not result.

The construction of infrastructure is often considered an action that removes obstacles to growth in an area. The site is currently served by existing roadways, utilities, and public services. All new infrastructure that would be installed with implementation of the proposed General Plan and near-term facility improvements would serve only Heber Dunes SVRA on-site facilities and would not extend off-site or result in service expansions that could serve or accommodate other future development.

Heber Dunes SVRA historically and currently serves as an OHV recreation area and social gathering location for the local community. The proposed General Plan and near-term facility improvements would not change the overall use of the property but, rather, enhance the existing use and recreation opportunities within Heber Dunes SVRA. The improvement of Heber Dunes SVRA would not be expected to attract new residential development or foster economic or population growth.

For these reasons, implementation of the proposed General Plan and near-term facility improvements would not result in primary or secondary environmental effects related to additional growth.

Chapter 6.0 – Alternatives to the Proposed Action

The State CEQA Guidelines require the description and comparative analysis of a range of reasonable alternatives. The guidelines state that the “range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects” (Section 15126.6).

The alternatives analysis evaluates each issue area in comparison to the proposed project, which is the proposed General Plan, as described in Chapter 2. The near-term facility improvements analyzed in this ~~DEIR~~-FEIR would occur regardless of the General Plan alternative selected; thus, any near-term facility improvements impacts are assumed to occur under each alternative. This chapter also includes evaluation of the No Project Alternative, as required by CEQA.

The following three project alternatives are compared in this chapter:

1. No Project Alternative
2. Enhancement of Current Heber Dunes SVRA Alternative
3. Expanded Recreation and Resource Management Alternative

The following discussion is intended to inform the public and decision makers of some of the project alternatives that could be developed and the positive and negative aspects of those alternatives when compared with the proposed General Plan. Section 6.4 summarizes these findings and concludes which alternative is the environmentally superior alternative.

6.1 No Project Alternative

Under the No Project Alternative, there would be no approval of a General Plan for Heber Dunes SVRA and no near-term facility improvements would occur. Heber Dunes SVRA would remain in its current condition, with no improvements or modifications. The structures that are currently on-site would remain in place. OHV recreation and social gathering would continue as they do currently. It is assumed that, due to regional population growth and increasing popularity of OHV use, there would be some future increase in visitation to Heber Dunes SVRA, though no facility improvements would be made to accommodate additional use.

6.1.1 Land Use and Public Policy

The No Project Alternative would not alter the existing land use or activities that currently occur at Heber Dunes SVRA.

OHV recreation and social gathering would continue to occur in a manner similar to the existing use, with some likely increase due to increased population growth. Because the use or condition of the site would not change, no land use capability issues or conflicts would result from this alternative. Land use and public policy impacts for this alternative would be considered similar to those for the proposed General Plan.

6.1.2 Transportation and Traffic

There would be no change to the circulation patterns and access to Heber Dunes SVRA under the No Project Alternative. Visitation to Heber Dunes SVRA is expected to increase in the future due to regional growth and OHV popularity; however, this increase would likely be moderate due to the lack of improved facilities to accommodate large numbers of additional people beyond those who currently use the park. Because on-site facilities would not be expanded or improved, large special events beyond those that currently take place would not be anticipated. For these reasons, traffic generated by visitation to Heber Dunes SVRA would be less than that of the proposed General Plan. Though analysis of the proposed General Plan did not find significant traffic impacts, the No Project Alternative would reduce traffic effects in comparison to the proposed General Plan.

6.1.3 Air Quality

The No Project Alternative would not alter the existing uses at Heber Dunes SVRA and OHV recreation would continue. Without additional trail maintenance, soil conservation measures, or other dust-reducing BMPs as required by the proposed General Plan, air pollutants generated on-site in the form of fugitive dust from windblown erosion would be greater than for the proposed General Plan. However, because no improvements would be made, future visitation would not increase as much under the No Action Alternative; thus, fewer vehicle trips to Heber Dunes and fewer OHV activities would result in fewer air emissions as compared to the proposed General Plan. For these reasons, impacts related to air quality from the No Project Alternative would be considered generally similar when compared to the proposed General Plan.

6.1.4 Noise

The No Project Alternative would not alter the existing land use and activities that currently occur at Heber Dunes SVRA. OHV use and social gathering would continue to occur in a manner similar to the existing use with some increase likely due to population growth. Noise generated on-site, mainly due to OHV use, would continue but be less than the noise generated by increased OHV recreation opportunities under the proposed General Plan. Though analysis of the proposed General Plan did not find significant noise impacts, noise generated by this alternative would be considered less than that of the proposed General Plan.

6.1.5 Agricultural Resources

The No Project Alternative would not alter the current use of Heber Dunes SVRA and the site would continue to be surrounded by agricultural lands. As with the proposed General Plan, continued recreation at Heber Dunes SVRA would not directly convert agricultural lands to urbanized use, indirectly create pressures for the conversion of agricultural land, or conflict or be incompatible with the adjacent agricultural operations. The No Project Alternative would be similar to the proposed General Plan from an agricultural resources perspective.

6.1.6 Visual Resources

The No Project Alternative would not include any improvements or modifications to the existing facilities or environment of Heber Dunes SVRA. There would be no visible change under the No Project Alternative. It is possible that the existing structures on-site would further degrade and become less visually attractive compared to the proposed General Plan, which would construct new facilities and structures. However, because views onto the project site are limited and generally obscured due to vegetation, impacts related to visual resources would be considered similar to the proposed General Plan.

6.1.7 Biological Resources

The No Project Alternative would not actively alter the existing OHV recreation that currently occurs within Heber Dunes SVRA. However, because visitation to Heber Dunes SVRA would likely increase in the future, without the appropriate planning, biological conservation, and resource management offered by the proposed General Plan, it is possible that, under the No Project Alternative, additional biological degradation would occur to on-site vegetation and habitat as OHV users would look to expand the available recreation area as the site becomes more busy and congested. For this reason, the No Project Alternative would result in greater impacts to biological resources compared to the proposed General Plan.

6.1.8 Cultural Resources

The No Project Alternative would not actively alter the existing OHV recreation that currently occurs within Heber Dunes SVRA, but OHV use would potentially encroach into currently undisturbed areas as recreational use of the site increases over time. However, because there is a low potential for significant cultural resources to be found within Heber Dunes SVRA, it is not likely that cultural resources would be affected by OHV activities. Thus, impacts related to cultural resources would be considered similar to the proposed General Plan.

6.1.9 Geology and Soils

Under the No Project Alternative, OHV use and social gathering activities would continue at Heber Dunes SVRA as they currently do. With anticipated increased recreational demand at Heber Dunes SVRA, it is likely that OHV use would potentially encroach into currently undisturbed areas, resulting in increased erosion and degradation of the soil layers. Though soil conservation guidelines issued by CSP and OHMVR Division, as outlined in Section 3.9, would be applicable, future use of the site would not be developed and guided by the conservation measures and requirements of the proposed General Plan. Without future planned development and implementation of management measures per the proposed General Plan, soil impacts would be greater under the No Project Alternative than the proposed General Plan.

6.1.10 Hydrology and Water Quality

The No Project Alternative would not actively alter the existing OHV recreation that currently occurs within Heber Dunes SVRA, but OHV use would potentially encroach into currently undisturbed areas as recreational use of the site increases over time. This could possibly result in increased erosion and decreased water quality. However, because the majority of the site would remain undeveloped and pervious, it is likely that most runoff would be absorbed and sedimentation would settle out within Heber Dunes SVRA. Thus, impacts to water quality and hydrology under the No Project Alternative are considered similar to the proposed General Plan.

6.1.11 Public Services and Utilities

The No Project Alternative would not actively alter the existing OHV recreation and social gathering that currently takes place within Heber Dunes SVRA. It is likely that use of the park may increase over time due to population growth and OHV use popularity, and a slight increase in demand for services may result. However, this increase would be similar to public service needs under the proposed General Plan and impacts would be considered similar.

6.1.12 Recreation

Under the No Project Alternative, the recreation opportunities and facilities offered at Heber Dunes SVRA would remain the same as the current conditions. Management and administration would also remain the same. Without the improvements and enhancements that would occur with implementation of the proposed General Plan, no increased recreational opportunities for the local community would result with the No Project Alternative. However, this would not cause a direct or indirect environmental effect; thus,

impacts related to recreation are considered similar when compared to the proposed General Plan.

6.1.13 Hazardous Materials

Under the No Project Alternative, OHV activity and the associated use of hazardous materials such as oil and gasoline would continue. The storage and use of material such as paints, solvents, and gasoline for maintenance and operations purposes at Heber Dunes SVRA would also continue. As with the proposed General Plan, the continued use, handling, and storage of hazardous materials at Heber Dunes SVRA would be required to comply with all regulatory requirements for safety. For this reason, the No Project Alternative would be similar to the proposed General Plan when considering hazardous material impacts.

6.1.14 Climate Change

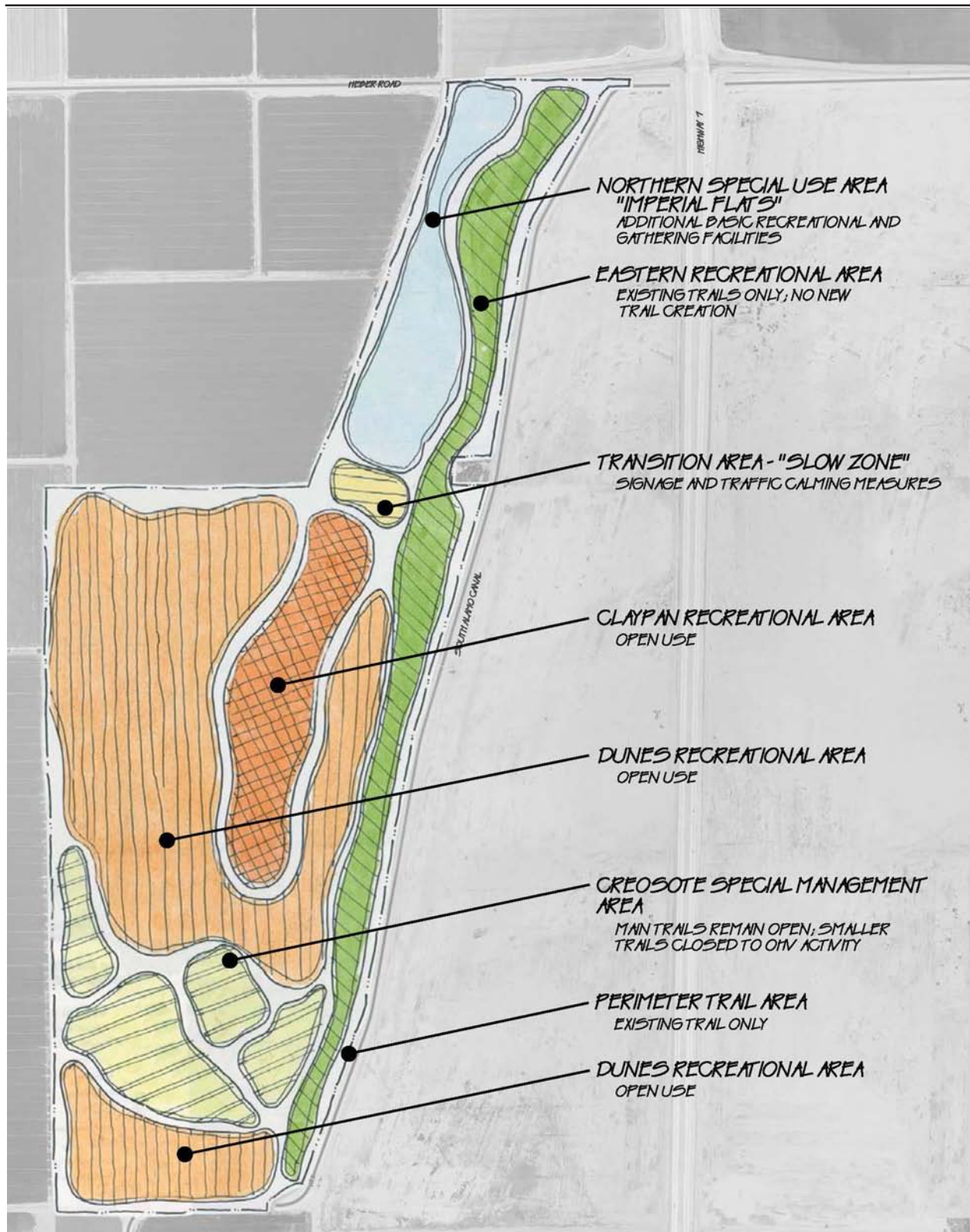
The No Project Alternative would not actively alter the existing OHV recreation and social gathering that currently takes place within Heber Dunes SVRA. It is likely that use of the park may continue to increase over time due to population growth and OHV use popularity. Though implementation of the proposed General Plan would likely generate a higher number of visitors and result in increased GHG emissions from additional travel to Heber Dunes SVRA and more OHV use on-site, the No Project Alternative would not implement policies and guidelines that would serve to reduce overall GHG emissions. For this reason, the No Project Alternative would be similar to the proposed General Plan when considering climate change impacts.

6.2 Enhancement of Current Heber Dunes SVRA Alternative

The Enhancement of Current Heber Dunes SVRA Alternative would be an extension of the pattern of visitor use currently found at Heber Dunes SVRA. Acknowledging that visitors are, for the most part, happy with the current Heber Dunes SVRA experience, this alternative would continue existing visitor use patterns and limit improvements. The management areas defined for this alternative are shown in Figure 6-1 and described below.

Northern Special Use Area: “Imperial Flats”

Under the Enhancement of Current Heber Dunes SVRA Alternative, the Imperial Flats area would remain much as it is currently: a relatively undeveloped open area with pockets of trees and shrubs that provide shade. New features of Imperial Flats may include single and clustered ramadas, barbeque facilities, and fire pits to support social gathering and passive recreational facilities, such as horseshoe pits.



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Figure 6-1
Enhancement of Existing Heber Dunes SVRA Alternative

Transition Area: “Slow Zone”

A Slow Zone would be created in the transition area. The Slow Zone would serve as a transition area between the social gathering area in Imperial Flats and the claypan open use area. Features used to establish the Slow Zone may include signage and traffic calming measures (such as speed bumps or textured surfaces).

Eastern Recreational Area

Open use would be allowed within the Eastern Recreational Area that would extend along the entire eastern boundary of Heber Dunes SVRA. New trails would not be created in this area.

Claypan Recreational Area

Under the Enhancement of Current Heber Dunes SVRA Alternative, the Claypan Recreational Area would be an open use area, meaning that no restrictions would be placed on usage within this area. Some individual and group ramadas would be established within this area.

Dunes Recreational Area

Under the Enhancement of Current Heber Dunes SVRA Alternative, the Dunes Recreational Area would be an open use area. Under this alternative, there would be two independent Dunes Recreational Areas, a large main area throughout the middle portion of the site, and a smaller area in the southernmost portion. The southernmost portion would be accessible via trails in the Eastern Recreational Area and main trails through the Creosote Special Management Area. Some individual and group ramadas would be installed throughout this area.

Perimeter Trail Area

Under the Enhancement of Current Heber Dunes SVRA Alternative, the Perimeter Trail Area would continue to utilize the existing trail route for OHV activity around the outer limits of Heber Dunes SVRA.

Creosote Special Management Area

Under the Enhancement of Current Heber Dunes SVRA Alternative, existing primary trails within the creosote scrub habitat area would remain open, but smaller side trails (secondary and tertiary trails) would be closed to OHV activity. The secondary and tertiary trails essentially bisect the creosote scrub habitat into small individual dune mounds with little or no habitat between them. Under this type of management, implementation of some

restoration on the closed areas would be possible to help protect the soil crust and restore the native understory vegetation and wildlife use.

6.2.1 Land Use and Public Policy

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially alter the existing land use and activities that currently occur at Heber Dunes SVRA. OHV use and social gathering would continue to occur in a manner similar to the existing use, with some increase in visitation due to additional social gathering facilities and increased population growth. Because the overall general use of Heber Dunes SVRA for OHV use and social gathering would not change, no land use capability issues or conflicts would result from this alternative. Land use and public policy impacts for this alternative would be considered similar to those for the proposed General Plan.

6.2.2 Transportation and Traffic

There would be no change to the circulation patterns and access to Heber Dunes SVRA under the Enhancement of Current Heber Dunes SVRA Alternative. Visitation to Heber Dunes SVRA is expected to increase in the future due to regional growth and OHV popularity, as well as facility improvements to better accommodate users. The Enhancement of Current Heber Dunes SVRA Alternative would not provide additional facilities or recreational opportunities that would substantially alter the number of Heber Dunes SVRA visitors in comparison to the proposed General Plan; therefore, traffic generated by visitation to Heber Dunes SVRA under this alternative would be similar to that of the proposed General Plan.

6.2.3 Air Quality

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially modify the existing uses at Heber Dunes SVRA and OHV recreation would continue. Air pollutants generated on-site in the form of fugitive dust from OHV operations and windblown erosion would be similar to that of the proposed General Plan. Trail maintenance, soil conservation measures, and other dust-control BMPs would be implemented similar to the proposed General Plan. For these reasons, impacts related to air quality from the Enhancement of Current Heber Dunes SVRA Alternative would be considered similar when compared to the proposed General Plan.

6.2.4 Noise

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially alter the existing land use and activities that currently occur at Heber Dunes SVRA. OHV recreation and social gathering would continue to occur in a manner similar to the existing use, with some likely increase due to increased population growth and facility

improvements. Noise generated on-site, mainly due to OHV use, would continue and would be generally similar to the noise generated by recreation opportunities under the proposed General Plan. Noise impacts for this alternative would be considered similar as those for the proposed General Plan.

6.2.5 Agricultural Resources

The Enhancement of Current Heber Dunes SVRA Alternative would not alter the current use of Heber Dunes SVRA and the site would continue to be surrounded by agricultural lands. As with the proposed General Plan, continued recreation at Heber Dunes SVRA would not directly convert agricultural lands to urbanized use, indirectly create pressures for the conversion of agricultural land, or conflict or be incompatible with the adjacent agricultural operations. The Enhancement of Current Heber Dunes SVRA Alternative would be similar to the proposed General Plan from an agricultural resources perspective.

6.2.6 Visual Resources

The Enhancement of Current Heber Dunes SVRA Alternative would provide minor improvements and modifications to the existing facilities at Heber Dunes SVRA. New visual elements would include additional picnic ramadas and shade structures throughout the site. These new facilities would be minimal and visually similar to the existing picnic facilities currently located at Heber Dunes SVRA. Visual changes within Heber Dunes SVRA would continue to be limited and generally obscured due to vegetation. For these reasons, the Enhancement of Current Heber Dunes SVRA Alternative would have a minimal effect on the visual environment and impacts related to visual resources would be considered similar to the proposed General Plan.

6.2.7 Biological Resources

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially alter the existing OHV recreation that currently occurs within Heber Dunes SVRA. As outlined above in the Creosote Special Management Area description, OHV use would continue to be allowed in the southern area of Heber Dunes SVRA, which contains the highest quality creosote scrub, arrowweed/saltbrush scrub, and saltbrush scrub habitats on-site. However, the smaller side trails through the southern habitat area would be closed to OHV activity, which would allow for some restoration on the closed areas to help protect the soil crust and restore the native understory vegetation and wildlife use. The OHV activities in this area, including use of designated main trails only, would be similar to those in the proposed General Plan. For this reason, the Enhancement of Current Heber Dunes SVRA Alternative would result in similar impacts to biological resources compared to the proposed General Plan.

6.2.8 Cultural Resources

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially alter the existing OHV recreation that currently occurs within Heber Dunes SVRA. Because there is a low potential for significant cultural resources to be found within Heber Dunes SVRA, it is not likely that cultural resources would be affected by continued OHV activities, especially in areas already disturbed. Thus, impacts related to cultural resources would be considered similar to the proposed General Plan.

6.2.9 Geology and Soils

Under the Enhancement of Current Heber Dunes SVRA Alternative, OHV use and social gathering activities would continue at Heber Dunes SVRA. However, existing and future trails would be managed in accordance with the planning zone guidelines for this alternative. Soil conservation guidelines issued by CSP and OHMVR Division, as outlined in Section 3.9, would be applicable, as well as those implemented through this General Plan alternative. The closure of small and secondary trails through the Creosote Special Management Area would help to reduce potential erosion from the disturbance of the soil layer in this area. For these reasons, soil impacts would be similar under the Enhancement of Current Heber Dunes SVRA Alternative as the proposed General Plan.

6.2.10 Hydrology and Water Quality

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially alter the existing OHV recreation that currently occurs within Heber Dunes SVRA. Similar to the proposed General Plan, conservation measures would be implemented to reduce erosion and sedimentation. The Enhancement of Current Heber Dunes SVRA Alternative would not include construction of any large impervious surfaces, and trails would be managed. The majority of the site would remain undeveloped and pervious, and newly generated runoff would be absorbed and sedimentation would settle out within Heber Dunes SVRA. Thus, impacts to water quality and hydrology under the Enhancement of Current Heber Dunes SVRA Alternative are considered similar to the proposed General Plan.

6.2.11 Public Services and Utilities

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially alter the existing OHV recreation and social gathering that currently takes place within Heber Dunes SVRA. It is likely that use of the park may increase over time due to expanded facilities such as picnic ramadas, population growth, and OHV use popularity, and a slight increase in demand for services may result. The Enhancement of Current Heber Dunes SVRA Alternative would not include any facilities or improvements that would create additional demand beyond what may occur with the proposed General Plan. Therefore, this

increase would be similar to public service needs under the proposed General Plan, and impacts would be considered similar.

6.2.12 Recreation

Under the Enhancement of Current Heber Dunes SVRA Alternative, the recreation opportunities and facilities offered at Heber Dunes SVRA would be enhanced through expanded facilities such as additional picnic areas, clearly designated areas for different OHV use and recreation activities, and improved management and maintenance of the site. The enhanced facilities and management of Heber Dunes SVRA would provide increased recreational opportunities for the local community. Impacts related to recreation are considered to be similar when compared to the proposed General Plan.

6.2.13 Hazardous Materials

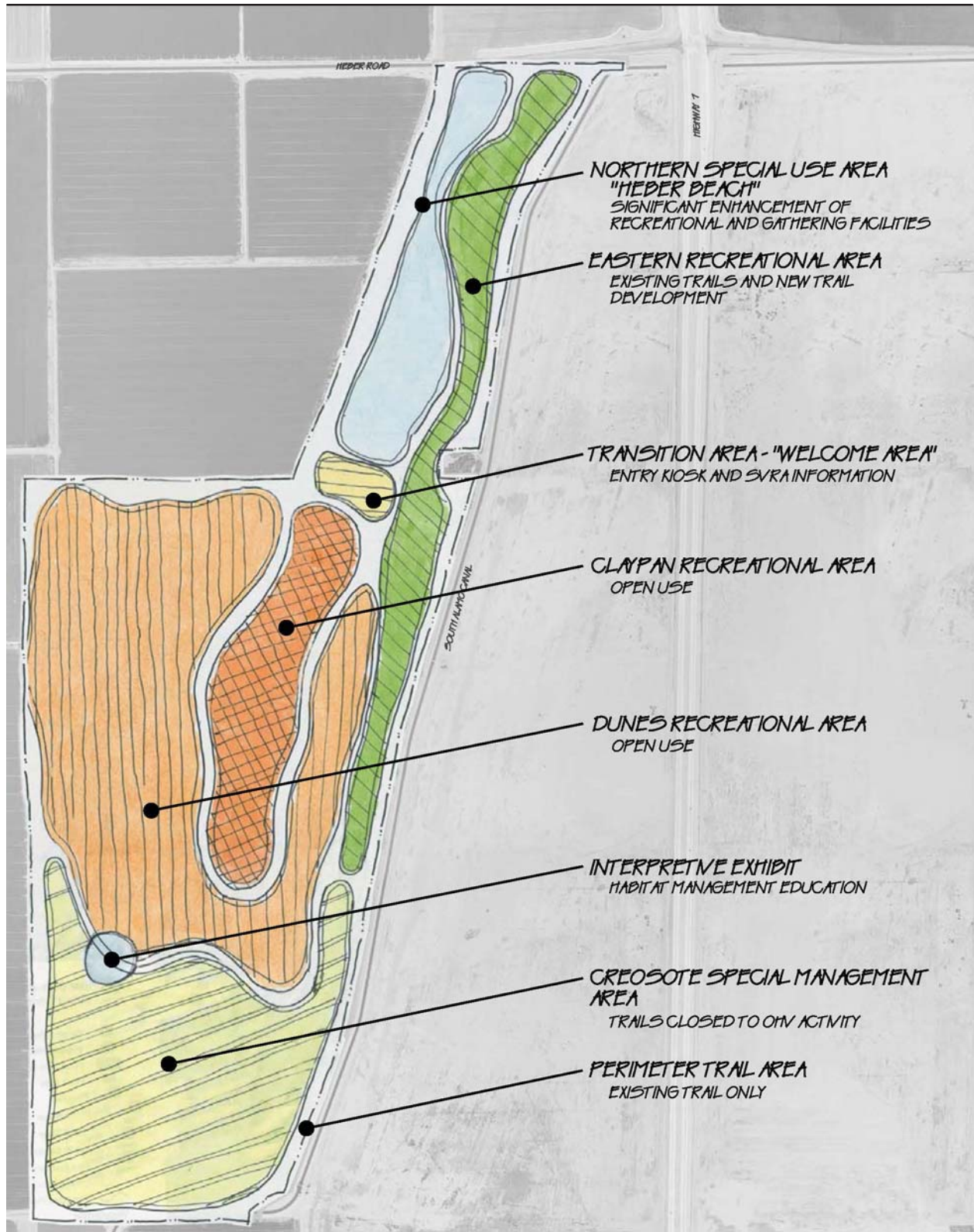
Under the Enhancement of Current Heber Dunes SVRA Alternative, OHV activity and the associated use of hazardous materials such as oil and gasoline would continue. The storage and use of material such as paints, solvents, and gasoline for maintenance and operations purposes at Heber Dunes SVRA would also continue. As with the proposed General Plan, the continued use, handling, and storage of hazardous materials at Heber Dunes SVRA would be required to comply with all regulatory requirements for safety. For this reason, the Enhancement of Current Heber Dunes SVRA Alternative would be similar to the proposed General Plan when considering hazardous material impacts.

6.2.14 Climate Change

The Enhancement of Current Heber Dunes SVRA Alternative would not substantially modify the existing uses at Heber Dunes SVRA. GHG emissions would continue to be generated from vehicle travel, OHV use, and on-site facility operations. Policies and guidelines to reduce GHG emissions would be implemented similar to the proposed General Plan. For these reasons, impacts related to climate change from the Enhancement of Current Heber Dunes SVRA Alternative would be considered similar when compared to the proposed General Plan.

6.3 Expanded Recreation and Resource Management Alternative

The Expanded Recreation and Resource Management Alternative emphasizes the enhancement of both OHV and non-OHV recreational opportunities and greater protection of on-site vegetation and habitat. The management areas defined for this alternative are shown in Figure 6-2 and described below.



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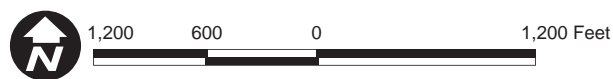


Figure 6-2
Expanded Recreation Facilities and Resource Management Alternative

Northern Special Use Area: “Heber Beach”

Heber Beach would provide opportunities for social gathering and associated recreational opportunities. Under this alternative, Heber Beach is separated from vehicle use areas to create a family-friendly, designated area for non-OHV recreation. Similar to the recreational components described for the Enhancement of Current Heber Dunes SVRA Alternative, single and clustered ramadas, barbeque facilities, and fire pits to support social gathering, and passive recreational facilities, such as horseshoe pits, would be installed in this area. However, this alternative would expand the non-OHV recreation opportunities in the Heber Beach area to also include walking paths with interpretive programming sited to maximize opportunities for shade and a children’s play area. Vehicular access to Heber Beach from Heber Dunes Road would be prohibited to create a pedestrian-friendly environment within Heber Beach. The area would also include a Beginner’s Use Area for adolescents and adults (designed for users 13 years and older).

Transition Area: Welcome Area

A “Welcome Area” would be created in the transition area. An entry kiosk would be located within the Welcome Area. This area would provide a place for visitors to obtain information about Heber Dunes SVRA. The Welcome Area would separate the non-OHV recreational uses in Heber Beach from the open use areas to the south. The separation of uses would enhance the recreation experience in both the OHV and non-OHV use areas.

Eastern Recreational Area

Some unmanaged trails currently exist within the Eastern Recreational Area. Under the Expanded Recreation and Resource Management Alternative, new trail alignments would be created in this area. The new trails would be designed to provide an interesting use experience that capitalizes on existing topography and vegetation. As shown in Figure 6-2, the Eastern Recreational Area would only extend along approximately two-thirds of the eastern boundary and would stop prior to reaching the southern creosote vegetation area.

Claypan Recreational Area

Similar to the proposed General Plan and the Enhancement of Current Heber Dunes SVRA Alternative, in this alternative, the Claypan Recreational Area would be an “open use” area, meaning that no restrictions would be placed on activity within this area. Some individual and group ramadas would be established within this area.

Dunes Recreational Area

The Dunes Recreational Area would be an “open use” area in this alternative, similar to the proposed General Plan. Unlike the Enhancement of Current Heber Dunes SVRA Alternative,

the Dunes Recreational Area for this alternative would include only the large main area throughout the middle portion of the site. Some individual and group ramadas would be installed throughout this area.

Creosote Special Management Area

Management activities associated with the Creosote Special Management Area would be expanded under this alternative. The creosote scrub habitat at the southern end of Heber Dunes SVRA would be closed to OHV activity (see Figure 6-2) to protect this habitat from impacts associated with OHV use. In addition, the saltbush scrub and arrowweed/saltbush scrub habitats located just south of the creosote scrub habitat would also be closed to OHV activity to reduce the potential for users to cut through the creosote scrub habitat to arrive in these southernmost portions of Heber Dunes SVRA. Closing the entire southern area to OHV use would help control entry to the creosote scrub habitat. The perimeter trail would not be affected by the closure of the southern area; use would still be allowed along the entire extent of the perimeter trail.

An interpretive exhibit would be established along the northern border of the Creosote Special Management Area. The exhibit would convey information about Heber Dunes SVRA's natural resources, with an emphasis on the value of the creosote scrub habitat and the effects of human disturbance on this habitat.

6.3.1 Land Use and Public Policy

The Expanded Recreation and Resource Management Alternative would not substantially alter the existing land use and activities that currently occur at Heber Dunes SVRA. OHV use and social gathering would continue to occur, with moderate changes to the location of where usage is allowed. Though the OHV use areas would be more restricted as compared to the proposed General Plan, increase in visitation due to additional social gathering facilities, more non-OHV recreation opportunities, and increased population growth would be expected. However, because the overall general use of Heber Dunes SVRA for OHV recreation and social gathering would not change, no land use capability issues or conflicts would result from this alternative. Land use and public policy impacts for this alternative would be considered similar to those for the proposed General Plan.

6.3.2 Transportation and Traffic

There would be no change to the circulation patterns and access to Heber Dunes SVRA under the Expanded Recreation and Resource Management Alternative. Visitation to Heber Dunes SVRA is expected to increase in the future due to regional growth and OHV popularity, as well as facility improvements to better accommodate users. The Expanded Recreation and Resource Management Alternative would not provide facilities or

recreational opportunities that would substantially alter the number of Heber Dunes SVRA visitors in comparison to the proposed General Plan. Therefore, traffic generated by visitation to Heber Dunes SVRA under this alternative would be similar to that of the proposed General Plan.

6.3.3 Air Quality

Under the Expanded Recreation and Resource Management Alternative, a greater portion of Heber Dunes SVRA would be devoted to non-OHV recreation opportunities and resource management, including the entire southern portion of the site and the Heber Beach Area. The condensed area available for OHV use may reduce the amount of OHV activity on-site compared to the proposed General Plan, thus reducing the associated amount of OHV emissions and fugitive dust generated. Trail maintenance, soil conservation measures, and other dust-related BMPs would be implemented similar to the proposed General Plan. For these reasons, the Expanded Recreation and Resource Management Alternative would result in less generation of pollutants, and air quality impacts would be considered less than with the proposed General Plan.

6.3.4 Noise

For the Expanded Recreation and Resource Management Alternative, a greater portion of Heber Dunes SVRA would be devoted to non-OHV recreation opportunities and resource management, which may reduce the amount of OHV activity on-site as compared to the proposed General Plan. Noise generated on-site, mainly due to OHV use, would continue, though it may be slightly less than with the proposed General Plan. Though analysis of the proposed General Plan did not find significant noise impacts, the noise generated by this alternative would be considered less than that of the proposed General Plan.

6.3.5 Agricultural Resources

The Expanded Recreation and Resource Management Alternative would not substantially alter the current use of Heber Dunes SVRA and the site would continue to be surrounded by agricultural lands. As with the proposed General Plan, continued recreation at Heber Dunes SVRA would not directly convert agricultural lands to urbanized use, indirectly create pressures for the conversion of agricultural land, or conflict or be incompatible with the adjacent agricultural operations. The Expanded Recreation and Resource Management Alternative would be similar to the proposed General Plan from an agricultural resources perspective.

6.3.6 Visual Resources

The Expanded Recreation and Resource Management Alternative would provide improvements and modifications to the existing facilities at Heber Dunes SVRA. New visual elements would include additional picnic ramadas and shade structures throughout the site and a new entry kiosk. These new facilities would be minimal and visually similar to the existing picnic facilities currently located at Heber Dunes SVRA. OHV use would not be allowed in the southern portion of the site, and this area would be managed for restoration of the natural vegetation. Visual changes within Heber Dunes SVRA would continue to be limited and generally obscured due to vegetation. For these reasons, the new visual elements associated with the Expanded Recreation and Resource Management Alternative would have a minimal effect on the visual environment, and impacts related to visual resources would be considered similar to the proposed General Plan.

6.3.7 Biological Resources

The Expanded Recreation and Resource Management Alternative would alter the existing OHV recreation that currently occurs within Heber Dunes SVRA. As outlined above in the Creosote Special Management Area description, OHV use would no longer be allowed in the southern area of Heber Dunes SVRA, which contains the highest quality creosote scrub, arrowweed/saltbrush scrub, and saltbrush scrub habitats on-site. The Eastern Recreational Area would also end prior to the start of the vegetation. The perimeter trail would continue to allow access around the entire boundary of Heber Dunes SVRA, but no entry into the southern habitat would be allowed. The closure of the southern creosote habitat area would help protect and restore the vegetation, restore the native understory, and provide enhanced habitat for wildlife use. Compared to the proposed General Plan, which would allow continued OHV use through the Creosote Special Management Area, the Expanded Recreation and Resource Management Alternative would result in fewer impacts to biological resources.

6.3.8 Cultural Resources

The Expanded Recreation and Resource Management Alternative would restrict existing OHV recreation compared to the current Heber Dunes SVRA. Because there is a low potential for significant cultural resources to be found within Heber Dunes SVRA, it is not likely that cultural resources would be affected by continued OHV activities, especially in areas already disturbed. Thus, impacts related to cultural resources would be considered similar to the proposed General Plan.

6.3.9 Geology and Soils

Under the Expanded Recreation and Resource Management Alternative, OHV use and social gathering activities would continue at Heber Dunes SVRA. Existing and future trails would be managed in accordance with the planning zone guidelines for this alternative. Similar to the proposed General Plan, soil conservation guidelines issued by CSP and OHMVR Division, as outlined in Section 3.9, would be applicable, as would those implemented through this alternative. The closure of the entire Creosote Special Management Area would allow for restoration of the habitat and protection of the crusty soil layer throughout this area. This would essentially eliminate potential erosion from the disturbance of the soil layer in this area. For these reasons, soil impacts would be less under the Expanded Recreation and Resource Management Alternative as compared to the proposed General Plan.

6.3.10 Hydrology and Water Quality

The Expanded Recreation and Resource Management Alternative would limit the extent of OHV recreation that currently occurs within Heber Dunes SVRA. Similar to the proposed General Plan, conservation measures would be implemented to reduce erosion and sedimentation. The Expanded Recreation and Resource Management Alternative would not include construction of any large impervious surfaces, and trails would be managed. The majority of the site would remain undeveloped, pervious and newly generated runoff would be absorbed, and sedimentation would settle out within Heber Dunes SVRA. Thus, impacts to water quality and hydrology under the Expanded Recreation and Resource Management Alternative are considered similar to those under the proposed General Plan.

6.3.11 Public Services and Utilities

The Expanded Recreation and Resource Management Alternative would modify the existing OHV use areas and provide enhanced social gathering opportunities within Heber Dunes SVRA. It is likely that use of the park may increase over time due to the expanded social gathering facilities (such as picnic armadas), population growth, and OHV use popularity, and a slight increase in demand for public services may result. The Expanded Recreation and Resource Management Alternative would not include any significant facilities or improvements that would create additional demand beyond what may occur with the proposed General Plan. Therefore, this increase would be similar to public service needs under the proposed General Plan and impacts would be considered similar.

6.3.12 Recreation

Under the Expanded Recreation and Resource Management Alternative, the recreation opportunities and facilities offered at Heber Dunes SVRA would be modified and enhanced.

Modifications to the available OHV use areas would result with the closure of the southern Creosote Special Management Area and restricted recreation in the HBA. Heber Beach would be focused on social gathering and non-OHV recreational opportunities, with expanded facilities such as clustered ramadas, barbeque facilities, horseshoe pits, walking paths with interpretive programming, and a children's play area. Though modifications would result with the Expanded Recreation and Resource Management Alternative, the expanded facilities and overall management of Heber Dunes SVRA would provide enhanced recreational opportunities for the local community. Impacts related to recreation are considered to be similar when compared to the proposed General Plan.

6.3.13 Hazardous Materials

Under the Expanded Recreation and Resource Management Alternative, OHV activity and the associated use of hazardous materials such as oil and gasoline would continue. The storage and use of material such as paints, solvents, and gasoline for maintenance and operations purposes at Heber Dunes SVRA would also continue. As with the proposed General Plan, the continued use, handling, and storage of hazardous materials at Heber Dunes SVRA would be required to comply with all regulatory requirements. For this reason, the Expanded Recreation and Resource Management Alternative would be similar to the proposed General Plan when considering hazardous material impacts.

6.3.14 Climate Change

The Expanded Recreation and Resource Management Alternative would not substantially modify the existing uses at Heber Dunes SVRA. GHG emissions would continue to be generated from vehicle travel, OHV use, and on-site facility operations. Policies and guidelines to reduce GHG emissions would be implemented similar to the proposed General Plan. For these reasons, impacts related to climate change from the Expanded Recreation and Resource Management Alternative would be considered similar when compared to the proposed General Plan.

6.4 Alternatives Comparison Summary

Table 6-1 summarizes the findings from the alternatives evaluation. CEQA requires that an EIR identify the environmentally superior alternative from among the alternatives and the proposed project. The environmentally superior alternative causes the fewest or least significant environmental impacts compared to the proposed project. As shown in Table 6-1, the Expanded Recreation and Resource Management Alternative would cause fewer impacts related to air quality, biological resources, and geology and soils compared to the proposed General Plan (though the proposed General Plan does not result in significant impacts to these issue areas). For this reason, the Expanded Recreation and Resource Management Alternative is considered to be the environmentally superior alternative.

TABLE 6-1. COMPARISON OF PROPOSED GENERAL PLAN AND ALTERNATIVES

Issue Area	No Project Alternative	Enhancement of Current Heber Dunes SVRA Alternative	Expanded Recreation and Resource Management Alternative
Land Use and Policy Planning	Similar	Similar	Similar
Traffic and Transportation	Less	Similar	Similar
Air Quality	Similar	Similar	Less
Noise	Less	Similar	Less
Agricultural Resources	Similar	Similar	Similar
Visual Resources	Similar	Similar	Similar
Biological Resources	Greater	Similar	Less
Cultural Resources	Similar	Similar	Similar
Geology and Soils	Greater	Similar	Less
Hydrology and Water Quality	Similar	Similar	Similar
Public Services and Utilities	Similar	Similar	Similar
Recreation	Similar	Similar	Similar
Hazardous Materials	Similar	Similar	Similar
Climate Change	Similar	Similar	Similar

Greater = alternative results in greater impacts than the proposed General Plan

Less = alternative results in fewer impacts than the proposed General Plan

Similar = alternative results in impacts similar to the proposed General Plan

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Chapter 7.0 – Public Comment

This chapter contains copies of the comment letters received on the DEIR during the public review period from August 26, 2011 to October 10, 2011. A list of those who commented is provided below. The comment letters have been individually numbered, and a corresponding written response by the OHMVR Division as lead agency to each substantive comment is provided.

Comment Letters

(Received during the public review period from August 26 through October 10, 2011)

Public Agencies

Letter A – Imperial County Air Pollution Control District

Letter B – Imperial Irrigation District

Letter C – Colorado River Board of California

Letter D – Department of Toxic Substances Control

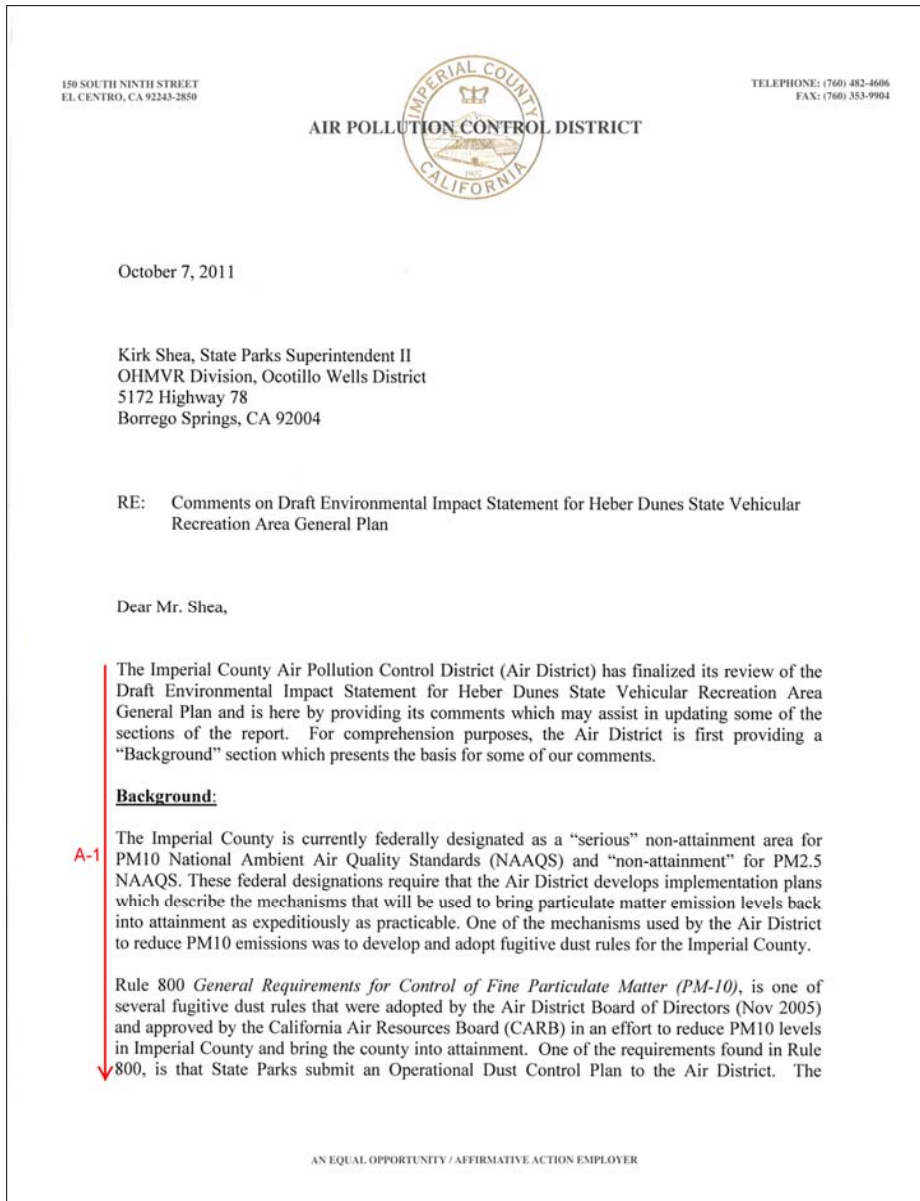
Letter E – State Clearinghouse

Late Comment Letters

(Received after the close of public review period)

Public Agencies

Letter F – California Department of Fish and Game (received October 27, 2011)



Letter A
Imperial County Air Pollution Control District (APCD)

A-1 This comment provides introductory comments and background information summarizing recent fugitive dust rulings.

A-1

The Imperial County Air Pollution Control District (Air District) has finalized its review of the Draft Environmental Impact Statement for Heber Dunes State Vehicular Recreation Area General Plan and is here by providing its comments which may assist in updating some of the sections of the report. For comprehension purposes, the Air District is first providing a "Background" section which presents the basis for some of our comments.

Background:

The Imperial County is currently federally designated as a "serious" non-attainment area for PM10 National Ambient Air Quality Standards (NAAQS) and "non-attainment" for PM2.5 NAAQS. These federal designations require that the Air District develops implementation plans which describe the mechanisms that will be used to bring particulate matter emission levels back into attainment as expeditiously as practicable. One of the mechanisms used by the Air District to reduce PM10 emissions was to develop and adopt fugitive dust rules for the Imperial County.

Rule 800 *General Requirements for Control of Fine Particulate Matter (PM-10)*, is one of several fugitive dust rules that were adopted by the Air District Board of Directors (Nov 2005) and approved by the California Air Resources Board (CARB) in an effort to reduce PM10 levels in Imperial County and bring the county into attainment. One of the requirements found in Rule 800, is that State Parks submit an Operational Dust Control Plan to the Air District. The

Operational Dust Control Plan identifies sources of PM10 emissions within their jurisdiction as well as dust control measures that can be implemented to help minimize or eliminate those emissions.

A-1 cont Nevertheless, on February 3, 2010 the US.EPA published in the Federal Register a notice proposing Limited Approval and Limited Disapproval of Regulation VIII Dust Rules. Most recently, on July 8, 2010, the U.S. EPA finalized its proposed Limited Approval and Limited Disapproval of revisions to the Imperial County Air Pollution Control District portion of the California State Implementation Plan under the Clean Air Act as amended in 1990. In the rulemaking U.S. EPA concluded that PM10 emissions from open areas such, as the Imperial Sand Dunes, are significant sources of PM10 which require Best Available Control Measures (BACM).

Air District Comments

A-2 1. On page 2-30 section 2-7, Special states "Such special events may include, but would not be limited to, OHV promotions or demonstrations, OHV events or races, concerts, community and cultural events, and gatherings, sports events, and receptions." Therefore, the Air District would like to rule in the side of caution, and request that the project proponent notify the Air District prior to any organized special event to ensure the project/operations comply with applicable Air District rules and permits.

A-3 2. On page 3.3-8 section Regulation III Rules states that "...APCD will classify the project as commercial/nonprofit, and under that classification, the project will be exempt from paying those fees." However, the project proponent must submit t a Rule 310 application and site plan where the Air District will determine and approve the exemption.

A-4 3. On page 3.3-9 should also state that BLM should notify the Air District of the development of renewable energy projects as such projects also have the potential of creating dust emissions which might exceed the Air District's construction and operational thresholds.

A-5 4. On page 3.3-13 states " Temporary and permanent criteria pollutant emissions for the proposed project were calculated using URBEMIS2007 version 9.2.8...."However, the Air District would like to point out the most current modeling tool recently adopted is CalEEMod that this model is used for all future modeling.

A-6 5. Page 3.3-22, should also reference the thresholds found in Imperial County CEQA Air Quality Handbook section 7 – Mitigation Measures.

A-7 In conclusion, the Air District looks forward to continue working collectively with the California State Parks to ensure proper and economically feasible dust control measures are in place. If you have any questions regarding the comments above, please do not hesitate to contact me at (760) 482-4606.

A-2 The APCD will be notified when a Heber Dunes SVRA special event permit process requires CEQA analysis that includes public review. Additionally, as part of the special event permit process, the applicant is required to obtain all necessary permits, including any required APCD permits. OHMVR Division will continue to work with APCD in implementing appropriate dust control measures.

A-3 OHMVR Division acknowledges the Rule 310 application process as described in the comment. OHMVR Division will comply and properly complete the Rule 310 application process with APCD. The results of the Rule 310 application process would not change the analysis or conclusions identified in the EIR.

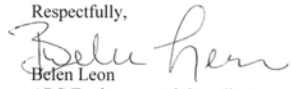
A-4 On page 3.3-9, the BLM discussion was provided as an example and was not meant to be all-inclusive of their responsibilities. OHMVR Division acknowledges the additional information provided in this comment regarding BLM's responsibility to notify APCD of renewable energy projects; however, this additional information was not added to the EIR as it does not change or influence the analysis or conclusions of the air quality analysis or implementation of the proposed project, and the OHMVR Division has no jurisdiction or authority over BLM.

A-5 The comment is correct that the Draft EIR air quality analysis used URBEMIS2007 version 9.2.8, which was the current model available at the time the air quality analysis began. As requested in the comment, the most current modeling tool will be used for future modeling.

A-6 Text has been added to the Final EIR to include reference to the APCD's Imperial County Air Pollution Control District's CEQA Air Quality Handbook regarding fugitive dust emission control measures.

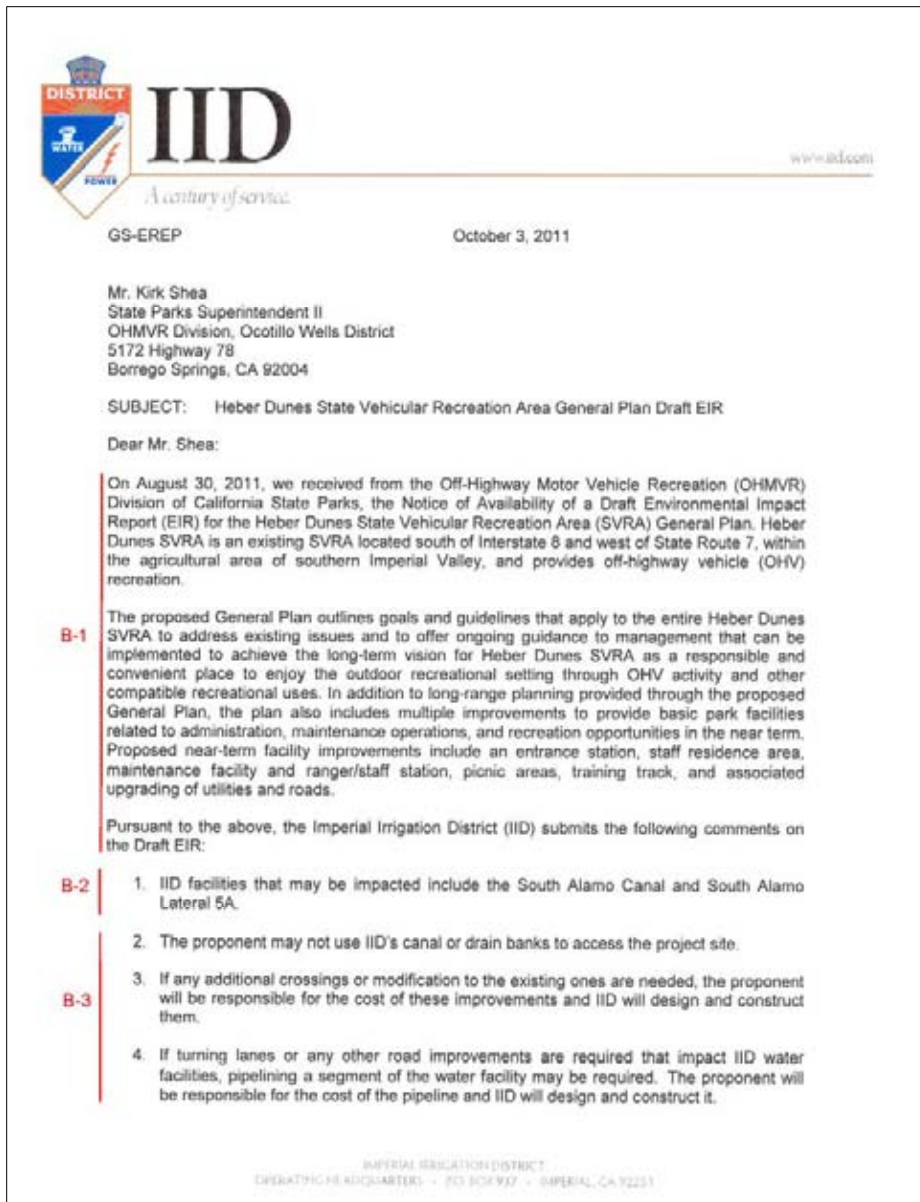
A-7 Thank you for your comments on the Draft EIR. OHMVR Division will continue to coordinate and work with APCD.

Respectfully,



Belen Leon
APC Environmental Coordinator

CC: Brad Poiriez
Monica Soucier



**Letter B
Imperial Irrigation District (IID)**

- B-1 This comment provides introductory statements and a summary of the project.
- B-2 OHMVR Division acknowledges IID facilities within and adjacent to the site including the South Alamo Canal and the South Alamo Lateral A5 as stated in the comment. At this time, there would be no anticipated impacts to South Alamo Canal and South Alamo Lateral 5A with implementation of the General Plan.
- B-3 If any access, modifications, or request to use IID facilities were to be required in the future, OHMVR Division would coordinate with IID to obtain all necessary permits and authorizations and be responsible for the cost of the improvements.

- B-4 | 5. Fences should be installed at the boundary of IID's right of way for safety and allow access for IID operation and maintenance activities.
- B-5 | 6. Any construction or operation on IID property or within its existing and proposed right of way or easements will require an encroachment permit, including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities. A copy of the encroachment permit application is included in the IID's Developer Project Guide 2008. The guide can be accessed at the following web site: <http://www.iid.com/Modules/ShowDocument.aspx?documentid=2328>. Also, instructions for the completion of encroachment applications can be found at <http://www.iid.com/Modules/ShowDocument.aspx?documentid=2335>. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits.
- B-6 | 7. Any new, relocated, upgraded or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or upgrade of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully mitigated. **Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.**
- B-7 | Should you have any questions, please do not hesitate to contact me by phone at 760-482-3609 or by e-mail at dvargas@iid.com. Thank you for the opportunity to comment on this matter.

Respectfully,

 Donald Vargas
 Environmental Specialist

Carlos Villalon -- Manager, Water Dept.
 Mike L. King -- Manager, Water Dept.
 Jeff M. Garber -- General Counsel
 Juan Carlos Sandoval -- Asst. Mgr. Energy Dept.
 Joel Ivy -- Asst. Mgr. Energy Dept.
 Carlton L. King -- Asst. Mgr., Energy Dept. Customer Service Operations
 Tina Shields -- Asst. Mgr., Water Dept. Resources Planning & Management
 David L. Barajas -- General Supt., Energy Dept. System Planning & Engineering
 Michael S. Trump -- General Supt., Energy Dept. Customer Operations & Planning
 Ismael Gomez -- Chief Engineer, Water Dept. Engineering Services
 Bruce Wilcox -- Environ. Prog. Mgr., Water Dept. QSA Water Transfer
 James P. Kelley -- Supervisor, Real Estate & Right-of-Way
 Vikki Dee Bradshaw -- Asst. Supv., Environmental Management

- B-4 OHMVR Division does not consider additional fencing necessary along IID rights-of-way for adequate Heber Dunes SVRA operation or safety. Access for IID operation and maintenance is always maintained and this would continue with implementation of the project. Should such a project be proposed in the future, OHMVR Division will coordinate with IID.
- B-5 OHMVR Division recognizes the permit process that would be required if project construction or operation were to take place on IID property or easements. If an encroachment permit were to be required, all appropriate procedures would be followed.
- B-6 Proposed near-term facility improvements include possible modifications to the pump house that provides water to the Heber Dunes SVRA from the IID South Alamo Canal. This project is included and analyzed within the EIR in Section 2.2.6 of the EIR. No other potential impacts to IID facilities have been identified in the short term. No specific impacts to IID facilities are known in the long term based on the General Plan. If future facilities or projects proposed under the General Plan were to require modifications to IID facilities, OHMVR Division would be responsible for the appropriate environmental analysis, mitigation, and associated costs.
- B-7 Thank you for your comments on the Draft EIR. OHMVR Division looks forward to continued coordination with IID.

STATE OF CALIFORNIA - THE NATURAL RESOURCES AGENCY
COLORADO RIVER BOARD OF CALIFORNIA
770 FAIRMONT AVENUE, SUITE 100
GLENDALE, CA 91203-1068
(818) 500-1625
(818) 543-4655 FAX

EDMUND G. BROWN, JR., Governor



September 28, 2011

*Dear
10/10/11
E*



State Clearinghouse
1400 Tenth Street
P.O. Box 3044
Sacramento, CA 95812-3044

Regarding SCH# 2010-011-067: Notice of Completion & Environmental Document Transmittal for the Environmental Impact Report (EIR) for the Heber Dunes State Vehicle Recreational Area Draft General Plan, Imperial County, California

To Whom It May Concern:

C-1 The Colorado River Board of California (CRB) has received and reviewed a copy of Notice of Completion & Environmental Document Transmittal for the Environmental Impact Report (EIR) for the Heber Dunes State Vehicle Recreational Area (SVRA) Draft General Plan, Imperial County, California.

C-2 At this juncture, the CRB has determined that it has no comments regarding the Notice. Regarding any potential water use in the Heber Dunes SVRA, the CRB urges the project proponent to check with the Imperial Irrigation District (IID) regarding any requirements that IID may have.

If you have any questions, please feel free to contact me, or Dr. Jay Chen of my staff, at (818) 500-1625.

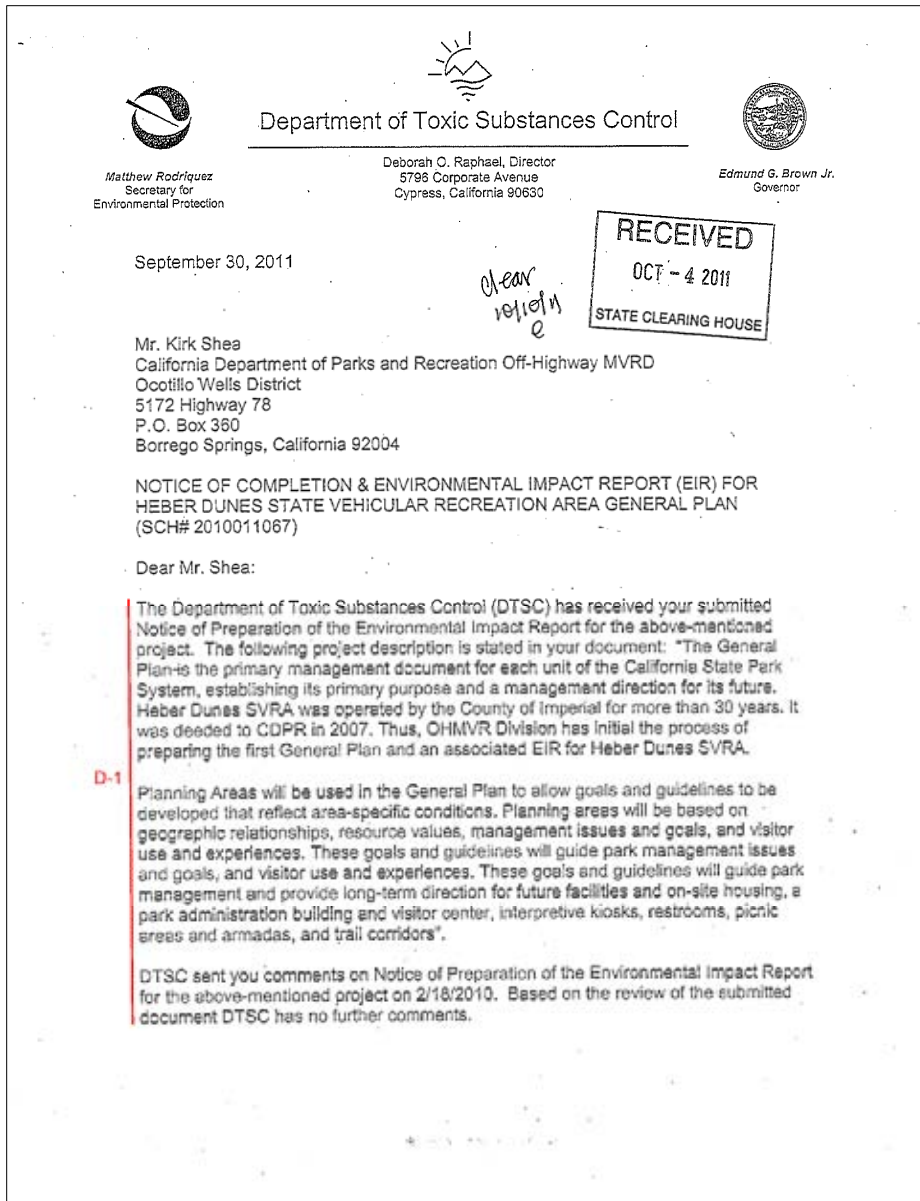
Sincerely,

CS Harris
Christopher S. Harris
Acting Executive Director

cc: Mr. Michael L. King, Manager, Water Department, Imperial Irrigation District

Letter C
Colorado River Board of California

- C-1 These paragraphs provide an introduction to the letter and state that the Colorado River Board has no comments at his time.
- C-2 As suggested by the comment, the Imperial Irrigation District has been provided notice of this project and submitted a comment letter, identified as Letter B in these responses to comments.



**Letter D
Department of Toxic Substances Control**

D-1 This comment provides introductory statements and notes that the Department of Toxic Substances Control has no additional comments beyond those provided in their previous comment letter addressing the Notice of Preparation. Additional clarifying language has been added to the Final EIR to specify that OHMVR Division protocol requires notification of the appropriate agencies when a hazardous material spill occurs or unknown hazardous materials are discovered.

September 30, 2011

Mr. Kirk Shea
California Department of Parks and Recreation Off-Highway MVRD
Ocotillo Wells District
5172 Highway 78
P.O. Box 360
Borrego Springs, California 92004

NOTICE OF COMPLETION & ENVIRONMENTAL IMPACT REPORT (EIR) FOR
HEBER DUNES STATE VEHICULAR RECREATION AREA GENERAL PLAN
(SCH# 2010011067)

Dear Mr. Shea:

The Department of Toxic Substances Control (DTSC) has received your submitted Notice of Preparation of the Environmental Impact Report for the above-mentioned project. The following project description is stated in your document: "The General Plan is the primary management document for each unit of the California State Park System, establishing its primary purpose and a management direction for its future. Heber Dunes SVRA was operated by the County of Imperial for more than 30 years. It was deeded to CDPR in 2007. Thus, OHMVR Division has initial the process of preparing the first General Plan and an associated EIR for Heber Dunes SVRA.

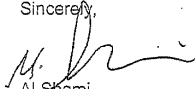
D-1 Planning Areas will be used in the General Plan to allow goals and guidelines to be developed that reflect area-specific conditions. Planning areas will be based on geographic relationships, resource values, management issues and goals, and visitor use and experiences. These goals and guidelines will guide park management issues and goals, and visitor use and experiences. These goals and guidelines will guide park management and provide long-term direction for future facilities and on-site housing, a park administration building and visitor center, interpretive kiosks, restrooms, picnic areas and armadas, and trail corridors".

DTSC sent you comments on Notice of Preparation of the Environmental Impact Report for the above-mentioned project on 2/18/2010. Based on the review of the submitted document DTSC has no further comments.

Mr. Kirk Shea
September 30, 2011
Page 2

If you have any questions regarding this letter, please contact me at ashami@dtsc.ca.gov, or by phone at (714) 484-5472.

Sincerely,



Al Shami
Project Manager
Brownfields and Environmental Restoration Program

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
state.clearinghouse@opr.ca.gov

CEQA Tracking Center
Department of Toxic Substances Control
Office of Environmental Planning and Analysis
P.O. Box 806
Sacramento, California 95812
nritter@dtsc.ca.gov

CEQA # 3325



Edmund G. Brown Jr.
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Ken Alex
Director

October 11, 2011

Kirk Shea
California State Parks OHMVR Division, Ocotillo Wells District
5172 Highway 78
P.O. Box 360
Borrego Springs, CA 92004

Subject: Heber Dunes State Vehicular Recreation Area General Plan
SCH#: 2010011067

Dear Kirk Shea:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on October 10, 2011, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

E-1

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Letter E
State Clearinghouse

E-1 This letter states that the State Clearinghouse review requirements for draft environmental documents pursuant to CEQA have been met, and the review period closed on October 10, 2011. The two comment letters received by the State Clearinghouse from the Colorado River Board of California and Department of Toxic Substances Control have been individually responded to as Letter C and Letter D, respectively.

**Document Details Report
State Clearinghouse Data Base**

SCH# 2010011067
Project Title Heber Dunes State Vehicular Recreation Area General Plan
Lead Agency Parks and Recreation, Department of

Type EIR Draft EIR
Description Heber Dunes SVRA offers a unique recreational experience in that it is located within several miles of Imperial Valley's population centers and provides an intimate recreational experience in a family-friendly atmosphere. Because Heber Dunes SVRA is relatively small, consisting of 340 acre as compared to other off-highway vehicle (OHV) recreational areas in the region and is open for day use only, most users are from the local area. There are a limited number of developed facilities to support recreation opportunities within Heber Dunes SVRA; the majority of the site is dedicated to open sand dune and trail use. Existing recreation-supporting facilities include a ranger/staff area with a residence, a ranger/staff office and workshop/tool area, a parking area for Off-Highway Motor Vehicle Recreation (OHMVR) Division vehicles, a public restroom facility, and picnic facilities.

Lead Agency Contact

Name Kirk Shea
Agency California State Parks OHMVR Division, Ocotillo Wells District
Phone 760 767-1329 **Fax**
email kshea@parks.ca.gov
Address 5172 Highway 78
 P.O. Box 360
City Borrego Springs **State** CA **Zip** 92004

Project Location

County Imperial
City
Region
Lat / Long
Cross Streets SR 7 and Heber Road
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways SR 7, 98
Airports
Railways
Waterways Alamo River, South Alamo Canal
Schools
Land Use Currently used for off-highway-vehicle recreation. Designated by CA State Parks as a State Vehicular Recreation Area

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Geologic/Seismic; Noise; Public Services: Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 6; Office of Historic Preservation; Department of Water Resources; California Highway Patrol; Caltrans, District 11; Air Resources Board, Transportation Projects; Regional Water Quality Control Board, Region 7; Department of Toxic Substances Control; Native American Heritage Commission; State Lands Commission; Colorado River Board

Date Received 08/25/2011 **Start of Review** 08/25/2011 **End of Review** 10/10/2011

Note: Blanks in data fields result from insufficient information provided by lead agency.



State of California - The Natural Resources Agency
 DEPARTMENT OF FISH AND GAME
 Inland Deserts Region
 78-078 Country Club Drive, Ste. 109
 Bermuda Dunes, CA 92203
www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
 CHARLTON H. BONHAM, Director



October 11, 2011

Kirk Shea
 California Department of Parks and Recreation Off-Highway MVRD
 Ocotillo Wells District
 P.O. Box 360
 Borrego Springs, CA 92004

Subject: Heber Dunes State Vehicular Recreation Area General Plan (SCH #2010011067)
 Environmental Impact Report

Dear Mr. Shea:

F-1 The California Department of Fish and Game (Department) appreciates the opportunity to comment on the Heber Dunes State Vehicular Recreation Area General Plan (SCH # 2010011067) Environmental Impact Report (EIR). The General Plan is the primary management document for each unit of the California State Park System, establishing its primary purpose and a management direction for its future. Heber Dunes SVRA was operated by the County of Imperial for more than 30 years. It was deemed to California Department of Parks and Recreation in 2007. The majority of the site is dedicated to open sand dune and trail use. Existing recreation-supporting facilities include a ranger/staff area with a residence, a ranger/staff office and workshop/tool area, a parking area for Off-Highway Motor Vehicle Recreation (OHMVR) Division vehicles, a public restroom facility, and picnic facilities.

F-2 The proposed project site is located in potential habitat for the western burrowing owl (*Athene cunicularia*). This species is designated as California Species of Special Concern. Section 15380 of the California Environmental Quality Act (CEQA) requires the lead agency to treat sensitive species as though they were listed, if the species meets the criteria for listing described in the section. The Department believes that the proposed project could further the decline of the above sensitive species. This species must be treated as though it were listed and appropriate avoidance, mitigation, and compensation for impacts need to be identified.

Preconstruction surveys of suitable habitat for western burrowing owl should be conducted within 30 days prior to any ground-disturbing activities within the project area. Mitigation should be consistent with the 1995 Department Staff Report on Burrowing Owl Mitigation (attached) and should involve consultation with the Department prior to implementation. Because there is a possibility of direct impacts to burrowing owls, the Department recommends that potential area(s) for artificial burrow construction is identified within the EIR.

F-3 The proposed project site is located in potential habitat for migratory birds, which are protected under Fish and Game code 3513. The Department believes that the proposed project could negatively impact nesting migratory birds. Preconstruction surveys of suitable

Conserving California's Wildlife Since 1870

Letter F
California Department of Fish and Game
(received after close of public review)

F-1 This comment provides introductory comments and background information summarizing Heber Dunes history as an OHV park owned and operated by Imperial County and its subsequent acquisition by California State Parks and operation as an SVRA under the management of OHMVR Division. OHMVR Division began managing Heber Dunes in 1998 under a lease and assumed fee ownership in 2007. The introductory comments also address the overall management purpose of the proposed General Plan and the existing recreation and support facilities.

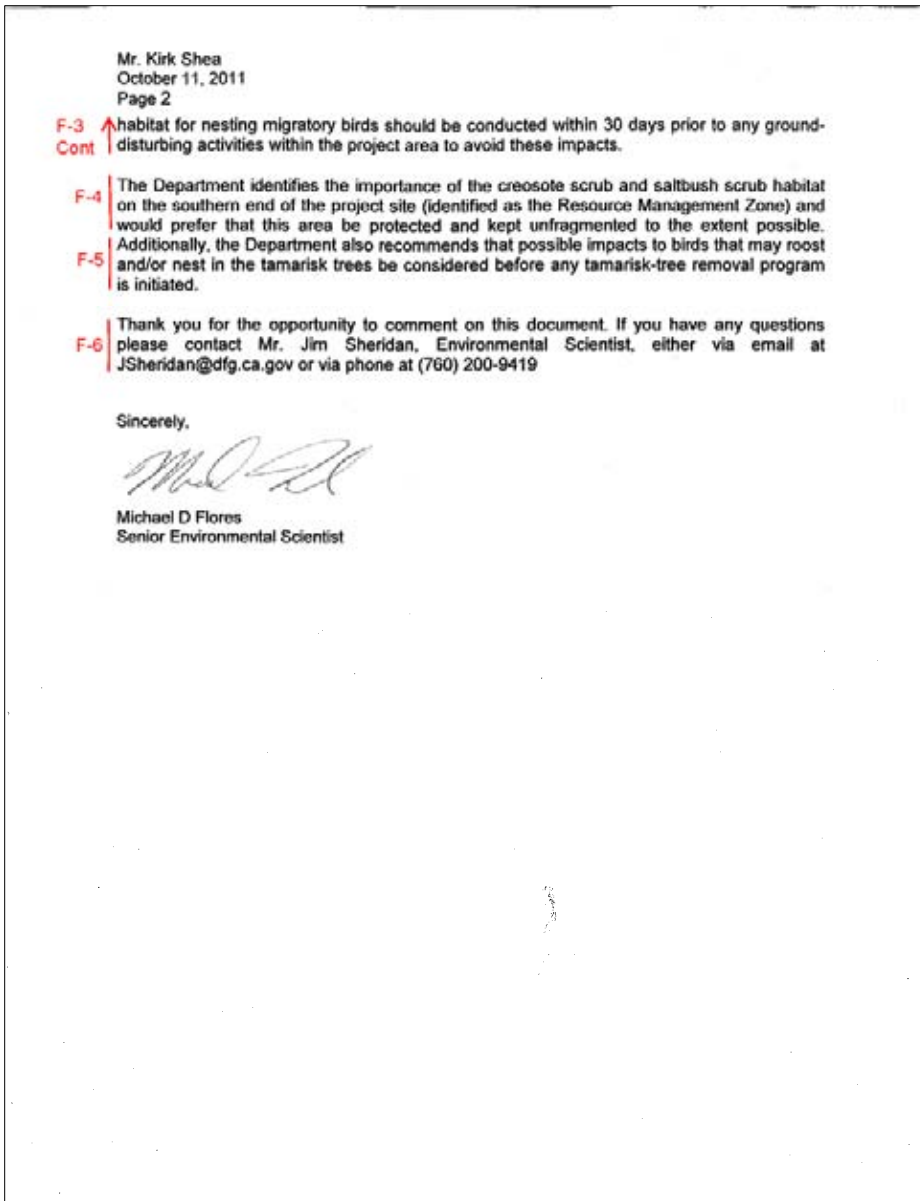
F-2 While the western burrowing owl (*Athene cunicularia*) has been observed in the surrounding agricultural areas, the species has only been observed in the Heber Dunes SVRA a few times in the saltbush scrub and arrowweed scrub areas. The areas where the owls have been previously documented are within the Resource Management Zone, which has the most restrictive rules and regulation to ensure the highest resource protection. Approval of the proposed General Plan will change this area from open use to trails only and provide greater management direction within this area. However, OHMVR Division concurs with the comment that there is potential impact to this species, and the EIR identifies this impact as Biology-1a (General Plan) and Biology-1b (near-term facility improvements). NPR Guideline 1.4 requires that surveys and inventories of sensitive biological resources, including western burrowing owls, be conducted in areas subject to development. To provide additional avoidance and protection for this species, Mitigation Measure Biology-1 is included in the EIR. As suggested by the comment letter, this mitigation measure requires consultation with CDFG if western burrowing owls are present within a construction or operation area. The Ocotillo Wells District Environmental Scientist would provide initial monitoring of the site and,

as specified, consult with CDFG to determine which course of action, such as avoidance of breeding season, burrow exclusion, collapsing of burrows, creation of artificial burrows, or other measures would be recommended. Suitable habitat for artificial burrows exists within the Resource Management Zone. If deemed necessary, artificial burrows would be constructed in this designated area with the precise locations to be determined in consultation with CDFG. Consultation with CDFG will ensure that all appropriate and applicable guidelines and agency recommendations regarding western burrowing owl are followed.

- F-3 At Heber Dunes SVRA, most of the potential habitat for nesting migratory birds is found within the areas included in the Resource Management Zone where habitat fragmenting will be reduced from the existing condition and resource protection will be maximized per the goals and policies of the proposed General Plan. The only exception is the potential nesting habitat that is associated with the tamarisk trees that occur throughout Heber Dunes SVRA. As noted in the proposed General Plan (page 74), tamarisk vegetation, while nonnative and invasive, provides significant areas of valuable shade and reduces fugitive dust and thus, removal of tamarisk vegetation is not specifically proposed as part of the General Plan.

On page 3.7-4, the EIR identifies that nesting birds may be present within Heber Dunes SVRA; this could include protected migratory birds. As stated in the EIR, goals and policies of the proposed General Plan serve to adequately require protection of sensitive avian species and reduce potential impacts to below a level of significance. These polices include:

NPR Guideline 1.4: Prepare and conduct surveys and inventories of natural resources in areas subject to development where sensitive biological resources are expected to occur based on monitoring efforts. These



sensitive biological resources could include creosote scrub habitat, western burrowing owl, or other sensitive species identified under future monitoring efforts. Use survey and inventory results to guide adaptive management decisions.

NPR Guideline 1.5: If any sensitive biological resources are found within the areas that would be affected by the proposed activities, plan and design such activities to avoid or mitigate potential impacts during construction and post-construction periods.

NPR Guideline 1.6: In the event that some disturbance to sensitive biological resources is unavoidable, appropriate measures to offset those impacts will be identified and implemented in consultation with a qualified biologist and the appropriate resource agency.

- F-4 OHMVR Division acknowledges the important biological resources in the southernmost portion of Heber Dunes SVRA and has designated that area as the Resource Management Zone as noted in the comment. As detailed in the General Plan and EIR, the Resource Management Zone has the most restrictive rules and regulations of all the planning zones to ensure resource protection. OHV access would only be allowed on identified trails to minimize habitat disturbance and fragmentation.
- F-5 Please see response to comment F-3 above regarding the removal of tamarisk and the policies included in the proposed General Plan to reduce potential impacts due to disturbance of biological resources.
- F-6 Thank you for your comments on the Draft EIR. OHMVR Division will continue to coordinate and work with CDFG.

Chapter 8.0 – Mitigation Monitoring and Reporting Plan and CEQA Findings

This chapter contains the mitigation monitoring and reporting plan (MMRP) as adopted by the OHMVR Commission on December 1, 2011. The MMRP provides a monitoring and reporting method to ensure the measures imposed to mitigate or avoid significant environmental effects are fully executed. Also included in this chapter are the CEQA Findings of Fact as made by the OHMVR Commission on December 1, 2011.

8.1 Mitigation Monitoring and Reporting Plan

The policies and guidelines developed for the Heber Dunes SVRA General Plan were specifically designed with consideration for the natural resources and sensitive environmental elements within and surrounding the project site. Thus, implementation of the General Plan would serve to minimize or avoid potentially significant adverse environmental effects through the Plan's Vision, Goals, and Guidelines.

This Mitigation Monitoring and Reporting Plan (MMRP) has been prepared pursuant to CEQA Guidelines (California Code of Regulations, Title 14), which state the following:

“In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency, [here, the OHMVR Division] shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects.” (CEQA Guidelines §15097(a))

“The public agency may choose whether its program will monitor mitigation, report on mitigation, or both. ‘Reporting’ generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. ‘Monitoring’ is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and reporting and the program best suited to ensuring compliance in any given instance will usually involve elements of both.” (CEQA Guidelines §15097 (c))

Table 8-1 lists the potentially significant impacts and proposed mitigation measures identified in the Environmental Impact Report (EIR). Table 1 also describes the timing of implementation of the mitigation measures (i.e., when the measure will be implemented);

the parties responsible for ensuring implementation of the measures; and, for monitoring the mitigation measures.

TABLE 8-1. MITIGATION MONITORING AND REPORTING TRACKING

<u>Impact</u>	<u>Mitigation Measure</u>	<u>Implementation Responsibility and Timing</u>	<u>Monitoring Responsibility</u>	<u>Verified Implementation</u>
<u>Biology 1a and 1b: Project construction or operation has the potential to result in significant impacts to western burrowing owl.</u>	<u>Mitigation Measures Biology-1: In the event that western burrowing owls are discovered within a construction area or in an area that interferes with operation and management of Heber Dunes SVRA, the California Department of Fish and Game (CDFG) will be consulted to determine the proper course of action, which may include avoidance or measures such as limiting construction to the nonbreeding season, burrow exclusion outside of the breeding season, collapsing of excluded burrows, and the creation of artificial burrows.</u>	<u>Implementation Responsibility: OHMVR Division Timing: Continual, ongoing observation. Immediate contact with CDFG if western burrowing owls are discovered onsite, in construction or operation areas.</u>	<u>Monitoring Responsibility: OHMVR Division</u>	<u>Initials: _____ Date: _____</u>

According to CEQA Guidelines Section 15126.4 (a) (2), "Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments." Therefore, the OHMVR Division will consider whether to adopt the mitigation measures when it considers whether to approve the project.

8.2 CEQA Findings of Fact

8.2.1 Statutory Requirements for Findings

Section 21081 of CEQA and Section 15091 of the State CEQA Guidelines, prohibit project approval unless the public agency makes one or more written findings for each of the significant effects identified in the EIR, accompanied by a brief explanation of the rationale for each finding.

The possible findings are:

1. Changes or alterations have been made in, or incorporated into, the project which avoid or substantially lessen the significant effects as identified in the Final EIR.
2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

In addition, CEQA requires a public agency to make a finding that the EIR reflects the public agency's independent review and judgment. In accordance with the provisions of CEQA and the Guidelines, the California State Parks OHMVR Commission expressly finds that the FEIR for Heber Dunes State Vehicular Recreation Area General Plan reflects the OHMVR Commission's independent review, analysis, and judgment.

The FEIR for Heber Dunes State Vehicular Recreation Area General Plan identifies significant or potentially significant environmental effects prior to mitigation, which may occur as a result of approval of the proposed project. In accordance with the provisions of CEQA and the Guidelines, the OHMVR Commission adopts these Findings as part of its certification of FEIR.

8.2.2 Findings Regarding Significant Effects

Pursuant to Section 15091 of the State CEQA Guidelines, the OHMVR Commission finds that, for each of the significant effects identified in the FEIR, changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen (mitigate) each of the significant environmental effects as identified in the FEIR. No significant and unavoidable impacts would result from the project. The impacts and

mitigation measures are stated fully in the FEIR. The following are brief explanations of the rationale for this finding for each impact.

Two potentially significant impacts regarding biological resources and were identified within the FEIR. The significant impacts (Biology 1a and 1b) and required mitigation (Mitigation Measure Biology-1) are detailed below.

Biological Resources

Impact Biology 1a: Due to the high probability for western burrowing owl to occur within Heber Dunes State Vehicular Recreation Area (SVRA), project construction or operation of future General Plan actions has the potential to result in significant impacts to western burrowing owl.

Mitigation Measure Biology 1a: In the event that western burrowing owls are discovered within a construction area or in an area that interferes with operation and management of Heber Dunes SVRA, California Department of Fish and Game (CDFG) will be consulted to determine the proper course of action, which may include avoidance or measures such as limiting construction to the nonbreeding season, burrow exclusion outside of the breeding season, collapsing of excluded burrows, and the creation of artificial burrows.

Rationale for Finding

Implementation of Mitigation Measure Biology-1a would avoid or substantially lessen impacts to western burrowing owls if they were to be found within areas of construction or operation activities resulting from implementation of the General Plan for Heber Dunes SVRA. If the species were found, CDFG would be contacted and consulted with to determine the most appropriate course of action to avoid impacts to the owls. Multiple effective measures are available for impact avoidance of this species and their burrows and would be determined through consultation with CDFG.

Impact Biology 1b: Due to the high probability for western burrowing owl to occur within Heber Dunes SVRA, project construction or operation of near-term facility improvements has the potential to result in significant impacts to western burrowing owl.

Mitigation Measure Biology 1b: In the event that western burrowing owls are discovered within a construction area or in an area that interferes with operation and management of Heber Dunes SVRA, CDFG will be consulted to determine the proper course of action, which may include avoidance or measures such as limiting

construction to the nonbreeding season, burrow exclusion outside of the breeding season, collapsing of excluded burrows, and the creation of artificial burrows.

Rationale for Finding

Implementation of Mitigation Measure Biology-1b would avoid or substantially lessen impacts to western burrowing owls if they were to be found within areas of construction or operation activities resulting from implementation of the near-term facility improvements at Heber Dunes SVRA. If the species were found, CDFG would be contacted and consulted with to determine the most appropriate course of action to avoid impacts to the owls. Multiple effective measures are available for impact avoidance of this species and their burrows and would be determined through consultation with CDFG.

8.2.3 Findings Regarding Less than Significant Effects

With the exception of the significant biological resource impact identified above, the FEIR analysis found no additional significant impacts that would result with implementation of the proposed project. Because there were no significant impacts identified for these resource areas, no mitigation measures beyond established OHMVR Division policies and the Heber Dunes SVRA General Plan Guidelines are required. The issue areas that were found to have less than significant effects are listed below:

- Land Use and Public Policy
- Transportation and Traffic
- Air Quality
- Noise
- Agricultural Resources
- Visual Resources
- Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Public Services and Utilities
- Recreation
- Hazardous Materials
- Climate Change

8.2.4 Findings Regarding No Potential Significant Effects

The following issue areas were found to have no potential for significant environmental effects resulting from implementation of the proposed project.

- [Mineral and Energy Resources](#)
- [Population and Housing](#)
- [Paleontological Resources](#)

8.2.5 Location and Custodian of Documents

Chapter 9.0, References, of the FEIR contains a list of all references used in preparation of the environmental analysis. The reference materials are located at the OHMVR Division Ocotillo Wells District Office, which serves as the custodian of the documents constituting the record of proceedings upon which the OHMVR Commission has based its decision related to the project. The contact for this material is:

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Chapter 79.0 – References

79.1 Written Sources

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Chapter 810.0 – Report Contributors

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Eric Hollenbeck, Senior Environmental Scientist
Margaret Kress, Assistant State Archaeologist
Vic Herrick, Supervising State Park Ranger (Heber Dunes SVRA)
Deborah Burgeson, Webmaster, OHMVR Division
Don Solleder, GIS Research Analyst II
Jennifer Parker, Associate State Archaeologist

AECOM – EIR and Cultural Report

Michael Page, Associate Principal
Joan Isaacson, Senior Project Manager
Jessica Sisco, Project Manager
Kara Friedman, Project Manager
Valarie Yruretagoyena, Senior Environmental Analyst
Scott McMillan, Senior Botanist/Restoration Ecologist
Amy Gardner, Water Quality Analyst
Poonam Boparai, Environmental Engineer – Air Quality & Climate Change
Rose Mamaghani, Air Quality and Environmental Noise Specialist
Bill Maddux, Environmental Engineer – Noise
Stacey C. Jordan, Ph.D., RPA, Senior Archaeologist
Cheryl Bowden-Renna, Archaeologist
Shweta Shah, GIS Specialist

Fehr & Peers – Traffic Analysis

Patrick Son, Senior Engineer

Wright Environmental Services, Inc. – Geology Report and Phase I ESA

John Lynch, President
Christopher M. Palmer, Engineering Geologist

End of FEIR

Appendix A
Notice of Preparation and Comments



NOTICE OF PREPARATION

Preparation of an Environmental Impact Report for the Heber Dunes State Vehicle Recreation Area General Plan

AND

Announcement of a Public Scoping Meeting

- Date:** January 19, 2010
- To:** State Clearinghouse, Responsible and Trustee Agencies, and Interested Individuals and Organizations
- Subject:** Notice of Preparation of an Environmental Impact Report for the Heber Dunes State Vehicle Recreation Area General Plan
- Lead Agency:** California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division
Ocotillo Wells District
5172 Highway 78
P.O. Box 360
Borrego Springs, CA 92004
Contact: Kirk Shea, State Parks Superintendent II
- Consultant:** AECOM
1420 Kettner Boulevard, Suite 500
San Diego, CA 92101
Phone: (619) 233-1454
Contact: Joan Isaacson, Senior Project Manager

The California Department of Parks and Recreation (CDPR), as Lead Agency, is preparing a General Plan and associated Environmental Impact Report (EIR) for the Heber Dunes State Vehicle Recreation Area. CDPR has prepared this Notice of Preparation (NOP) pursuant to Section 15082 of the California Environmental Quality Act (CEQA) Guidelines. This NOP informs agencies and the public that an EIR is being prepared to address the impacts to the natural resources and the human environment from implementation of a proposed General Plan for the Heber Dunes State Vehicle Recreation Area (SVRA). Additional information about the Heber Dunes SVRA General Plan process, including documents synthesizing initial research and analysis, is available at the project website (http://www.parks.ca.gov/?page_id=26033).

An NOP that included the Heber Dunes SVRA General Plan EIR was previously distributed on December 12, 2007, under the title, "Notice of Preparation: Preparation of an Environmental Impact Report for the Truckhaven/Desert Cahuilla and Ocotillo Wells General Plan." The December 12, 2007, NOP announced preparation of one EIR for one General Plan that would have applied to the following three land management units:

1. Ocotillo Wells SVRA (approximately 85,000 acres)
2. Truckhaven/Desert Cahuilla area (approximately 12,000 acres)
3. Heber Dunes SVRA (approximately 380 acres)

CDPR subsequently determined that a separate General Plan and associated EIR would be prepared for each land management unit. Thus, this NOP informs agencies and the public that an EIR is being prepared to address implementation of the proposed General Plan for the Heber Dunes SVRA. Separate NOPs will be issued for the following land management units: Truckhaven/Desert Cahuilla area and the Ocotillo Wells SVRA.

The Heber Dunes SVRA General Plan project vicinity is shown in Figure 1. The project description, location, and possible environmental effects are discussed in this NOP.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but no later than 30 days after receipt of this notice. Please send your written responses, including the name of a contact person, to the following:

Contact: Kirk Shea, State Parks Superintendent II
California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division
Ocotillo Wells District
5172 Highway 78
P.O. Box 360
Borrego Springs, CA 92004
Phone: (760) 767-1329
Email: kshea@parks.ca.gov

PROJECT TITLE

Heber Dunes State Vehicle Recreation Area General Plan

PROJECT LOCATION

Heber Dunes SVRA is an off-highway vehicle (OHV) park operated by the Off-Highway Motor Vehicle Recreation Division (OHMVR Division) of CDPR. The Heber Dunes SVRA is located within unincorporated Imperial County, situated approximately 10 miles southeast of the City of El Centro. The SVRA is located south of Interstate 8, near the border with Mexico. The Heber Dunes SVRA encompasses roughly 343 acres of sand dunes within a region largely dominated by agriculture. Figure 1 shows the project vicinity.

PROJECT DESCRIPTION

The General Plan is the primary management document for each unit of the California State Park System, establishing its primary purpose and a management direction for its future. Heber Dunes was operated by the County of Imperial for more than 30 years. It was deeded to CDPR in 2007. Thus, OHMVR Division has initiated the process of preparing the first General Plan and an associated EIR for the Heber Dunes SVRA.

Preparation of the General Plan is in its early stages, so ultimate land use and resource management provisions have not yet been determined. Initial General Plan research and analysis efforts have included existing conditions research, public outreach, and identification of issues and opportunities. Based on the results of this effort, Planning Alternatives were developed to illustrate scenarios for how Heber Dunes SVRA may be improved over the long-term. A draft Preferred Alternative has been generated based on evaluation of the Planning Alternatives by CDPR staff and the public (see Figure 2). A Preferred Alternative is a conceptual land use plan that will be used to prepare the General Plan. Documents presenting a synthesis of initial General Plan research and analysis efforts are available at the Heber Dunes SVRA General Plan project website (http://www.parks.ca.gov/?page_id=26033).

Preliminary “use areas” have been established as part of the planning process (Figure 2). These preliminary use areas have been established based on geographic relationships, resource values, management issues and goals, and visitor use and experiences. Goals and guidelines will be developed to refine the management intentions for each use area within the SVRA.

Park Housing Area

This area would include facilities to support on-site staff housing and oversight of the park.

Entrance Use Area

The focus of this area is to provide adequate circulation along the SVRA entrance road, wayfinding assistance, and information about responsible OHV use.

Heber Beach Activity Area

Heber Beach would be separated from other uses to create an area suitable for social gathering and passive recreation. Features of Heber Beach may include shade structures, barbeque facilities, fire pits, passive recreational facilities such as horseshoe pits, walking paths, and a “slow riding zone.”

Eastern Recreation Area

New trail alignments may be created within this area to provide an interesting riding experience that capitalizes on existing topography and vegetation.

Welcome Area

The Welcome Area would provide a place for visitors to obtain information about the SVRA and would formally introduce the CDPR presence at the SVRA. Focused policies and guidelines would be developed for the Welcome Area Overlay that would guide the development of future facilities and amenities toward welcoming visitors to the SVRA.

Claypan Recreational Area

The Claypan Recreational Area would be an “open riding” area, meaning that no restrictions would be placed on riding within this area. Opportunities would also be provided for other compatible forms of recreation and social gathering.

Dunes Recreational Area

The Dunes Riding Area would be an “open riding” area. Opportunities would also be provided for other compatible forms of recreation and social gathering.

Interpretive Exhibit Area

An interpretive exhibit would be established within this area to convey information about Heber Dunes’ natural resources.

Resource Management Area

This area has been identified as a Resource Management Area because it contains the highest quality creosote scrub habitat within the SVRA. Only identified trails within this area would be available for OHV activity. Some creosote scrub restoration efforts could occur within this area.

Perimeter Trail Area

The Perimeter Trail Area would be established to preserve the existing route that visitors use to ride OHVs around the outer limits of the SVRA.

General Plan Topics

Topics that are being considered as part of the General Plan process include, but are not limited to, the following:

- Physical, biological, and aesthetic resources
- Land use and facilities
- Visitor use and experiences
- Operation and maintenance functions
- Planning influences, such as regional population projections and public input
- Motorized and nonmotorized recreational trends, opportunities, and constraints
- Access and circulation
- Law enforcement and public safety
- Education and interpretation opportunities

ENVIRONMENTAL IMPACTS

Although ultimate use areas and associated goals and guidelines have not yet been determined, generally expected types of environmental impacts that may occur as a result of implementation of the General Plan and continued recreational use of the property can be identified. Based on the resource characteristics of the project area and generally anticipated recreation uses, potential environmental effects that will be addressed in the EIR include effects to the following resource areas:

- Air quality, including dust generation and control
- Biological resources, including, but not limited to, burrowing owl
- Geological and paleontological resources
- Hydrology and water quality
- Land use and management
- Noise
- Public services and utilities
- Transportation
- Potential for global climate change effects

INTENDED USES OF THE EIR

CDPR will use the EIR to consider the environmental effects, mitigation measures, and alternatives when reviewing the proposed General Plan approval. The Off-Highway Motor Vehicle Recreation Commission will use the EIR to support decisions made related to its respective administration jurisdictions. The EIR will serve as the CEQA compliance document for adoption of the General Plan. It will also serve as the programmatic environmental document that may be referenced in implementing future actions included in the General Plan. Subsequent project-level activities identified in the General Plan will be examined in light of the program EIR to determine whether an additional environmental document must be prepared prior to project approval and implementation (State CEQA Guidelines 15168[c]).

Attachment: Figure 1: Project Location Vicinity Map
Figure 2: Draft Preferred Alternative



California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division
Ocotillo Wells District
5172 Highway 78
P.O. Box 360
Borrego Springs, CA 92004

February 6, 2010

Attention: Kirk Shea, State Park Superintendent II

Dear Mr. Shea

Re: Preparation of an Environmental Impact Report for the Heber Dunes Vehicular
Recreation Area General Plan

The areas mentioned, in your maps and descriptions, include known archaeological sites. It is recommended that all Federal, State and County Regulations for Cultural Resources be followed.

CVAS thanks you for allowing us to comment on this matter and will be interested in future information on up-dates to these plans.

Very truly yours, *Julia Weaver*

Julia Weaver, acting environmental co-ordinator.

H: 760-345-0185



California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division
Ocotillo Wells District
5172 Highway 78
P.O.Box 360
Borrego Springs, CA 92004

February 18, 2010

Attention: Kirk Shea, State Park Superintendent II

Dear Mr. Shea

Re: Preparation of an Environmental Impact Report for the Heber Dunes Vehicular
Recreation Area General Plan
Amendment to letter date February 6, 2010.

There are known sites within the general area, not necessarily in the specific area mentioned in your maps and descriptions. The known sites are along the Alamo River, to the east of this particular area. What you have done, regarding your survey, fits with our recommendations that all Federal, State and County Regulations for Cultural Resources be followed.

CVAS thanks you for allowing us to comment on this matter and will be interested in future information on up-dates to these plans.

Very truly yours,

A handwritten signature in cursive script that reads 'Julia Weaver'. The signature is written in black ink and is positioned to the right of the typed name 'Julia Weaver'.

Julia Weaver, acting environmental co-ordinator.

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net



January 27, 2010

Mr. Kirk Shea, State Park Superintendent II

CALIFORNIA DEPARTMENT OF PARKS & RECREATION: OCOTILLO WELLS DISTRICT

5172 Highway 78; P.O. Box 360
Borrego Springs, CA 92004

Ms. Joan Isaacson, Senior Project Manager

AECOM

1420 Kettner Boulevard, Suite 500
San Diego, CA 92101

Re: SCH#2010011067 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Heber Dunes State Vehicular Recreation Area General Plan Project; located south of the City of Holtville and south of Interstate 8, on part of the Los Algodones Sand Dunes; Imperial County, California

Dear Mr. Shea and Ms. Isaacson:

The Native American Heritage Commission (NAHC) is the state 'trustee agency' pursuant to Public Resources Code §21070 for the protection and preservation of California's Native American Cultural Resources.. (Also see *Environmental Protection Information Center v. Johnson (1985) 170 Cal App. 3rd 604*) The California Environmental Quality Act (CEQA - CA Public Resources Code §21000-21177, amended in 2009) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE)', and if so, to mitigate that effect. To adequately assess the project-related impacts on historical resources, the Commission recommends the following.

The Native American Heritage Commission did perform a Sacred Lands File (SLF) search in the NAHC SLF Inventory, established by the Legislature pursuant to Public Resources Code §5097.94(a) and Native American Cultural resources were not identified within one-half mile of the APE. There are, however, Native American cultural resources in close proximity to the APE.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts. A Native American Tribe or Tribal Elder may be the only source of information about a cultural resource.. Also, the NAHC recommends that a Native American Monitor or Native American culturally knowledgeable person be employed whenever a professional archaeologist is employed during the 'Initial Study' and in other phases of the environmental planning processes.. Furthermore we suggest that you contact the California Historic Resources

Information System (CHRIS) at the Office of Historic Preservation (OHP) Coordinator's office (at (916) 653-7278, for referral to the nearest OHP Information Center of which there are 11..

Consultation with tribes and interested Native American tribes and individuals, as consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f] *et seq*), 36 CFR Part 800.3, the President's Council on Environmental Quality (CSQ; 42 U.S.C. 4371 *et seq*) and NAGPRA (25 U.S.C. 3001-3013), as appropriate. .

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

The authority for the SLF record search of the NAHC Sacred Lands Inventory, established by the California Legislature, is California Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10). The results of the SLF search are confidential. However, Native Americans on the attached contact list are not prohibited from and may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance" may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity.

CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.

Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the California Code of Regulations (CEQA Guidelines) mandate procedures to be followed, including that construction or excavation be stopped in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery until the county coroner or medical examiner can determine whether the remains are those of a Native American. . Note that §7052 of the Health & Safety Code states that disturbance of Native American cemeteries is a felony.

Again, Lead agencies should consider avoidance, as defined in §15370 of the California Code of Regulations (CEQA Guidelines), when significant cultural resources are discovered during the course of project planning and implementation

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,


Dave Singleton
Program Analyst

Attachment: List of Native American Contacts

cc: state clearinghouse

Native American Contacts
Imperial County
January 27, 2010

Ewiiapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road Kumeyaay
Alpine, CA 91901
wmicklin@leaningrock.net
(619) 445-6315 - voice
(619) 445-9126 - fax

Kumeyaay Cultural Heritage Preservation
Paul Cuero
36190 Church Road, Suite 5 Diegueno/ Kumeyaay
Campo, CA 91906
chairman@campo-nsn.gov
(619) 478-9046
(619) 478-9505
(619) 478-5818 Fax

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
PO Box 1120 Diegueno
Boulevard, CA 91905
(619) 478-2113
619-478-2125

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas
P.O. Box 775 Diegueno -
Pine Valley, CA 91962
(619) 709-4207

Manzanita Band of Kumeyaay Nation
Leroy J. Elliott, Chairperson
PO Box 1302 Kumeyaay
Boulevard, CA 91905
(619) 766-4930
(619) 766-4957 Fax

Fort Yuma Quechan Indian Nation
Mike Jackson, Sr., President
PO Box 1899 Quechan
Yuma, AZ 85366
qitpres@quechantribe.com
(760) 572-0213
(760) 572-2102 FAX

Campo Kumeyaay Nation
Monique LaChappa, Chairperson
36190 Church Road, Suite 1 Kumeyaay
Campo, CA 91906
MLaChappa@campo-nsn.
(619) 478-9046
(619) 478-5818 Fax

Ewiiapaayp Tribal Office
Will Micklin, Executive Director
4054 Willows Road Kumeyaay
Alpine, CA 91901
wmicklin@leaningrock.net
(619) 445-6315 - voice
(619) 445-9126 - fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106, and federal NAGPRA.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2010011067; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Heber Dunes State Vehicular Recreation Area General Plan; located south of the City of Holtville and Interstate 8 on part of the Los Algodones Sand Dunes; Imperial County, California.

Native American Contacts
Imperial County
January 27, 2010

Campo Kumeyaay Nation
ATTN: Fidel Hyde, EPA Supervisor
36190 Church Road, Suite 1 Kumeyaay
Campo , CA 91906
(619) 478-9369
(619) 478-5818 Fax

Quenchan Indian Nation
Bridget Nash-Chrabascz, THPO
P.O. Box 1899 Quechan
Yuma , AZ 85366
b.nash@quechantribe.com
(928) 920-6068 - CELL
(760) 572-2423

Cocopah Museum
Jill McCormick, Tribal Archaeologist
County 15th & Ave. G Cocopah
Sommerton , AZ 85350
culturalres@cocopah.com
(928) 530-2291 - cell
(928) 627-2280 - fax

Ah-Mut-Pipa Foundation
Preston J. Arrow-weed
P.O. Box 160 Quechan
Bard , CA 92222 Kumeyaay
(928) 388-9456

ahmut@earthlink.net

Augustine Band of Cahuilla Mission Indians
Karen Kupcha
P.O. Box 846 Cahuilla
Coachella , CA 92236
(760) 369-7171
916-369-7161

Manzanita Band of the Kumeyaay Nation
Nick Elliott, Cultural Resources Coordinator
P.O. Box 1302 Kumeyaay
Boulevard , CA 91905
(619) 766-4930
(619) 925-0952 - cell
(919) 766-4957

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106, and federal NAGPRA.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2010011067; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Heber Dunes State Vehicular Recreation Area General Plan; located south of the City of Holtville and Interstate 8 on part of the Los Algodones Sand Dunes; Imperial County, California.



Linda S. Adams
Secretary for
Environmental Protection



Department of Toxic Substances Control

Maziar Movassaghi
Acting Director
5796 Corporate Avenue
Cypress, California 90630



Arnold Schwarzenegger
Governor

February 18, 2010

Mr. Kirk Shea
California Department of Parks and Recreation Off-Highway MVRD
Ocotillo Wells District
5172 Highway 78
P.O. Box 360
Borrego Springs, California 92004

NOTICE OF PREPARATION (NOP) OF HEBER DUNES STATE VEHICULAR RECREATION AREA GENERAL PLAN (SCH# 2010011067)

Dear Mr. Shea:

The Department of Toxic Substances Control (DTSC) has received your submitted Notice of Preparation of the Environmental Impact Report for the above-mentioned project. The following project description is stated in your document: "The General Plan is the primary management document for each unit of the California State Park System, establishing its primary purpose and a management direction for its future. Heber Dunes SVRA was operated by the County of Imperial for more than 30 years. It was deeded to CDPR in 2007. Thus, OHMVR Division has initial the process of preparing the first General Plan and an associated EIR for Heber Dunes SVRA.

Planning Areas will be used in the General Plan to allow goals and guidelines to be developed that reflect area-specific conditions. Planning areas will be based on geographic relationships, resource values, management issues and goals, and visitor use and experiences. These goals and guidelines will guide park management issues and goals, and visitor use and experiences. These goals and guidelines will guide park management and provide long-term direction for future facilities and on-site housing, a park administration building and visitor center, interpretive kiosks, restrooms, picnic areas and armadas, and trail corridors".

Based on the review of the submitted document DTSC has the following comments:

- 1) The EIR should evaluate whether conditions within the project area may pose a threat to human health or the environment. Following are the databases of some of the regulatory agencies:
 - National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).
 - Envirostor (formerly CalSites): A Database primarily used by the California Department of Toxic Substances Control, accessible through DTSC's website (see below).
 - Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.
 - Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.
 - Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.
 - GeoTracker: A List that is maintained by Regional Water Quality Control Boards.
 - Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.
 - The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).
- 2) The EIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If necessary, DTSC would require an oversight agreement in order to review such documents.
- 3) Any environmental investigations, sampling and/or remediation for a site should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup. The findings of any investigations, including any Phase I or II

Environmental Site Assessment Investigations should be summarized in the document. All sampling results in which hazardous substances were found above regulatory standards should be clearly summarized in a table. All closure, certification or remediation approval reports by regulatory agencies should be included in the EIR.

- 4) If buildings, other structures, asphalt or concrete-paved surface areas are being planned to be demolished, an investigation should also be conducted for the presence of other hazardous chemicals, mercury, and asbestos containing materials (ACMs). If other hazardous chemicals, lead-based paints (LPB) or products, mercury or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies.
- 5) Future project construction may require soil excavation or filling in certain areas. Sampling may be required. If soil is contaminated, it must be properly disposed and not simply placed in another location onsite. Land Disposal Restrictions (LDRs) may be applicable to such soils. Also, if the project proposes to import soil to backfill the areas excavated, sampling should be conducted to ensure that the imported soil is free of contamination.
- 6) Human health and the environment of sensitive receptors should be protected during any construction or demolition activities. If necessary, a health risk assessment overseen and approved by the appropriate government agency should be conducted by a qualified health risk assessor to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.
- 7) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.

Mr. Kirk Shea
February 18, 2010
Page 4

- 8) DTSC can provide cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies that are not responsible parties, or a Voluntary Cleanup Agreement (VCA) for private parties. For additional information on the EOA or VCA, please see www.dtsc.ca.gov/SiteCleanup/Brownfields, or contact Ms. Maryam Tasnif-Abbasi, DTSC's Voluntary Cleanup Coordinator, at (714) 484-5489.
- 9) For future CEQA documents, please provide the email address of the person to whom comments should be sent.

If you have any questions regarding this letter, please contact me at ashami@dtsc.ca.gov or by phone at (714) 484-5472.

Sincerely,



Al Shami
Project Manager
Brownfields and Environmental Restoration Program

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
state.clearinghouse@opr.ca.gov.

CEQA Tracking Center
Department of Toxic Substances Control
Office of Environmental Planning and Analysis
P.O. Box 806
Sacramento, California 95812
ADelacr1@dtsc.ca.gov

CEQA#2797

Heber Dunes Comments
February 25 2010

I would like to thank State Parks for allowing my comments on the Heber Dunes EIR to be submitted. Comments are being submitted on behalf of the San Diego Off-Road Coalition and the California Off-Road Vehicle Association.

Air quality; because of the heavy sand in Heber Dunes, distance between the park and populated areas and adjacent farmland, air quality is not an issue at Heber Dunes.

Biological resources: Vegetation at Heber Dunes is either non-native or extremely common. No threatened or endangered species live in this area, therefore there should be no biological issues in Heber Dunes.

Other resources; There are no cultural, geological or paleontological resources in Heber Dunes.

Hydrology; Heber Dunes has no naturally flowing water ways. Most rain will be soaked up by the sandy soil. Rain that runs off the property will go into the irrigation channels for the surrounding farmland. There should be no water issues at Heber Dunes.

Land use and management; As there are no biological, cultural, geological or paleontological resources at Heber Dunes, the maximum amount of open space for open vehicular recreation should be provided to visitors. Areas that are deemed important to close should be justified and clearly signed.

Noise; Because of Heber Dunes small size and remote location, combined with sound absorbing foliage and irregular sandy surface, noise issues will be minor at most. No special sound action needs to take place.

Public services and utilities; Should the need arise for some kind of infrastructure to cross Heber Dunes, it must be done in a way so as not to infringe upon recreation. Overhead or underground installations, when complete, must not impact current recreational opportunities.

Transportation; Heber Dunes will have very minor effects on transportation in the park area. Most traffic will be seen on weekends, when commuting traffic is low. Effects are limited to slight increase in traffic on the roads leading to the park.

Heber Dunes has a net positive effect on global climate change. While off-road vehicles emit carbon dioxide, mostly on weekend days, it is offset by the large trees and other foliage in the area that consume carbon dioxide 24 hours a day, every day.

Heber Dunes has a positive economic effect on the local economy by bringing tourist dollars to local businesses.

Law enforcement and local safety; Before becoming a State Park, Heber Dunes area was an area that regularly saw illegal activity. Law enforcement chases often ended at Heber Dunes because people running from the law could hide there or take one of many different routes away from the area. With State Parks taking over, good

management practices have resulted in a drastic drop in illegal activity there.

With the possibility of permitted events taking place at Heber Dunes, combined with the possibility of participants traveling long distances to be there and having staff on site 24 hours, some way of allowing visitors to camp at Heber Dunes should be developed.

Ed Stovin
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7447 Salizar St
San Diego, Ca 92111

COLORADO RIVER BOARD OF CALIFORNIA

770 FAIRMONT AVENUE, SUITE 100
GLENDALE, CA 91203-1068
(818) 500-1625
(818) 543-4685 FAX



April 26, 2010

Mr. Scott Morgan
Acting Director
State Clearinghouse
1400 Tenth Street
P.O. Box 3044
Sacramento, CA 95812-3044

Regarding: SCH# 2010 011 067: Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the Heber Dunes State Vehicular Recreation Area General Plan, Imperial County, California

Dear Mr. Morgan:

The Colorado River Board of California (CRB) has received and reviewed a copy of Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the Heber Dunes State Vehicular Recreation Area General Plan, Imperial County, California.

At this juncture, the CRB has determined that it has no comments regarding the Notice. If you have any questions, please feel free to contact me at (818) 500-1625.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Zimmerman".

Gerald R. Zimmerman
Executive Director

Cc: Mr. Kirk Shea, California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division, Ocotillo Wells District

Regional Water Quality Control Board (RWQCB)

Caltrans, District 8
Dan Kopulsky

Public Utilities Commission
Leo Wong

Fish & Game Region 2
Jeff Drognesen

Resources Agency
Nadell Gayou

RWQCB 1
Cathleen Hudson
North Coast Region (1)

Caltrans, District 9
Gayle Rosander

Santa Monica Bay Restoration
Guangyu Wang

Fish & Game Region 3
Charles Armor

Dept. of Boating & Waterways
Mike Sotelo

RWQCB 2
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Coordinator
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RWQCB 5F
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Elmer Alvarez

Native American Heritage Comm.
Debbie Treadway

Fish & Game Region 1
Donald Koch

Other

Dept. of Pesticide Regulation
CEQA Coordinator

Caltrans, District 8
Elmer Alvarez

Native American Heritage Comm.
Debbie Treadway

Fish & Game Region 1E
Laurie Hamsberger

No Comments!

Appendix B

Traffic Report



FEHR & PEERS
TRANSPORTATION CONSULTANTS



CIRCULATION SECTION OF THE HEBER DUNES STATE VEHICULAR RECREATION AREA GENERAL PLAN EXISTING CONDITIONS REPORT

Prepared for:

EDAW, INC.

Submitted by:

FEHR & PEERS
15707 Rockfield Blvd., Suite 155
Irvine, California 92618
949.859.3200

Ref: OC09-0128

May 2009

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EXISTING TRAFFIC CONDITIONS

This report discusses the existing traffic and transportation conditions in the project study area and addresses the roadway network and current intersection operations in the vicinity of the Heber Dunes State Vehicular Recreation Area (SVRA).

ENVIRONMENTAL SETTING

Heber Dunes State Vehicular Recreation Area (SVRA) is located eight miles east of the community of Heber on Heber Road, near the intersection with Highway 7. South of El Centro, Heber Dunes is bordered by Heber Road to the north and the Alamo Canal to the south and east. The new International border crossing into Baja, California, Mexico is located three miles south of the park. The area is operated under the Ocotillo Wells District for the purpose of off-highway vehicle recreation. This is a day-use park with no over night camping and there is free access into the park. The park operating hours are from 7:00 a.m. to 9:00 p.m. daily.



Vegetation, specifically Tamarisk trees line the border of the park with a few trees scattered intermittently throughout the site. The outer area is more compact dirt with the internal composite made up of sand dunes. Shade ramadas are placed sporadically throughout the park.

There is not a specific staging area for parking and unloading of off-road vehicles. Vehicles enter the unit and park either at the shade ramadas or find parking adjacent to the tree line.

The land surrounding the Heber Dunes SVRA, is primarily farming land.

The day use component of this unit distinguishes itself from other SVRA areas in the fact that most users will come from the immediate surrounding area. Factors such as, vast areas of Southern California are being closed to OHV (off-highway vehicle) use each year and the high cost of getting to many of the existing riding areas is forcing more people to seek recreation closer to home, to go less often, or to stay for longer periods of time. The amount of gas consumed by an off-highway vehicle is very minimal. Most visitors will incur a larger expense in traveling to and from the site. Therefore, the users of Heber Dunes State Park are typically from the local area.

Other OHV riding areas in proximity to Heber Dunes include Imperial Sand Dunes Recreation Area (Glamis), Plaster City OHV area, Ocotillo Wells SVRA and Superstition Mountain OHV area.

ACCESS

Access is west of Highway 7 along Heber Road. The entry point, on the south side of Heber Road, is marked with a sign and is stop sign controlled at the Heber Dunes Entrance. This is the main access for the off-road riding area. A secondary access is located approximately 565 feet west of the intersection of SR 7 and Heber Road and has restricted access by a locked gate.

The main internal roadway runs along the western boundary of the site providing 0.68 miles of paved two-lane travel into the SVRA and terminates at a dirt riding area. This internal roadway is unimproved with no curb and gutters and has a posted speed limit of 15 miles per hour.

The secondary, emergency, access provides right of entry to a dirt road which parallels the canal on the eastern boundary of the site. A map of the study area and access points to the site is shown in Figure 1.



INTERNAL CIRCULATION

Due to the openness of Heber Dunes, there is a combination of open areas and diverse trails set further back. The trails are not a complete network or system, but rather a random assortment of interconnecting links between the riding areas. The existing trails appear to be a product of exploration, with development as a result of repeated use. Most riding does not actually occur on the trails. Many of the trails are short and display no logical beginning or end.

Due to the fact that there is not an established staging area to unload the off-road vehicles, and the ramadas are placed sporadically throughout the site, there is great potential for interaction between cars and trucks and the off-road vehicles in use on the trails.

On-site Vehicle Safety Issues

To help create a clear definition to pedestrians, off-road drivers, and car drivers, the main internal roadway could be improved by creating a cul-de-sac, turnaround, or parking area to create a defined end to the road. This would provide users of the park with a clear definition of where the cars and off-road vehicles may go.

If an educational area for the park is planned, we also suggest that the area be separated from vehicular traffic. This would further reduce the potential for interaction among pedestrians, off-road vehicles, and cars.

In addition, as a user of the park, it is currently unclear how to access the restroom because no access pathway is designated. Pedestrian access to the restroom area should be defined by a pedestrian pathway.

LOCAL STREET SYSTEM

The project study area is generally bounded by Interstate 8 to the north, Highway 111 to the west, Highway 7 to the east and Highway 98 to the south.

Interstate 8 (I-8) is the primary east/west route through Imperial County between San Diego and Yuma, Arizona. It is constructed with two travel lanes in each direction with complete grade separation at all intersections. A portion of I-8 is in the "Master Plan of State Highways Eligible for Official Scenic Highway Designation". The initial segment for future designation lies between the San Diego County line and its jurisdiction with State Route 98.



State Route 111 (SR-111) is a north-south highway that begins at the Mexican border at Calexico and provides four lanes of divided travel northbound to SR-78, where it terminates and picks up again approximately 1.68 miles to the west. SR-111 continues north providing connection to Brawley, Calipatria and follows the eastern border of Salton Sea to Riverside County and connects with the I-10 in the City of Indio. SR-111 travels along the northeast shore of the Salton Sea and is included in the “Master Plan of State Highways Eligible for Official Scenic Highway Designation” from Bombay Beach to the County line.

State Route 7 (SR-7) is another north-south highway that begins at the Mexican border and extends north to Interstate 8 where it becomes Holtville Orchard Road. The roadway has two travel lanes in each direction and divided by a 70 feet dirt median. A photo of SR-7 at Heber Road (viewing north) is shown to the right.



State Route 98 (SR-98) is an east/west facility divert from I-8 near the community of Ocotillo, traveling in a southeast direction through the City of Calexico and connecting back with I-8 near the Algodones Sand Dunes. The majority of SR-98 provides two lanes of undivided travel, except a portion of the roadway through the City of Calexico where the roadway provides four lanes of travel.

Heber Road, an east/west roadway, has its western terminus at La Brucherie Road. As it extends easterly, Heber Road connects with SR-86 at the western edge of the City of Heber. It continues easterly and terminates at Vencil Road. Heber Road is a 24 foot roadway which provides two lanes of undivided travel and is considered a Collector roadway in the Imperial County General Plan. This roadway is unimproved (no curb and gutters) with ten foot dirt shoulders. Heber Road is controlled with a STOP sign at SR-7. Within the study area, Heber Road has traffic volumes ranging between 530 and 1,130 ADT (average vehicles per day).

Mets Road is a north/south roadway, which is 24 feet wide, providing two lanes of travel and is considered a local road. It runs from Heber Road at the southern end to Evan Hewes Highway to the north. A STOP sign controls Mets Road at Heber Road.



Heber Dunes Road is a north/south roadway, providing two lanes of travel into the Heber Dunes off-road vehicle state park. There is a posted speed limit of 15 miles per hour. The roadway is unimproved. There is signage along the roadway giving instruction to the rules of the park. A gate is located on Heber Dunes Road at Heber Road to restrict vehicles from entering the park after hours. Heber Dunes Road is controlled by a STOP at Heber Road. A picture of this roadway is provided to the left.

EXISTING TRAFFIC OPERATIONS

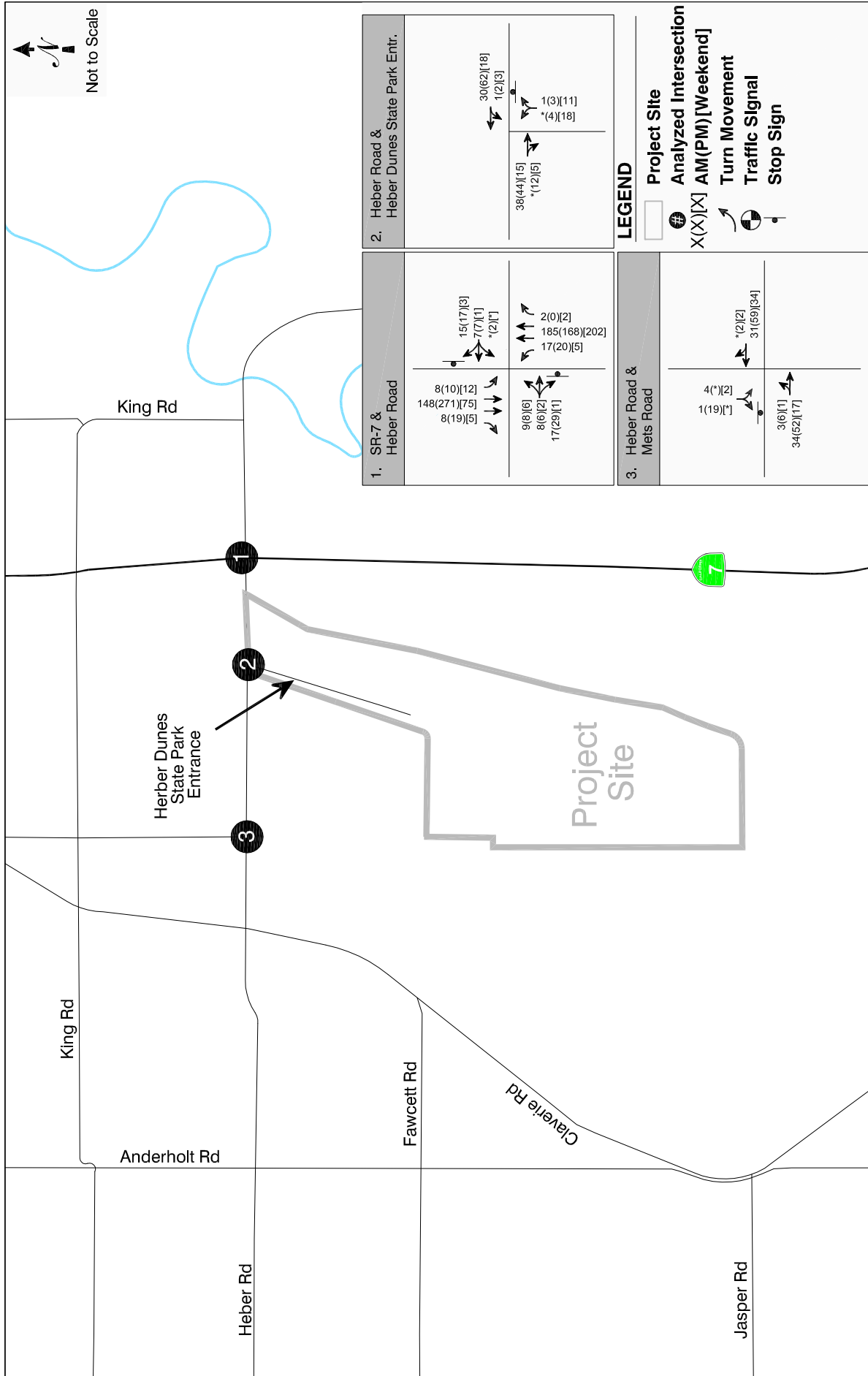
Due to the fact that Heber Dunes State Park is located in a farming area, the intersections within the vicinity of the park are widely spaced. Therefore, Fehr & Peers selected three study intersections in close vicinity to the site for detailed analysis. These intersections include:

- Heber Road / SR-7
- Heber Road / Heber Dunes Road (Park Entrance)
- Heber Road / Mets Road

Additionally, Fehr & Peers conducted daily traffic counts on the following road segment:

- Heber Road between SR-7 and Mets Road

Intersection turning movement counts were conducted in February 2009 during the AM (7:00-10:00) and PM (3:00-7:00) weekday peak periods and on Sunday from 2:30 to 9:30 PM. Based upon discussions with the Supervising Ranger of Heber Dunes, Sunday is typically the heaviest usage day of the facility. Figure 2 illustrates the location, geometrics and existing volumes of the three intersections studied. Appendix A contains the count data.



ANALYSIS METHODOLOGY

The three intersections which were analyzed are all STOP sign controlled. Therefore, the primary method of analysis which was employed was the Highway Capacity Manual.

- Highway Capacity Manual (HCM) – This methodology is taken from the *2000 Highway Capacity Manual* and computes delay at an unsignalized intersection for movements operating under traffic control. For example, at an intersection where only the side street has a stop sign, delay will be reported for movements controlled by the stop sign.

Table 1 documents the relationship between the Level of Service (LOS) value at various levels of delay for unsignalized intersections.

TABLE 1 UNSIGNALIZED INTERSECTION LOS CRITERIA		
Level of Service	Description	Average Control Per Vehicle (Seconds) ¹
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

LEVEL OF SERVICE STANDARDS

Imperial County's goal for an acceptable level of service standard during the AM and PM peak periods is LOS C for all arterial and street segments and LOS C for all intersections.

EXISTING INTERSECTION OPERATIONS

Table 2A provides the level of service (LOS) results for the AM and PM weekday peak hours, while Table 2B provides the results for the weekend peak hour. As shown in Tables 2A and 2B, the following intersections operate at acceptable levels of service during all of the peak periods.

- Heber Road / SR-7
- Heber Road / Heber Dunes Road (Park Entrance)
- Heber Road / Mets Road

TABLE 2A					
INTERSECTION LEVELS OF SERVICE – EXISTING CONDITIONS					
AM AND PM PEAK HOURS - WEEKDAY					
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Heber Road / SR-7	Unsignalized	10.0	B	10.3	B
Heber Road / Heber Dunes Park Entrance	Unsignalized	8.5	A	8.9	A
Heber Road / Mets Road	Unsignalized	8.8	A	8.6	A

Source: *Fehr & Peers, 2009*

TABLE 2B			
INTERSECTION LEVELS OF SERVICE – EXISTING CONDITIONS			
SUNDAY PEAK HOUR - WEEKEND			
Intersection	Control	PM Peak Hour	
		Delay	LOS
Heber Road / SR-7	Unsignalized	10.1	B
Heber Road / Heber Dunes Park Entrance	Unsignalized	8.7	A
Heber Road / Mets Road	Unsignalized	8.8	A

Source: *Fehr & Peers, 2009*

The intersection LOS results are provided in Appendix B.

EXISTING ROADWAY OPERATION

Under existing conditions, the LOS was calculated for a segment of Heber Road, which serves as the primary access to the site. 24-hour directional counts were conducted over a 3-day period, including Friday, Saturday and Sunday. The ADT on Heber Road, west of SR-7, was 1129, 807 and 527 for Friday, Saturday and Sunday, respectively.

Daily capacity thresholds were obtained from the Imperial County General Plan, as shown below in Table 3. This table establishes the maximum daily roadway capacities by street classification. Vehicular traffic on Imperial County's roadway system should not exceed these capacities.

TABLE 3 IMPERIAL COUNTY STANDARD STREET CLASSIFICATION DAILY ROADWAY CAPACITIES						
Road		Level of Service				
Class	X-Section	A	B	C	D	E
Prime Arterial	106/126	22,200	37,000	44,600	50,000	57,000
Major Arterial	82/102	14,800	24,700	29,600	33,400	37,000
Secondary Arterial	64/84	13,700	22,800	27,400	30,800	34,200
Collector Street	40/70	1,900	4,100	7,100	10,900	16,200
Local Street	40/60	*	*	4,500	*	*
Residential Street	40/60	*	*	1,500	*	*
Residential Cul-de-Sac	40/60	*	*	200	*	*

* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Source: *Imperial County General Plan, May 16, 1993.*

Table 4 below presents the existing average daily counts (ADT) and Level of Service (LOS) for the road segment of Heber Dunes adjacent to the Heber Dunes State Park entrance over a three day period.

TABLE 4 EXISTING DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE				
Street Segment	Street Classification	LOS C Capacity	Traffic Volume	LOS
Heber Road				
SR-7 to Heber Dunes Entrance	Collector	7,100		
			Friday, February 20, 2009	1129
			Saturday, February 21, 2009	807
			Sunday, February 22, 2009	527

Source: *Fehr & Peers, 2009*

ALTERNATIVE MODES OF TRANSPORTATION

There are a variety of alternative modes of transportation such as bus transit, rail, bicycle and pedestrian facilities which could be considered as alternative methods of transportation to the site. However, the recreational land use of the site does not depict these facilities to be relevant sources of transportation to this unit due to the fact that the sole purpose of going to the state park is riding off-road vehicles. These off-road vehicles typically can not be driven on public roads and thus must be transported to the unit by vehicle.

PROJECTED STUDY AREA FUTURE VOLUMES AND PLANNED IMPROVEMENTS

We received information for future 2025 volumes from Caltrans, District 11 of the study area. To develop 2035 estimates, a growth factor of 1.5% was applied to the 2025 volumes as recommended by Caltrans. Along the segment of Heber Road from SR-7 to the Heber Dunes entrance, projections estimate 1,800 ADT, which is approximately a 37% increase in vehicular traffic over existing volumes.

We also received the Imperial County 2007 Transportation Plan Highway Element from Caltrans which contains information regarding planned improvements in the area in the near-term (2007-2015), mid-term (2015-2025), and long-term (2025 and beyond). Near-term projects in the study area include widening SR-98 from SR-111 to SR-7 from two to four lanes, widening Jasper Rd to become a six-lane expressway, widening SR-111 to a six-lane expressway, and constructing the SR-115 expressway to connect with I-8. Mid-term projects include improving the Bowker Road interchange with I-8. Long-term projects include construction of new interchange on SR-7 (just north of the project site) to access a planned future airport.

APPENDIX A

Intersection Turning Movement

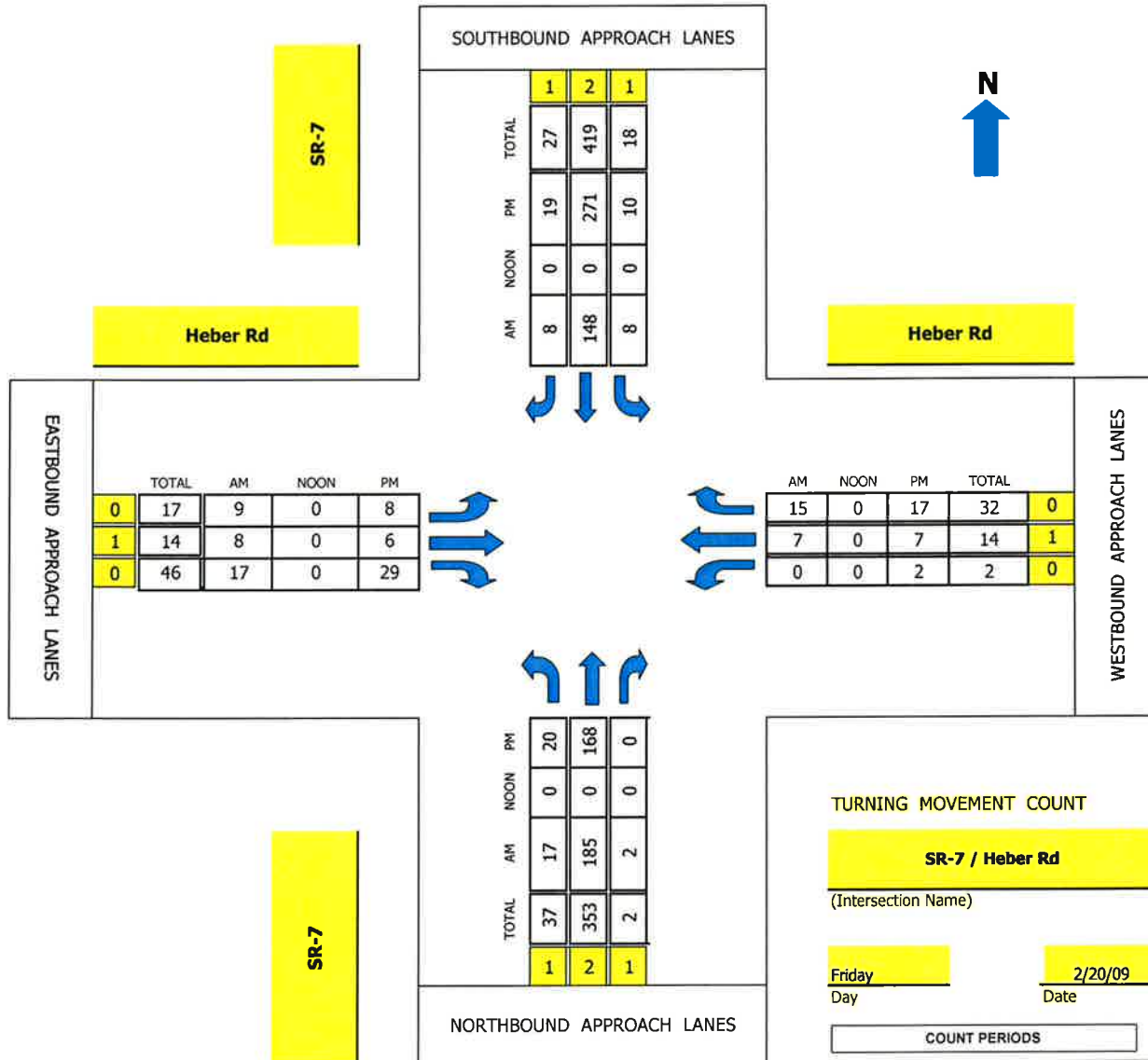
Prepared by:



National Data & Surveying Services

TMC Summary of SR-7/Heber Rd

Project #: 09-4064-001



AM PEAK HOUR 7:15 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 4:30 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-7	DATE: 2/20/2009	LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd	DAY: FRIDAY	PROJECT#: 09-4064-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	3	28	0	0	23	5	1	9	1	0	3	2	75
7:15 AM	4	68	0	1	25	0	2	6	3	0	2	5	116
7:30 AM	5	46	0	3	45	3	3	1	2	0	1	4	113
7:45 AM	4	46	2	2	45	2	1	1	5	0	2	5	115
8:00 AM	4	25	0	2	33	3	3	0	7	0	2	1	80
8:15 AM	2	34	0	2	32	3	1	3	5	0	2	6	90
8:30 AM	3	29	0	0	28	3	0	2	5	0	0	2	72
8:45 AM	6	39	0	4	27	5	0	2	5	0	0	1	89
9:00 AM	2	42	0	2	30	4	1	0	6	0	3	0	90
9:15 AM	5	33	0	0	34	3	2	2	1	1	2	5	88
9:30 AM	5	32	0	0	25	5	1	0	3	1	0	0	72
9:45 AM	4	23	1	2	30	8	1	1	2	1	1	0	74

TOTAL VOLUMES =	NL 47	NT 445	NR 3	SL 18	ST 377	SR 44	EL 16	ET 27	ER 45	WL 3	WT 18	WR 31	TOTAL 1074
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AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	17	185	2	8	148	8	9	8	17	0	7	15	424
PEAK HR. FACTOR:		0.708			0.804			0.773			0.786		0.914

CONTROL: 2-Way Stop (EW)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-7	DATE: 2/20/2009	LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd	DAY: FRIDAY	PROJECT# 09-4064-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
2:00 PM	1	2	1	1	2	1	0	1	0	0	1	0	
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	6	41	0	2	38	6	5	0	1	0	10	4	113
3:15 PM	6	43	0	4	49	3	7	5	3	0	7	1	128
3:30 PM	6	41	0	3	50	4	6	1	10	1	4	8	134
3:45 PM	6	46	0	1	54	2	0	6	6	3	2	3	129
4:00 PM	5	44	0	0	52	5	4	3	8	0	0	3	124
4:15 PM	5	41	0	3	59	8	6	3	6	0	3	4	138
4:30 PM	6	47	0	1	71	7	2	2	7	1	1	4	149
4:45 PM	3	46	0	1	65	4	2	2	5	0	2	5	135
5:00 PM	6	31	0	3	70	4	0	0	7	0	3	6	130
5:15 PM	5	44	0	5	65	4	4	2	10	1	1	2	143
5:30 PM	4	43	0	2	74	4	4	1	8	0	1	1	142
5:45 PM	5	35	0	0	39	3	3	1	5	0	0	0	91
6:00 PM	3	50	0	0	56	3	7	0	10	0	2	2	133
6:15 PM	2	37	0	2	51	2	2	0	3	0	6	3	108
6:30 PM	5	36	0	2	45	1	0	0	4	0	0	0	93
6:45 PM	4	40	1	0	57	2	2	1	5	0	0	3	115
7:00 PM													
7:15 PM													
7:30 PM													
7:45 PM													
8:00 PM													
8:15 PM													
8:30 PM													
8:45 PM													
9:00 PM													
9:15 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	77	665	1	29	895	62	54	27	98	6	42	49	2005

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	20	168	0	10	271	19	8	6	29	2	7	17	557
PEAK HR. FACTOR:		0.887			0.949			0.672			0.722		0.935

CONTROL: 2-Way Stop (EW)

Intersection Turning Movement

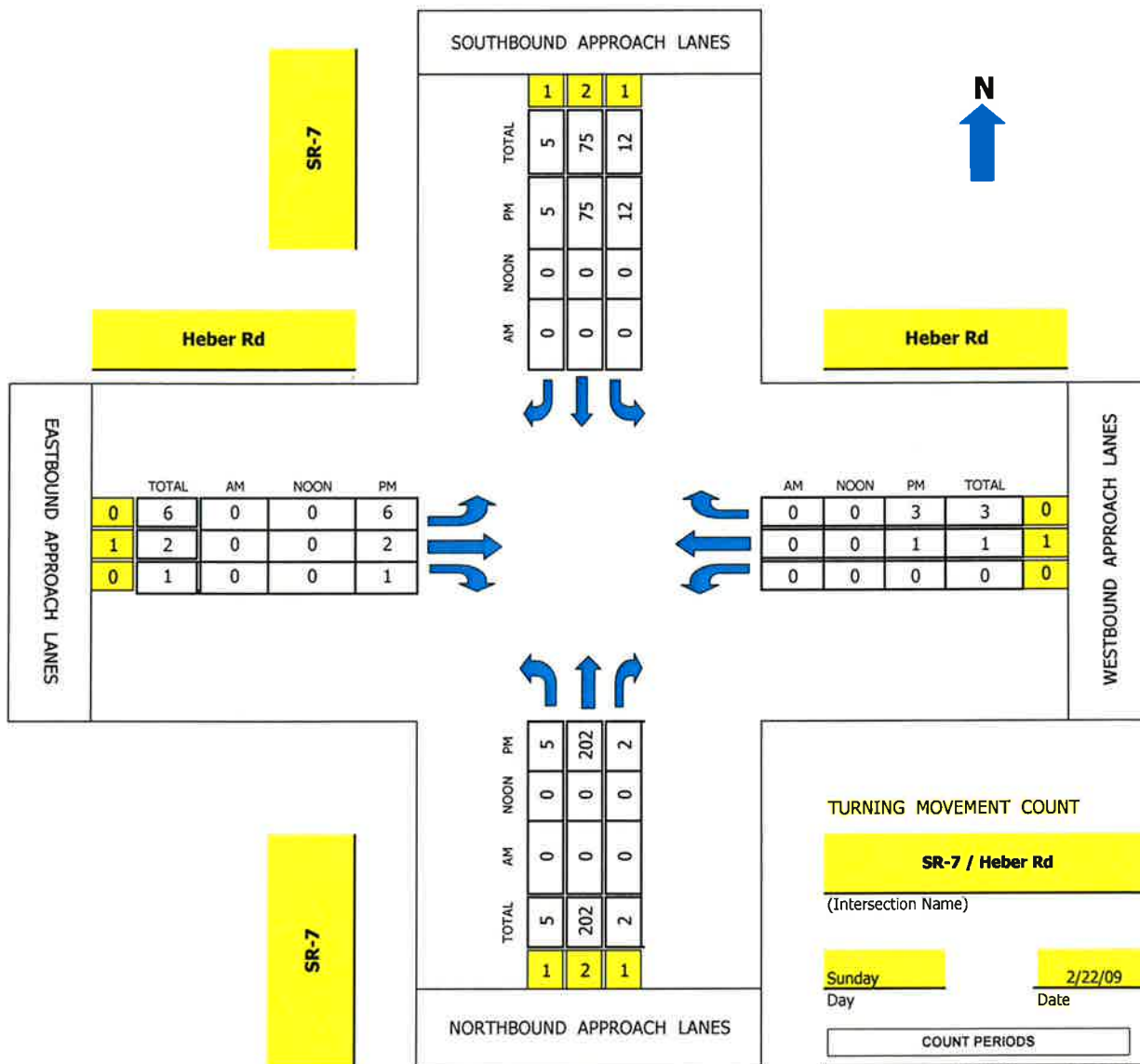
Prepared by:



National Data & Surveying Services

TMC Summary of SR-7/Heber Rd

Project #: 09-4064-001



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 700 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-7	DATE: 2/22/2009	LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd	DAY: SUNDAY	PROJECT# 09-4064-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	2	1	1	2	1	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM	0	44	0	0	25	2	3	0	1		0	0	75
2:45 PM	1	48	0	1	18	4	3	0	3		0	0	78
3:00 PM	1	37	0	0	12	1	1	0	1		0	1	54
3:15 PM	1	44	0	2	21	3	2	2	0		0	1	76
3:30 PM	1	43	0	1	26	3	2	1	1		1	0	79
3:45 PM	2	40	0	0	21	1	2	0	0		0	0	66
4:00 PM	5	49	1	1	15	2	3	1	1		0	1	79
4:15 PM	0	43	0	1	23	1	4	0	0		1	0	73
4:30 PM	1	40	0	1	18	1	0	0	2		0	0	63
4:45 PM	5	26	0	1	24	2	6	0	1		0	2	67
5:00 PM	2	27	0	0	20	0	3	1	0		0	1	54
5:15 PM	2	39	0	1	16	4	4	0	2		2	3	73
5:30 PM	2	37	0	1	16	4	7	2	1		0	0	70
5:45 PM	1	51	1	0	16	1	5	1	0		1	1	78
6:00 PM	2	34	0	0	16	1	2	0	2		0	0	57
6:15 PM	2	46	0	0	11	3	1	0	1		0	1	65
6:30 PM	2	43	0	3	16	2	5	1	1		2	0	75
6:45 PM	0	51	0	2	18	0	1	0	0		1	0	73
7:00 PM	2	49	0	8	17	1	0	1	0		0	0	78
7:15 PM	0	51	0	3	14	2	2	0	1		1	2	76
7:30 PM	1	43	1	1	24	1	2	0	0		0	1	74
7:45 PM	2	59	1	0	20	1	2	1	0		0	0	86
8:00 PM	0	43	0	0	13	0	0	1	0		0	1	58
8:15 PM	3	43	0	0	11	0	2	0	0		0	0	59
8:30 PM	1	58	0	0	12	1	0	0	1		0	0	73
8:45 PM	0	53	0	1	11	1	1	1	0		0	0	68
9:00 PM	1	60	0	0	14	2	1	1	1		0	1	81
9:15 PM	1	46	0	0	12	1	0	0	2		1	5	68
TOTAL VOLUMES =	41	1247	4	28	480	45	64	14	22	0	10	21	1976

PM Peak Hr Begins at: 700 PM

PEAK VOLUMES =	5	202	2	12	75	5	6	2	1	0	1	3	314
PEAK HR. FACTOR:		0.843		0.885			0.750				0.333		0.913

CONTROL: 2-Way Stop (EW)

Intersection Turning Movement

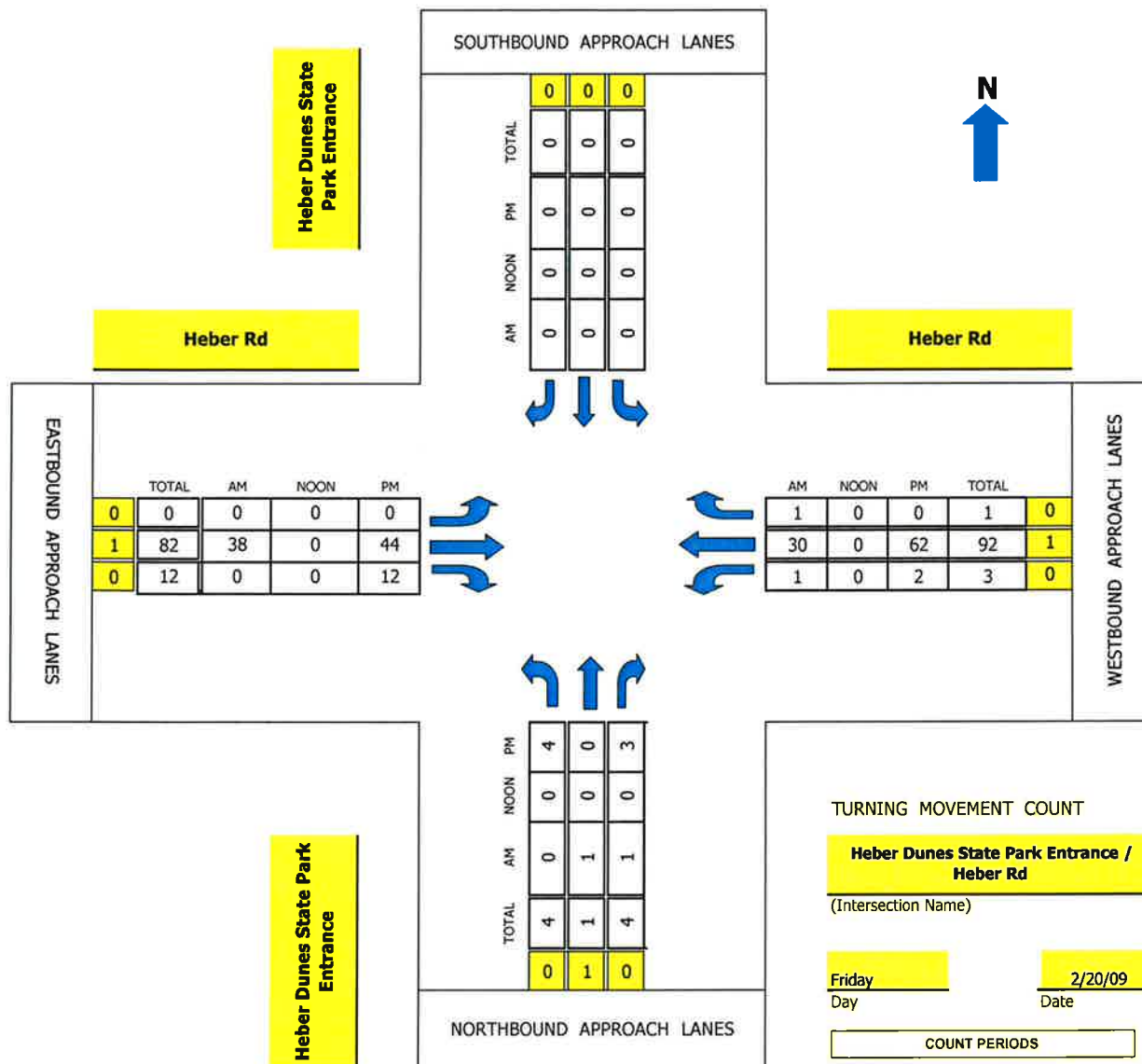
Prepared by:



National Data & Surveying Services

TMC Summary of Heber Dunes State Park Entrance/Heber Rd

Project #: 09-4064-002



AM PEAK HOUR 715 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 300 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Heber Dunes State Park Entrance	DATE: 2/20/2009	LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd	DAY: FRIDAY	PROJECT#: 09-4064-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	0	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		0	1					8	0	1	9	0	19
7:15 AM		1	0					11	0	0	6	0	18
7:30 AM		0	0					7	0	0	9	1	17
7:45 AM		0	1					10	0	0	7	0	18
8:00 AM		0	0					10	0	1	8	0	19
8:15 AM		0	0					7	1	0	7	0	15
8:30 AM		0	0					7	0	1	5	0	13
8:45 AM		0	0					6	0	1	9	0	16
9:00 AM		1	0					7	1	1	8	0	18
9:15 AM		0	0					5	0	0	11	0	16
9:30 AM		1	0					4	0	2	8	0	15
9:45 AM		0	1					5	0	2	10	0	18

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	3	3	0	0	0	0	87	2	9	97	1	202

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	0	1	1	0	0	0	0	38	0	1	30	1	72
PEAK HR. FACTOR:		0.500			0.000			0.864			0.800		0.947

CONTROL: 1-Way Stop (NB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Heber Dunes State Park
Entrance

DATE: 2/20/2009

LOCATION: City of Heber Dunes -
Imperial County

E-W STREET: Heber Rd

DAY: FRIDAY

PROJECT# 09-4064-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
2:00 PM	0	1	0	0	0	0	0	1	0	0	1	0	
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	2		1					4	2	1	21	0	31
3:15 PM	0		0					13	3	1	14	0	31
3:30 PM	2		0					16	5	0	16	0	39
3:45 PM	0		2					11	2	0	11	0	26
4:00 PM	1		1					12	2	0	10	0	26
4:15 PM	0		0					17	3	0	14	0	34
4:30 PM	4		1					8	1	0	14	0	28
4:45 PM	2		0					11	0	0	10	0	23
5:00 PM	0		0					8	2	0	13	0	23
5:15 PM	0		0					15	0	0	10	1	26
5:30 PM	1		0					14	1	0	9	0	25
5:45 PM	1		2					10	0	0	6	0	19
6:00 PM	1		5					9	1	0	8	0	24
6:15 PM	0		0					6	0	0	11	0	17
6:30 PM	0		0					5	1	0	5	0	11
6:45 PM	0		0					7	1	0	7	0	15
7:00 PM													
7:15 PM													
7:30 PM													
7:45 PM													
8:00 PM													
8:15 PM													
8:30 PM													
8:45 PM													
9:00 PM													
9:15 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	14	0	12	0	0	0	0	166	24	2	179	1	398

PM Peak Hr Begins at: 300 PM

PEAK VOLUMES =	4	0	3	0	0	0	0	44	12	2	62	0	127
PEAK HR. FACTOR:		0.583			0.000			0.667			0.727		0.814

CONTROL: 1-Way Stop (NB)

Intersection Turning Movement

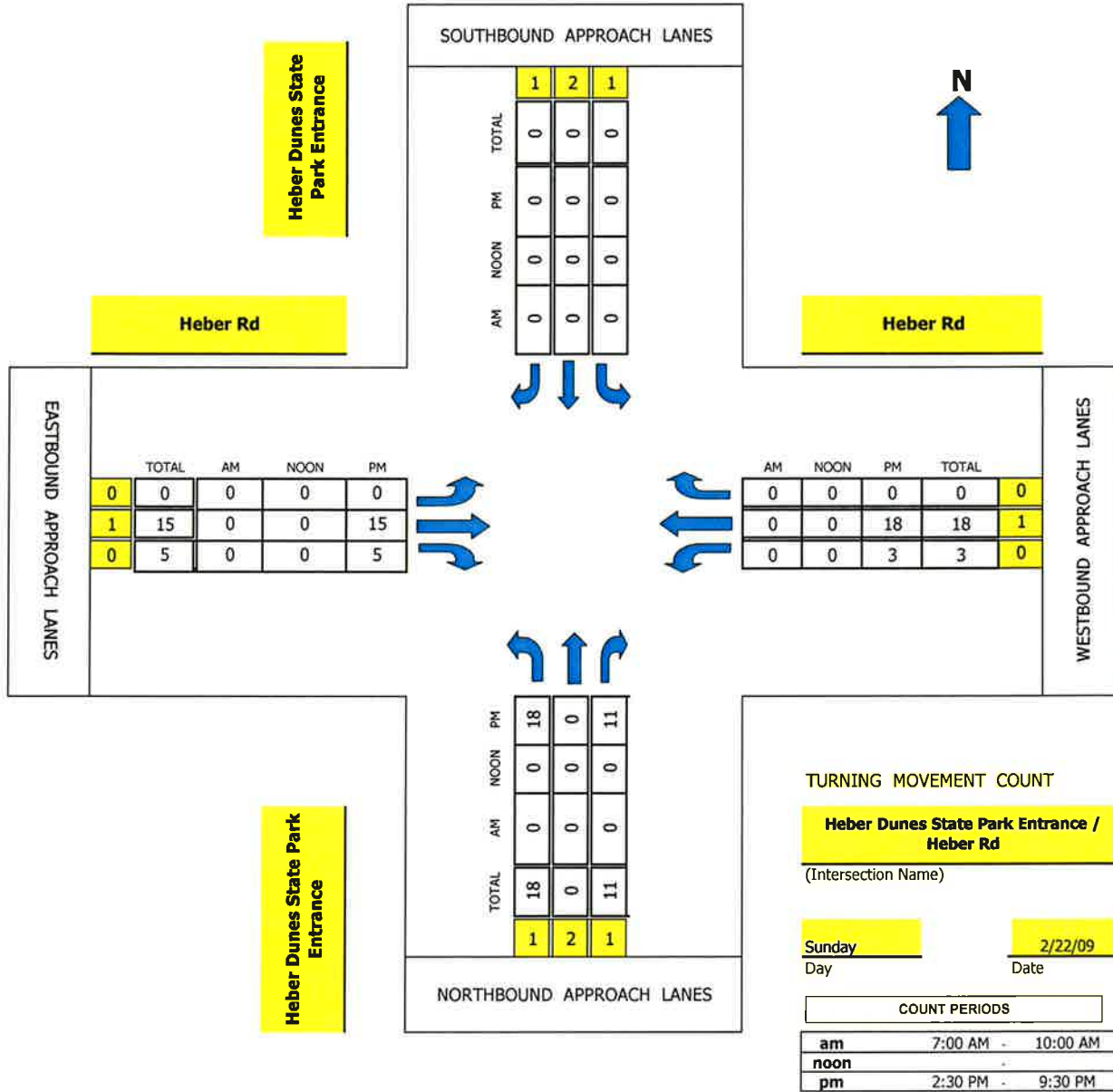
Prepared by:



National Data & Surveying Services

TMC Summary of Heber Dunes State Park Entrance/Heber Rd

Project #: 09-4064-002



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 445 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Heber Dunes State Park Entrance	DATE: 2/22/2009	LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd	DAY: SUNDAY	PROJECT#: 09-4064-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	0	0	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM	1		0	0				5	3	1	2		12
2:45 PM	1		3	0				2	1	2	2		11
3:00 PM	3		0	0				2	5	1	1		12
3:15 PM	3		0	0				3	1	0	4		11
3:30 PM	1		0	0				3	5	0	5		14
3:45 PM	2		1	0				3	4	0	4		14
4:00 PM	0		1	0				2	1	1	5		10
4:15 PM	4		2	0				1	2	0	2		11
4:30 PM	1		2	0				1	2	1	2		9
4:45 PM	6		3	0				3	1	2	4		19
5:00 PM	4		1	0				3	3	0	2		13
5:15 PM	2		3	0				4	1	1	7		18
5:30 PM	6		4	0				5	0	0	5		20
5:45 PM	3		2	0				3	3	0	2		13
6:00 PM	3		2	2				1	0	2	2		12
6:15 PM	0		1	0				2	0	0	5		8
6:30 PM	4		3	0				4	1	1	4		17
6:45 PM	3		0	0				0	0	0	2		5
7:00 PM	0		0	0				2	0	0	3		5
7:15 PM	1		0	0				2	0	0	3		6
7:30 PM	1		1	0				3	0	0	2		7
7:45 PM	1		0	0				2	0	0	2		5
8:00 PM	2		2	0				0	0	0	1		5
8:15 PM	1		0	0				2	0	0	2		5
8:30 PM	1		0	0				1	0	0	2		4
8:45 PM	0		0	0				2	0	0	1		3
9:00 PM	0		0	0				2	0	0	3		5
9:15 PM	0		0	0				2	0	0	3		5

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	54	0	31	2	0	0	0	65	33	12	82	0	279

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	18	0	11	0	0	0	0	15	5	3	18	0	70
PEAK HR. FACTOR:		0.725			0.000			0.833			0.656		0.875

CONTROL: 1-Way Stop (NB)

Intersection Turning Movement

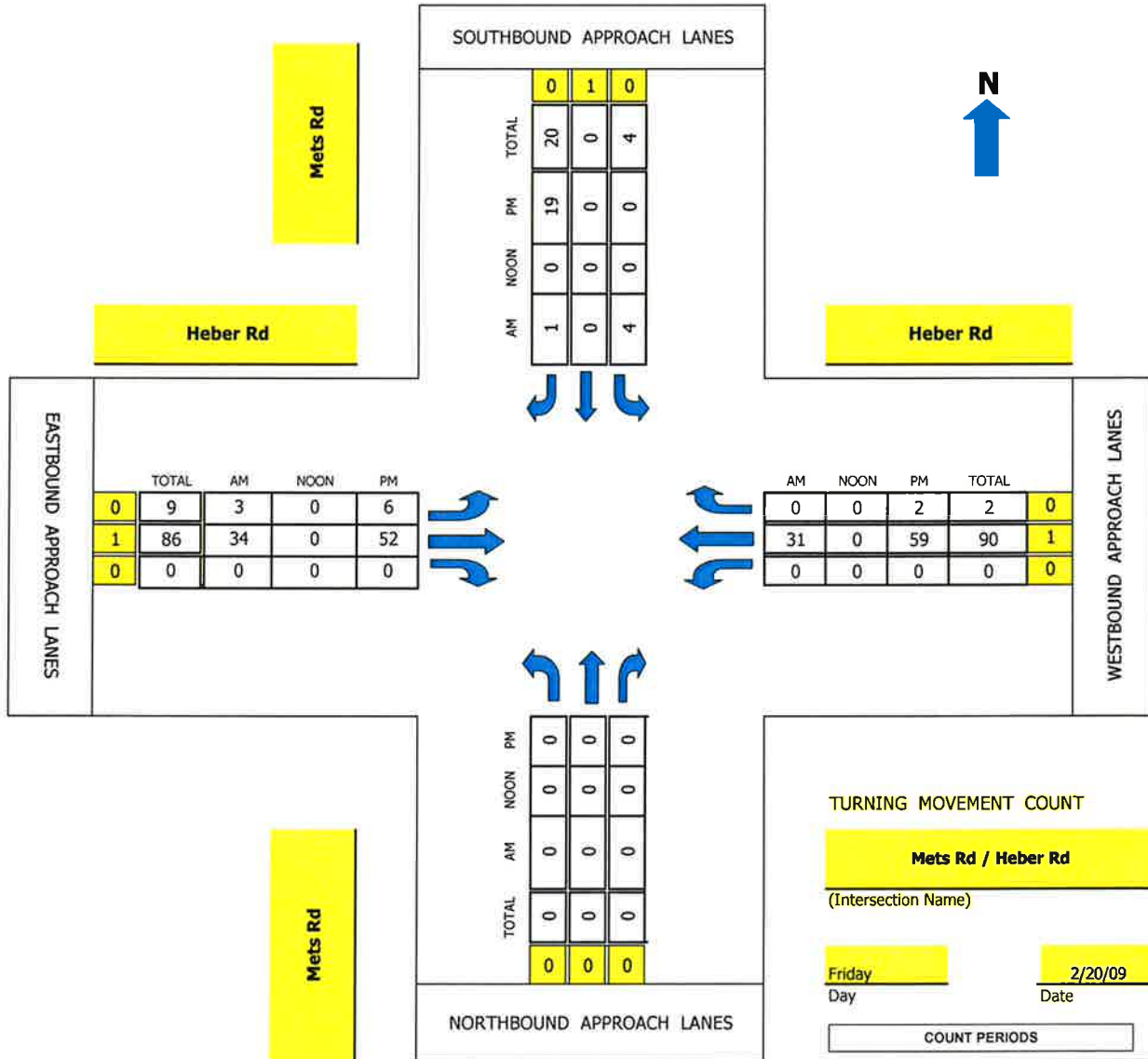
Prepared by:



National Data & Surveying Services

TMC Summary of Mets Rd/Heber Rd

Project #: 09-4064-003



TURNING MOVEMENT COUNT

Mets Rd / Heber Rd
(Intersection Name)

Friday 2/20/09
Day Date

COUNT PERIODS	
am	7:00 AM - 10:00 AM
noon	-
pm	2:30 PM - 9:30 PM

AM PEAK HOUR 700 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 415 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: **Mets Rd** DATE: **2/20/2009** LOCATION: **City of Heber Dunes - Imperial County**
 E-W STREET: **Heber Rd** DAY: **FRIDAY** PROJECT# **09-4064-003**

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	0	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				0		0	1	10		8	0		19
7:15 AM				3		0	0	7		8	0		18
7:30 AM				1		0	1	6		7	0		15
7:45 AM				0		1	1	11		8	0		21
8:00 AM				0		0	0	9		8	0		17
8:15 AM				1		1	1	7		7	1		18
8:30 AM				0		0	1	7		3	0		11
8:45 AM				1		2	0	5		9	0		17
9:00 AM				1		1	0	8		8	1		19
9:15 AM				0		0	0	6		10	0		16
9:30 AM				1		0	2	4		6	1		14
9:45 AM				1		1	0	5		9	0		16

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	9	0	6	7	85	0	0	91	3	201

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	0	0	0	4	0	1	3	34	0	0	31	0	73
PEAK HR. FACTOR:	0.000			0.417			0.771			0.969			0.869

CONTROL: 1-Way Stop (SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Mets Rd DATE: 2/20/2009 LOCATION: City of Heber Dunes - Imperial County
 E-W STREET: Heber Rd DAY: FRIDAY PROJECT# 09-4064-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	0	0	0	1	0	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM				0	0	1	2	6		0	18	3	30
3:15 PM				0	1	0	0	19		0	11	2	33
3:30 PM				1	0	2	0	16		0	16	0	35
3:45 PM				5	0	0	0	8		0	9	0	22
4:00 PM				3	0	0	0	14		0	12	1	30
4:15 PM				0	0	4	2	19		0	14	0	39
4:30 PM				0	0	1	2	9		0	20	0	32
4:45 PM				0	0	11	0	9		0	10	1	31
5:00 PM				0	0	3	2	15		0	15	1	36
5:15 PM				3	0	3	1	9		0	9	1	26
5:30 PM				0	0	0	1	12		0	10	0	23
5:45 PM				1	0	2	0	12		0	9	0	24
6:00 PM				0	0	0	2	8		0	10	0	20
6:15 PM				0	0	2	0	4		0	8	2	16
6:30 PM				0	0	0	0	6		0	4	0	10
6:45 PM				0	0	0	1	8		1	10	0	20
7:00 PM													
7:15 PM													
7:30 PM													
7:45 PM													
8:00 PM													
8:15 PM													
8:30 PM													
8:45 PM													
9:00 PM													
9:15 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	13	1	29	13	174	0	1	185	11	427

PM Peak Hr Begins at: 4:15 PM

PEAK VOLUMES =	0	0	0	0	0	19	6	52	0	0	59	2	138
PEAK HR. FACTOR:		0.000			0.432			0.690			0.763		0.885

CONTROL: 1-Way Stop (SB)

Intersection Turning Movement

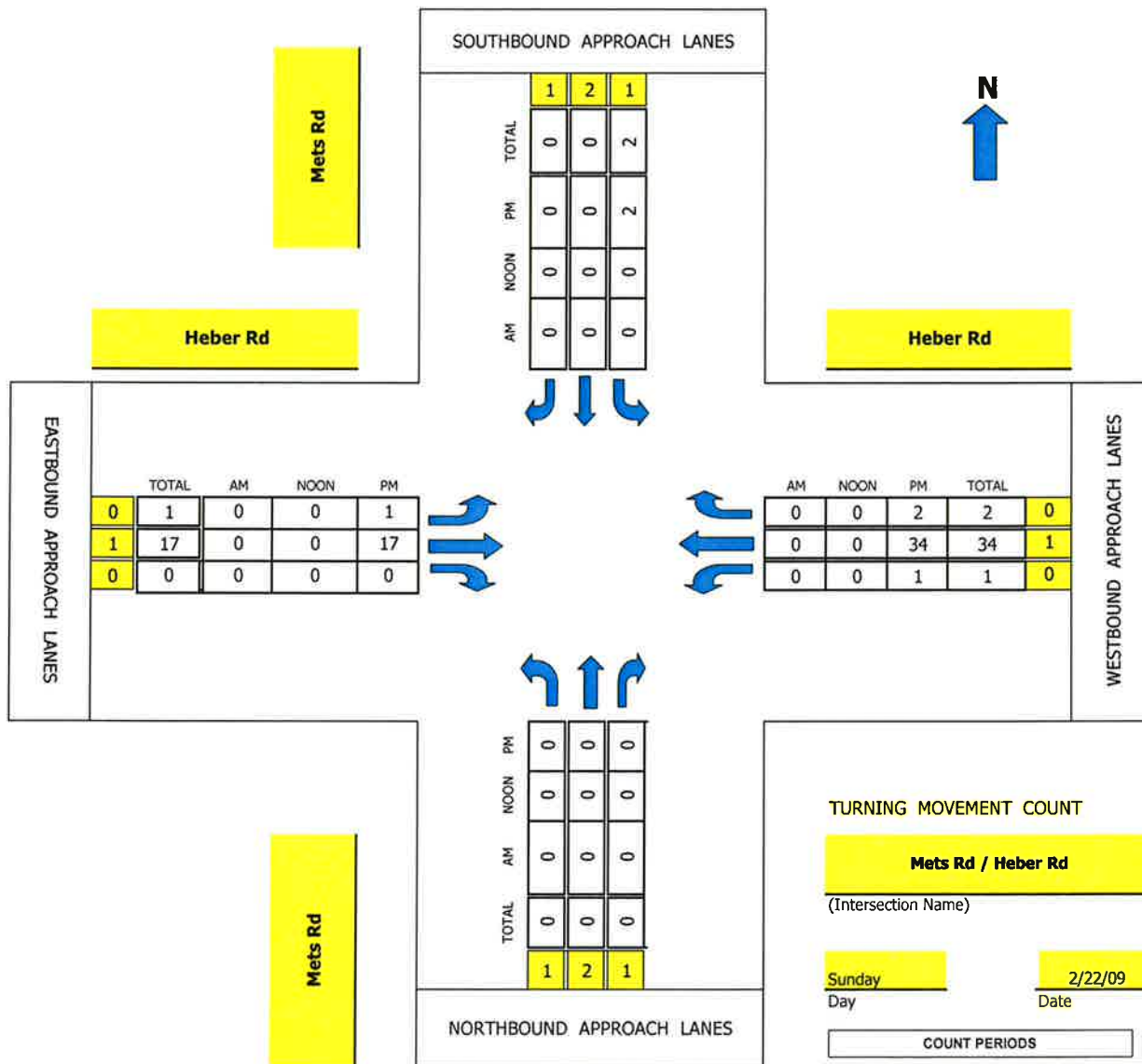
Prepared by:



National Data & Surveying Services

TMC Summary of Mets Rd/Heber Rd

Project #: 09-4064-003



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 445 PM

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: Mets Rd DATE: 2/22/2009 LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd DAY: SUNDAY PROJECT#: 09-4064-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM				0		0	0	8		0	4	0	12
2:45 PM				0		0	0	3		0	3	0	6
3:00 PM				1		1	0	6		0	4	0	12
3:15 PM				1		0	0	3		0	6	0	10
3:30 PM				0		0	0	7		0	6	1	14
3:45 PM				1		0	1	7		0	5	0	14
4:00 PM				0		2	0	2		0	5	1	10
4:15 PM				0		0	0	3		0	6	0	9
4:30 PM				1		0	1	3		0	3	0	8
4:45 PM				0		0	0	3		0	10	1	14
5:00 PM				0		0	1	6		0	6	0	13
5:15 PM				0		0	0	5		0	7	1	13
5:30 PM				2		0	0	3		1	11	0	17
5:45 PM				0		0	1	7		0	5	0	13
6:00 PM				0		0	0	1		0	5	0	6
6:15 PM				1		0	0	2		0	5	0	8
6:30 PM				0		0	0	4		1	7	0	12
6:45 PM				0		0	0	0		0	4	0	4
7:00 PM				0		0	0	2		0	4	0	6
7:15 PM				2		0	0	1		0	3	0	6
7:30 PM				0		0	0	2		0	2	0	4
7:45 PM				0		0	2	2		0	4	0	8
8:00 PM				0		0	0	1		0	2	0	3
8:15 PM				0		0	0	2		0	3	0	5
8:30 PM				0		0	0	1		0	3	0	4
8:45 PM				0		0	0	2		0	1	0	3
9:00 PM				0		0	0	4		0	4	0	8
9:15 PM				0		0	0	1		0	3	0	4
TOTAL VOLUMES =	0	0	0	9	0	3	6	91	0	2	131	4	246

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	0	0	0	2	0	0	1	17	0	1	34	2	57
PEAK HR. FACTOR:	0.000			0.250			0.643			0.771			0.838

CONTROL: 1-Way Stop (SB)

Prepared by NDS/ATD

Volumes for: Friday, February 20, 2009 City: Heber Dunes - Imperial County Project #: 09-4065-001
Location: Heber Rd W/o SR-7

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			1	4	12:00			7	8			
00:15			1	1	12:15			10	7			
00:30			0	0	12:30			6	15			
00:45			1	3	1	6	9	8	31	3	33	64
01:00			0	0	13:00			9	12			
01:15			0	0	13:15			11	10			
01:30			0	0	13:30			8	7			
01:45			0	0	0	0		9	37	5	34	71
02:00			1	0	14:00			8	4			
02:15			0	1	14:15			10	14			
02:30			0	0	14:30			9	16			
02:45			2	3	0	1	4	11	38	9	43	81
03:00			2	2	15:00			7	24			
03:15			1	0	15:15			17	11			
03:30			2	2	15:30			16	18			
03:45			2	7	1	5	12	11	51	10	63	114
04:00			1	3	16:00			15	10			
04:15			3	2	16:15			17	12			
04:30			4	2	16:30			8	18			
04:45			3	11	4	11	22	8	48	11	51	99
05:00			9	0	17:00			14	15			
05:15			2	0	17:15			10	8			
05:30			14	4	17:30			11	10			
05:45			13	38	6	10	48	12	47	9	42	89
06:00			6	5	18:00			9	9			
06:15			11	7	18:15			4	8			
06:30			8	5	18:30			7	5			
06:45			10	35	3	20	55	11	31	8	30	61
07:00			10	9	19:00			10	4			
07:15			10	7	19:15			6	5			
07:30			6	8	19:30			1	6			
07:45			11	37	8	32	69	1	18	2	17	35
08:00			11	12	20:00			2	3			
08:15			8	8	20:15			3	6			
08:30			7	4	20:30			1	7			
08:45			6	32	11	35	67	2	8	2	18	26
09:00			13	8	21:00			2	2			
09:15			2	9	21:15			1	3			
09:30			2	13	21:30			2	3			
09:45			4	21	12	42	63	3	8	2	10	18
10:00			10	4	22:00			0	0			
10:15			2	5	22:15			4	1			
10:30			4	6	22:30			1	2			
10:45			5	21	10	25	46	1	6	4	7	13
11:00			4	11	23:00			0	3			
11:15			3	8	23:15			2	2			
11:30			9	6	23:30			0	1			
11:45			6	22	6	31	53	1	3	1	7	10

Total Vol. 230 218 448 326 355 681

Daily Totals					
		NB	SB	EB	WB
		Combined		556	573
1129					

Split %	AM			PM		
	51.3%	48.7%	39.7%	47.9%	52.1%	60.3%
Peak Hour	05:30	09:00	07:15	15:15	14:15	15:00
Volume	44	42	73	59	63	114
P.H.F.	0.79	0.81	0.79	0.87	0.66	0.84

Prepared by NDS/ATD

Volumes for: Saturday, February 21, 2009

City: Heber Dunes - Imperial County

Project #: 09-4065-001

Location: Heber Rd W/o SR-7

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB				
00:00			0	2	12:00			4	2				
00:15			1	0	12:15			7	13				
00:30			1	0	12:30			3	7				
00:45			0	2	0	2	4	12:45	2	16	13	35	51
01:00			0	0	13:00			6	12				
01:15			2	0	13:15			6	8				
01:30			3	2	13:30			12	11				
01:45			1	6	0	2	8	13:45	8	32	6	37	69
02:00			0	0	14:00			14	20				
02:15			1	0	14:15			9	5				
02:30			3	0	14:30			10	5				
02:45			0	4	0	0	4	14:45	4	37	20	50	87
03:00			0	0	15:00			6	9				
03:15			0	0	15:15			6	5				
03:30			2	1	15:30			11	7				
03:45			0	2	0	1	3	15:45	10	33	6	27	60
04:00			3	0	16:00			8	9				
04:15			1	0	16:15			7	11				
04:30			5	1	16:30			4	4				
04:45			4	13	1	2	15	16:45	6	25	9	33	58
05:00			5	0	17:00			5	8				
05:15			6	0	17:15			3	2				
05:30			5	0	17:30			3	8				
05:45			12	28	2	2	30	17:45	10	21	7	25	46
06:00			4	3	18:00			3	9				
06:15			9	4	18:15			3	4				
06:30			7	4	18:30			4	3				
06:45			4	24	2	13	37	18:45	1	11	5	21	32
07:00			3	4	19:00			1	3				
07:15			6	3	19:15			2	1				
07:30			7	4	19:30			2	3				
07:45			4	20	2	13	33	19:45	2	7	4	11	18
08:00			4	5	20:00			3	2				
08:15			2	2	20:15			1	6				
08:30			4	5	20:30			3	3				
08:45			4	14	4	16	30	20:45	4	11	3	14	25
09:00			3	8	21:00			2	3				
09:15			3	6	21:15			2	2				
09:30			3	8	21:30			2	2				
09:45			6	15	4	26	41	21:45	0	6	4	11	17
10:00			7	7	22:00			1	6				
10:15			5	3	22:15			1	4				
10:30			6	7	22:30			0	3				
10:45			5	23	7	24	47	22:45	4	6	1	14	20
11:00			12	7	23:00			0	0				
11:15			11	8	23:15			1	3				
11:30			5	4	23:30			0	2				
11:45			9	37	10	29	66	23:45	0	1	0	5	6

Total Vol. 188 130 **318** 206 283 **489**

Daily Totals

NB	SB	EB	WB
		394	413
807			

Split %	AM			PM		
	59.1%	40.9%	39.4%	42.1%	57.9%	60.6%
Peak Hour	11:00	11:45	11:00	13:30	14:00	14:00
Volume	37	32	66	43	50	87
P.H.F.	0.77	0.62	0.87	0.77	0.63	0.64

Prepared by NDS/ATD

Volumes for: Sunday, February 22, 2009

City: Heber Dunes - Imperial County

Project #: 09-4065-001

Location: Heber Rd W/o SR-7

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			0	1	12:00			7	5			
00:15			1	0	12:15			5	3			
00:30			0	2	12:30			6	3			
00:45			0	1	1	4	5	7	25	3	14	39
01:00			0	0	13:00			3	3			
01:15			0	1	13:15			3	4			
01:30			0	0	13:30			1	2			
01:45			0	0	1	1		9	16	5	14	30
02:00			0	0	14:00			9	6			
02:15			0	0	14:15			4	7			
02:30			1	0	14:30			8	2			
02:45			0	1	0	1		3	24	4	19	43
03:00			1	0	15:00			4	4			
03:15			1	1	15:15			5	6			
03:30			0	0	15:30			6	5			
03:45			0	2	0	1	3	6	21	5	20	41
04:00			0	0	16:00			3	7			
04:15			0	0	16:15			3	6			
04:30			0	0	16:30			4	0			
04:45			3	3	0	0	3	3	13	10	23	36
05:00			1	1	17:00			6	6			
05:15			0	0	17:15			5	6			
05:30			3	0	17:30			5	9			
05:45			7	11	0	1	12	7	23	6	27	50
06:00			1	2	18:00			1	5			
06:15			3	1	18:15			4	4			
06:30			3	2	18:30			4	9			
06:45			2	9	0	5	14	0	9	4	22	31
07:00			0	6	19:00			2	3			
07:15			2	6	19:15			2	4			
07:30			4	5	19:30			2	3			
07:45			3	9	5	22	31	2	8	3	13	21
08:00			3	0	20:00			1	5			
08:15			4	7	20:15			0	1			
08:30			2	3	20:30			1	3			
08:45			3	12	1	11	23	2	4	1	10	14
09:00			3	1	21:00			5	3			
09:15			2	6	21:15			1	3			
09:30			2	4	21:30			0	2			
09:45			2	9	4	15	24	1	7	2	10	17
10:00			3	8	22:00			1	1			
10:15			3	6	22:15			3	0			
10:30			6	4	22:30			1	1			
10:45			6	18	2	20	38	0	5	0	2	7
11:00			7	1	23:00			1	1			
11:15			3	10	23:15			1	0			
11:30			5	5	23:30			0	1			
11:45			2	17	2	18	35	0	2	4	6	8

Total Vol. 92 98 190 157 180 337

Daily Totals

NB	SB	EB	WB
		249	278
Combined 527			

Split %	AM			PM		
	48.4%	51.6%	36.1%	46.6%	53.4%	63.9%
Peak Hour	10:15	07:00	10:30	13:45	16:45	13:45
Volume	22	22	39	30	31	50
P.H.F.	0.79	0.92	0.75	0.83	0.78	0.83

APPENDIX B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>HK</i>	Intersection	<i>Heber Road & SR-7</i>
Agency/Co.	<i>Fehr & Peers</i>	Jurisdiction	<i>Imperial County</i>
Date Performed	<i>3/13/2009</i>	Analysis Year	<i>Existing Conditions</i>
Analysis Time Period	<i>AM Peak Hour - Weekday</i>		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>State Route 7</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	<i>17</i>	<i>185</i>	<i>2</i>	<i>8</i>	<i>148</i>	<i>8</i>
Peak-Hour Factor, PHF	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>
Hourly Flow Rate, HFR (veh/h)	<i>17</i>	<i>194</i>	<i>2</i>	<i>8</i>	<i>155</i>	<i>8</i>
Percent Heavy Vehicles	<i>0</i>	--	--	<i>0</i>	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>1</i>	<i>2</i>	<i>0</i>	<i>1</i>	<i>2</i>	<i>0</i>
Configuration	<i>L</i>	<i>T</i>	<i>TR</i>	<i>L</i>	<i>T</i>	<i>TR</i>
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	<i>9</i>	<i>8</i>	<i>17</i>	<i>0</i>	<i>7</i>	<i>15</i>
Peak-Hour Factor, PHF	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>	<i>0.95</i>
Hourly Flow Rate, HFR (veh/h)	<i>9</i>	<i>8</i>	<i>17</i>	<i>0</i>	<i>7</i>	<i>15</i>
Percent Heavy Vehicles	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent Grade (%)	<i>0</i>			<i>0</i>		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>
Configuration		<i>LTR</i>			<i>LTR</i>	

Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>L</i>	<i>L</i>		<i>LTR</i>			<i>LTR</i>	
v (veh/h)	<i>17</i>	<i>8</i>		<i>22</i>			<i>34</i>	
C (m) (veh/h)	<i>1428</i>	<i>1389</i>		<i>781</i>			<i>748</i>	
v/c	<i>0.01</i>	<i>0.01</i>		<i>0.03</i>			<i>0.05</i>	
95% queue length	<i>0.04</i>	<i>0.02</i>		<i>0.09</i>			<i>0.14</i>	
Control Delay (s/veh)	<i>7.6</i>	<i>7.6</i>		<i>9.7</i>			<i>10.0</i>	
LOS	<i>A</i>	<i>A</i>		<i>A</i>			<i>B</i>	
Approach Delay (s/veh)	--	--		<i>9.7</i>			<i>10.0</i>	
Approach LOS	--	--		<i>A</i>			<i>B</i>	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	HK	Intersection	Heber Road & SR-7
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	3/13/2009	Analysis Year	Existing Conditions
Analysis Time Period	PM Peak Hour - Weekday		

Project Description: Heber Dunes State Park	
East/West Street: Heber Road	North/South Street: State Route 7
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
	L	T	R	L	T	R	
Volume (veh/h)	20	168	0	10	271	19	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	21	176	0	10	285	20	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Raised curb						
RT Channelized			0			0	
Lanes	1	2	0	1	2	0	
Configuration	L	T	TR	L	T	TR	
Upstream Signal		0			0		

Minor Street	Eastbound			Westbound			
	Movement	7	8	9	10	11	12
	L	T	R	L	T	R	
Volume (veh/h)	8	6	29	2	7	17	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	8	6	30	2	7	17	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration		LTR			LTR		

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound			
	Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR		
v (veh/h)	21	10		26			44		
C (m) (veh/h)	1267	1412		742			725		
v/c	0.02	0.01		0.04			0.06		
95% queue length	0.05	0.02		0.11			0.19		
Control Delay (s/veh)	7.9	7.6		10.0			10.3		
LOS	A	A		B			B		
Approach Delay (s/veh)	--	--		10.0			10.3		
Approach LOS	--	--		B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>HK</i>	Intersection	<i>Heber Road & SR-7</i>
Agency/Co.	<i>Fehr & Peers</i>	Jurisdiction	<i>Imperial County</i>
Date Performed	<i>3/13/2009</i>	Analysis Year	<i>Existing Conditions</i>
Analysis Time Period	<i>PM Peak Hour - Weekend</i>		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>State Route 7</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	202	2	12	75	5
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	5	212	2	12	78	5
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	6	2	1	0	1	3
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	6	2	1	0	1	3
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service									
Approach	Northbound	Southbound	Westbound			Eastbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	L	L		LTR			LTR		
v (veh/h)	5	12		4			9		
C (m) (veh/h)	1527	1368		824			717		
v/c	0.00	0.01		0.00			0.01		
95% queue length	0.01	0.03		0.01			0.04		
Control Delay (s/veh)	7.4	7.7		9.4			10.1		
LOS	A	A		A			B		
Approach Delay (s/veh)	--	--		9.4			10.1		
Approach LOS	--	--		A			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	HK	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	3/13/2009	Analysis Year	Existing Conditions
Analysis Time Period	AM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Heber Dunes Entrance</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		38	0	1	30	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	40	0	1	31	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0		1			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	1	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
v (veh/h)		1		1				
C (m) (veh/h)		1583		1037				
v/c		0.00		0.00				
95% queue length		0.00		0.00				
Control Delay (s/veh)		7.3		8.5				
LOS		<i>A</i>		<i>A</i>				
Approach Delay (s/veh)	--	--	8.5					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	HK	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	3/13/2009	Analysis Year	Existing Conditions
Analysis Time Period	PM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Heber Dunes Entrance</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		44	12	2	62	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	46	12	2	65	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	4		3			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	4	0	3	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
v (veh/h)		2		7				
C (m) (veh/h)		1559		934				
v/c		0.00		0.01				
95% queue length		0.00		0.02				
Control Delay (s/veh)		7.3		8.9				
LOS		<i>A</i>		<i>A</i>				
Approach Delay (s/veh)	--	--	8.9					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	HK	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	3/13/2009	Analysis Year	Existing Conditions
Analysis Time Period	PM Peak Hour - Weekend		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Heber Dunes Entrance</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		15	5	3	18	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	15	5	3	18	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	18		11			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	18	0	11	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
v (veh/h)		3		29				
C (m) (veh/h)		1609		1006				
v/c		0.00		0.03				
95% queue length		0.01		0.09				
Control Delay (s/veh)		7.2		8.7				
LOS		<i>A</i>		<i>A</i>				
Approach Delay (s/veh)	--	--	8.7					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	HK	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	3/13/2009	Analysis Year	Existing Conditions
Analysis Time Period	AM Peak Hour - Weekday		

Project Description: <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	3	34			31	0
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	3	35	0	0	32	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				4		1
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	1
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					<i>LR</i>	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (veh/h)	3						5	
C (m) (veh/h)	1593						955	
v/c	0.00						0.01	
95% queue length	0.01						0.02	
Control Delay (s/veh)	7.3						8.8	
LOS	<i>A</i>						<i>A</i>	
Approach Delay (s/veh)	--	--					8.8	
Approach LOS	--	--					<i>A</i>	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	HK	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	3/13/2009	Analysis Year	Existing Conditions
Analysis Time Period	PM Peak Hour - Weekday		

Project Description: <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	52			59	2
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	6	54	0	0	62	2
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				0		19
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	20
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					<i>LR</i>	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (veh/h)	6						20	
C (m) (veh/h)	1551						1007	
v/c	0.00						0.02	
95% queue length	0.01						0.06	
Control Delay (s/veh)	7.3						8.6	
LOS	<i>A</i>						<i>A</i>	
Approach Delay (s/veh)	--	--					8.6	
Approach LOS	--	--					<i>A</i>	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	HK	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	3/13/2009	Analysis Year	Existing Conditions
Analysis Time Period	PM Peak Hour - Weekend		

Project Description: <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	1	17			34	2
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	1	17	0	0	35	2
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				2		0
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	2	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					<i>LR</i>	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (veh/h)	1						2	
C (m) (veh/h)	1587						957	
v/c	0.00						0.00	
95% queue length	0.00						0.01	
Control Delay (s/veh)	7.3						8.8	
LOS	<i>A</i>						<i>A</i>	
Approach Delay (s/veh)	--	--					8.8	
Approach LOS	--	--					<i>A</i>	



FEHR & PEERS
TRANSPORTATION CONSULTANTS



CIRCULATION SECTION OF THE HEBER DUNES STATE VEHICULAR RECREATION AREA GENERAL PLAN ENVIRONMENTAL IMPACT REPORT (TRAFFIC IMPACT STUDY)

Prepared for:

AECOM

Submitted by:

FEHR & PEERS
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949.859.3200

Ref: OC09-0128

August 2010

PROJECT CONDITIONS

PROJECT DESCRIPTION

Heber Dunes State Vehicular Recreation Area (SVRA) is located eight miles east of the community of Heber on Heber Road, near the intersection with Highway 7. Heber Dunes currently operates as a day use recreation area, open seven days a week year-round and operated by the California Department of Parks and Recreation. The visitors are mainly from the local community while attracting more visitors on the weekends and holidays such as President's Day.

The purpose of this study is to analyze the impacts associated with the projected increase in visitors for the General Plan planning horizon year of 2030. The report will discuss the methodology in determining the trip generation, trip distribution, trip assignment and the future conditions of the study intersections with the projected project trips.

TRIP GENERATION

Trip generation for the state park was completed by projecting the increase in the number of visitors to the state park for the future 2030 conditions. The projected increase in the number of visitors was determined to be 880 visitors for the peak weekend day use in the future which was determined by AECOM and approved for use by the California Department of Parks and Recreation. (EDAW AECOM, 2010) The projected increase in the number of visitors took into account the availability of space, constraints from shaded picnic areas, available riding areas and ranger oversight.

Using the standard CDPR estimates of 3.2 person per vehicle, applying it to the 880 visitors, we calculated an increase 275 vehicles during a peak weekend day. The vehicle trips into and out of the SVRA would be from the 275 vehicles and therefore, a projected 550 trips was used to obtain the projected trip generation of the SVRA.

The peak hour factor for the weekend trips were determined by obtaining the percentage of the existing peak hour trips in vs. the total trips in during the counted peak hour period, approximately 20%. The peak hour factor was then multiplied by 275 vehicle trips in the PM . This also verified that the ins and outs of the projected trips were taken into account.

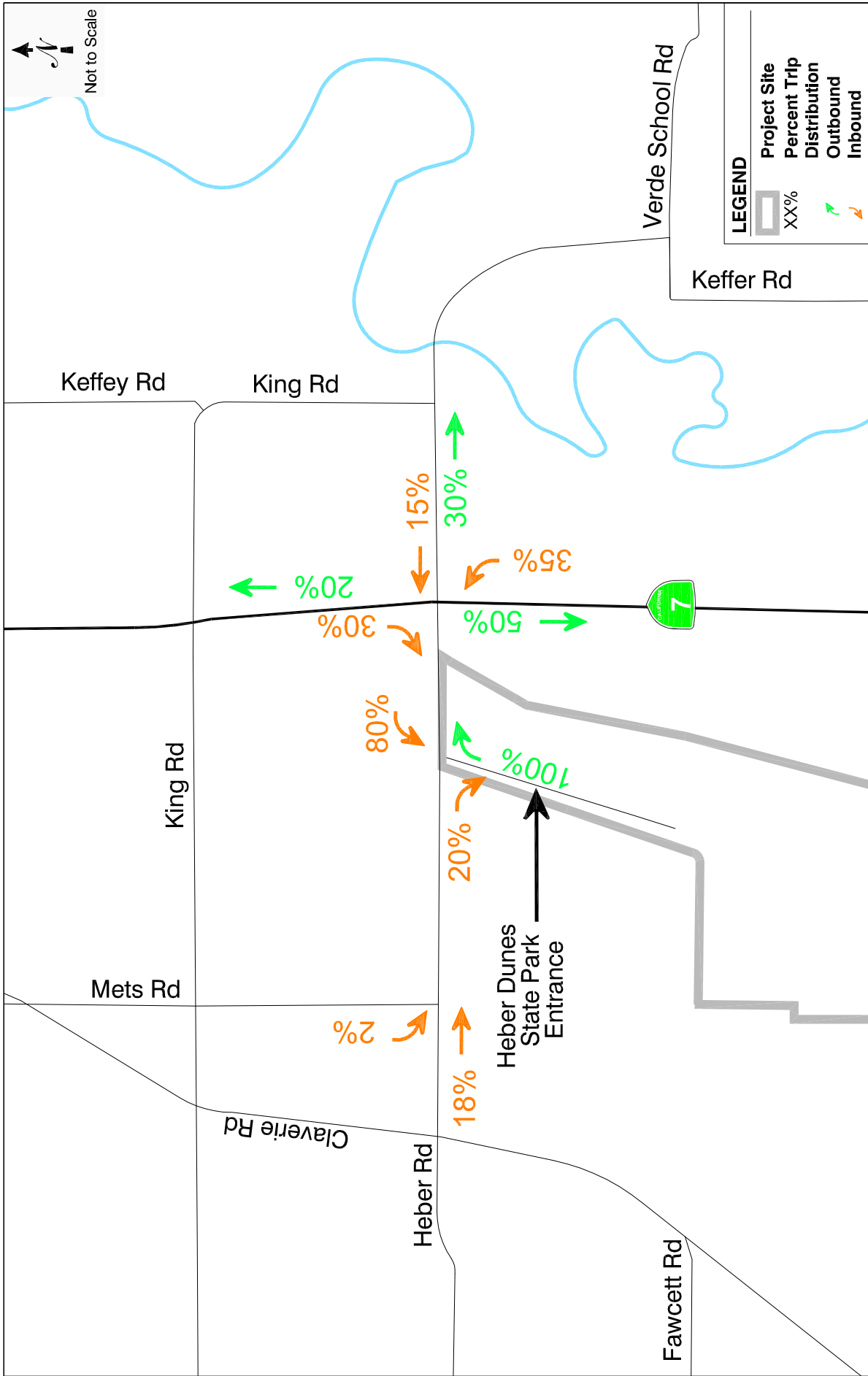
The weekday trips was also determined by obtaining the percentage of the total trips in/out on a weekday vs. the total trips in/out on a weekday and multiplied by the peak hour trips in the AM and PM peak hour trips of a weekend respectively.

TRIP DISTRIBUTION

The trip distribution was not expected to change since the number and locations of the entrances and exits to the SVRA were not expected to change. The existing trip distribution was determined from the existing turning movement counts obtained in February 2009.

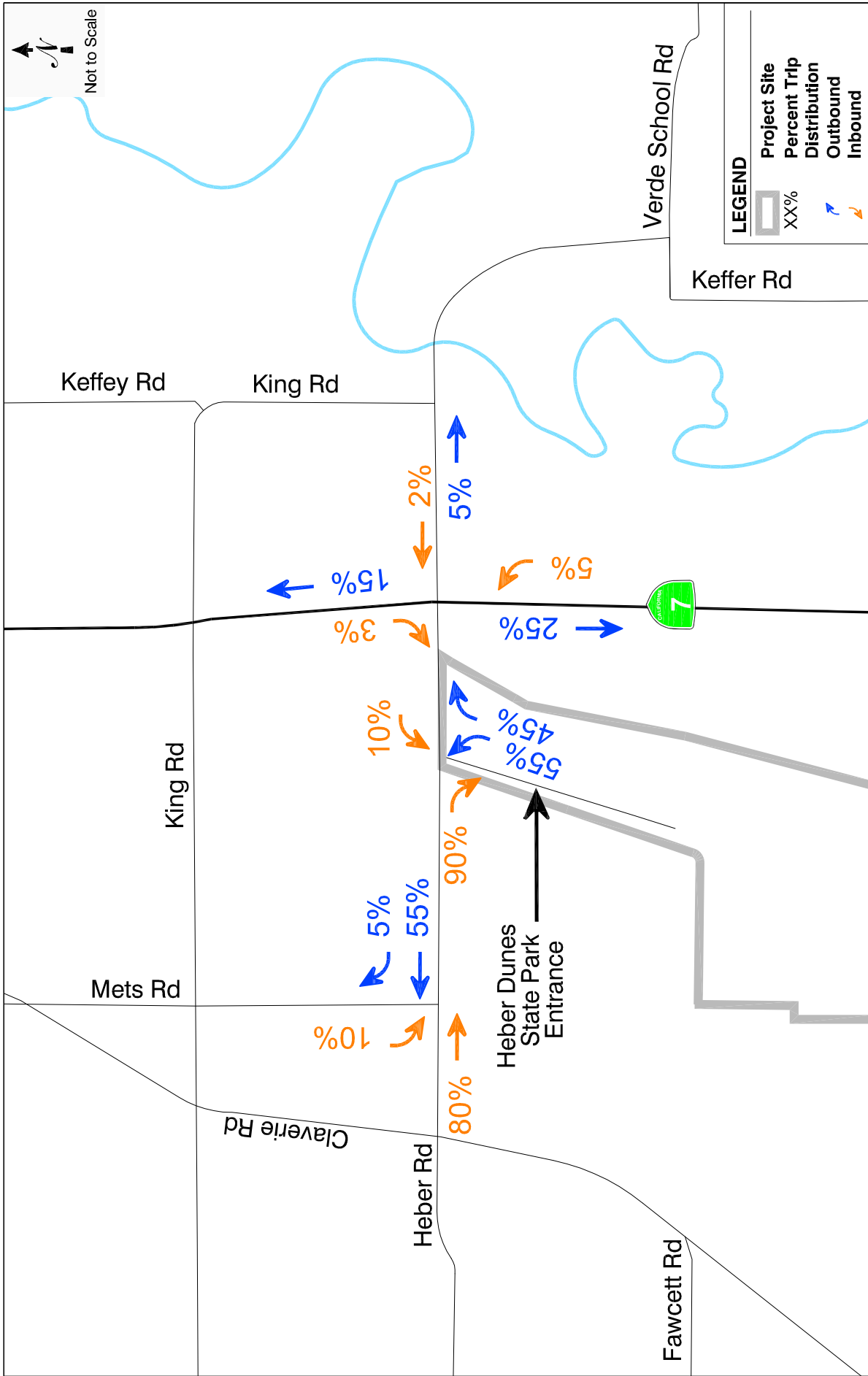
Based on the existing travel pattern and acknowledging that the future travel patterns are not likely to change since the entrances and exits are not changing, the existing trip distribution patterns were used for the future 2030 year conditions. **Figures 1, 2, and 3** below show the trip distribution patterns for the peak periods during the weekday AM, weekday PM, and weekend PM respectively.





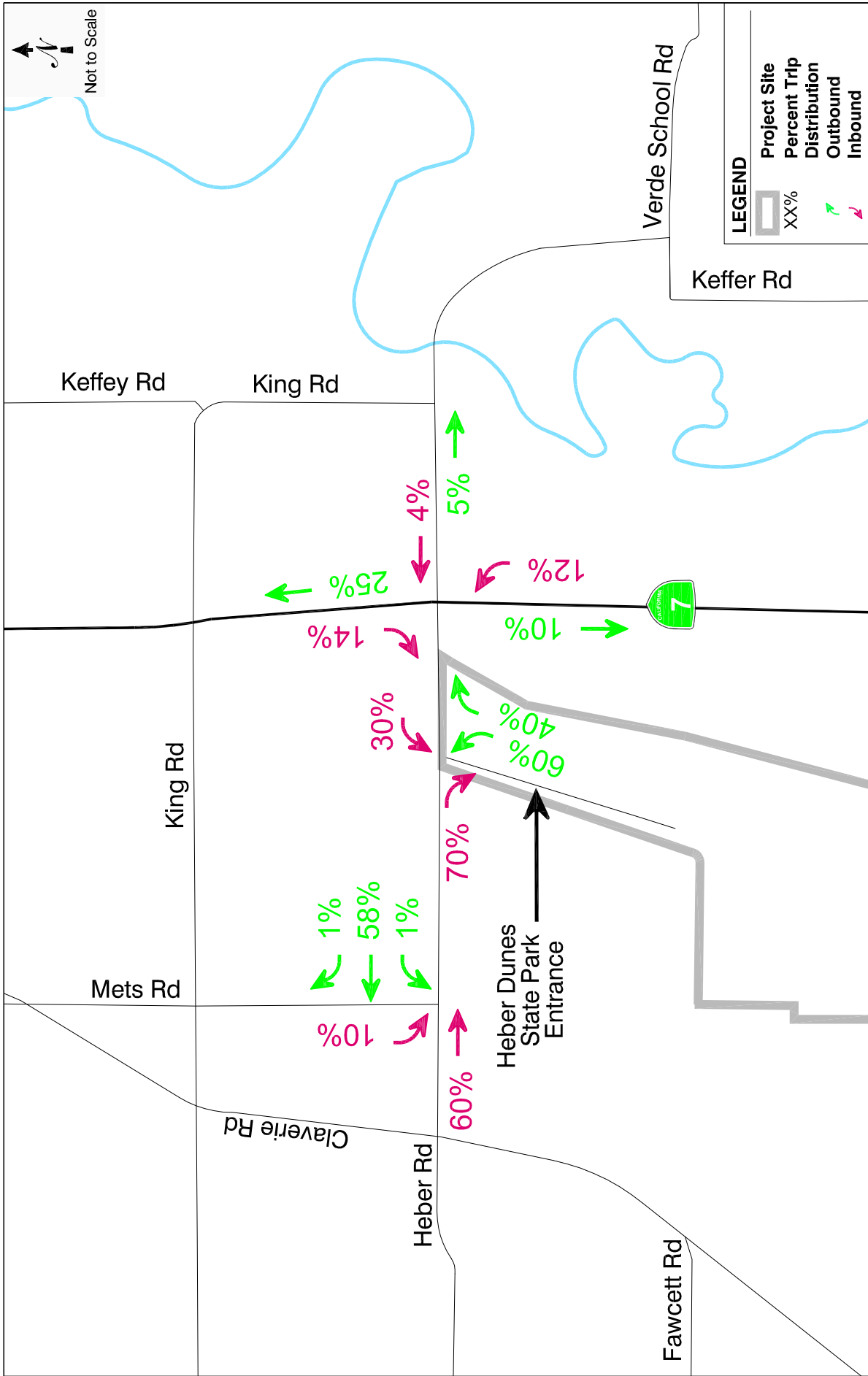
AM WEEKDAY TRIP DISTRIBUTION

FIGURE 1



PM WEEKDAY TRIP DISTRIBUTION

FIGURE 2



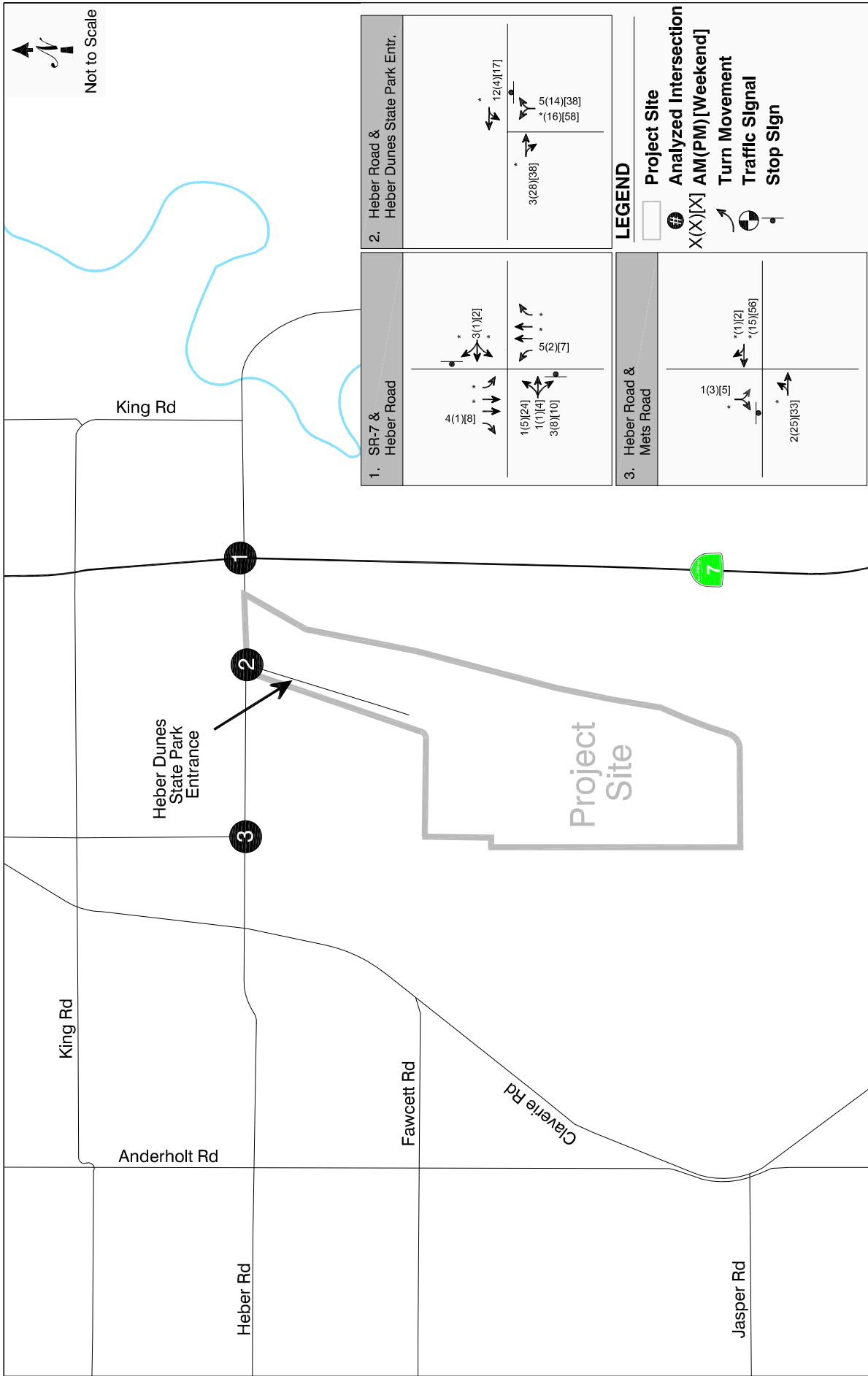
PM WEEKEND TRIP DISTRIBUTION

FIGURE 3

TRIP ASSIGNMENT

Vehicle trips that were generated by the project were assigned to the roadway segment using the distribution method described above. **Figure 4** identifies the project trip assignment for the study intersections.





CUMULATIVE CONDITIONS

PROJECTED STUDY AREA FUTURE VOLUMES AND PLANNED IMPROVEMENTS

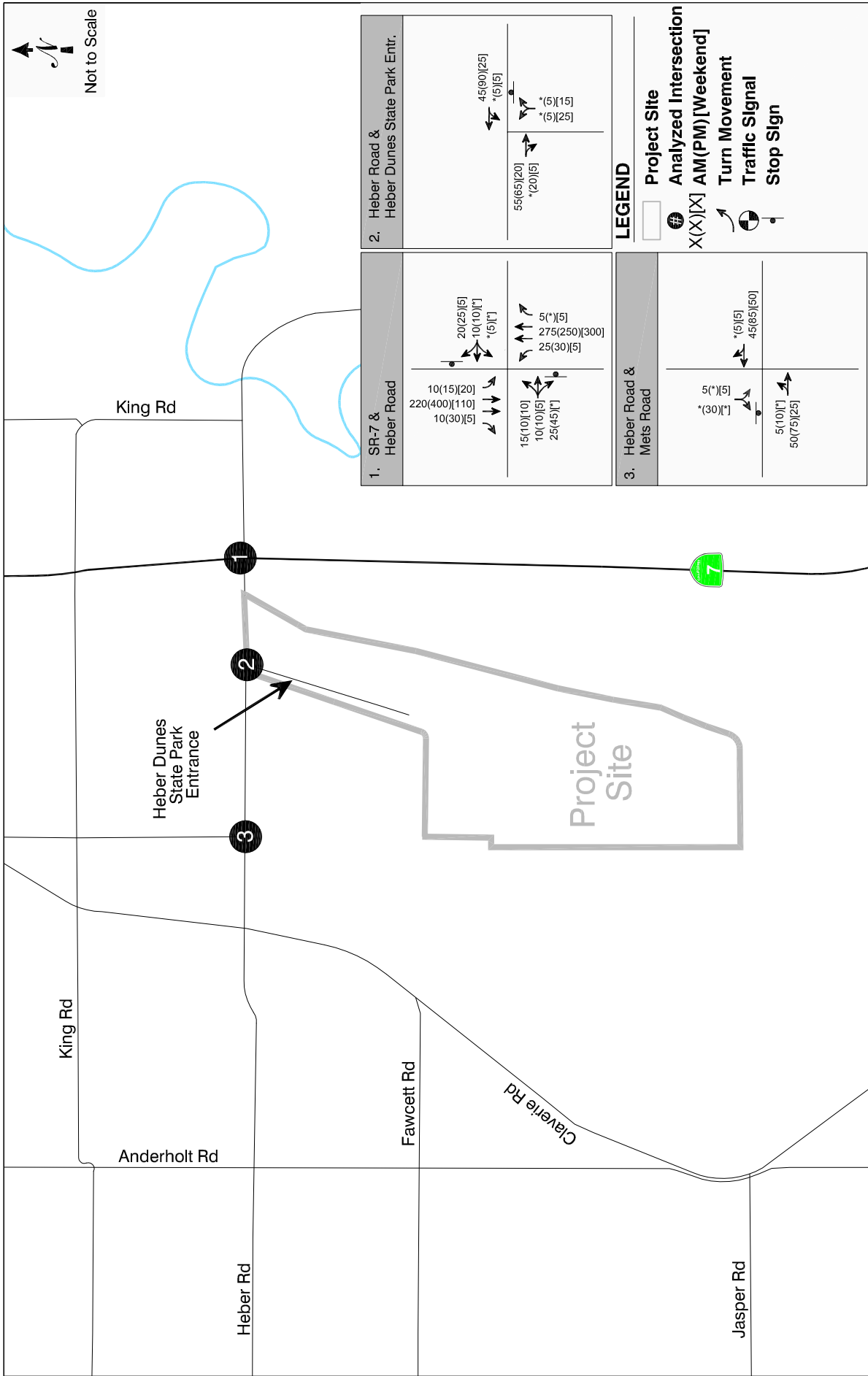
We received the Imperial County 2007 Transportation Plan Highway Element from Caltrans which contains information regarding planned improvements in the area in the near-term (2007-2015), mid-term (2015-2025), and long-term (2025 and beyond). Near-term projects in the study area include widening SR-98 from SR-111 to SR-7 from two to four lanes, widening Jasper Rd to become a six-lane expressway, widening SR-111 to a six-lane expressway, and constructing the SR-115 expressway to connect with I-8. Mid-term projects include improving the Bowker Road interchange with I-8. Long-term projects include construction of new interchange on SR-7 (just north of the project site) to access a planned future airport.

CUMULATIVE NO PROJECT INTERSECTION OPERATIONS

We applied the growth forecasts to the study intersections to develop Cumulative Year no project conditions. **Figure 5** identifies the Cumulative No Project traffic volumes. Table 1 identifies the operations under Cumulative conditions for weekday peak hours, while Table 2 identifies intersection operations for the weekend PM peak hour.

TABLE 1					
INTERSECTION LEVELS OF SERVICE – CUMULATIVE NO PROJECT					
AM AND PM PEAK HOURS - WEEKDAY					
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Heber Road / SR-7	Unsignalized	10.8	B	11.3	B
Heber Road / Heber Dunes Park Entrance	Unsignalized	8.6	A	9.1	A
Heber Road / Mets Road	Unsignalized	9.0	A	8.8	A

Source: *Fehr & Peers, 2010*



CUMULATIVE BASE NO PROJECT PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS

FIGURE 5

TABLE 2			
INTERSECTION LEVELS OF SERVICE – CUMULATIVE NO PROJECT			
SUNDAY PEAK HOUR - WEEKEND			
Intersection	Control	PM Peak Hour	
		Delay	LOS
Heber Road / SR-7	Unsignalized	11.1	B
Heber Road / Heber Dunes Park Entrance	Unsignalized	8.8	A
Heber Road / Mets Road	Unsignalized	8.9	A

Source: *Fehr & Peers, 2009*

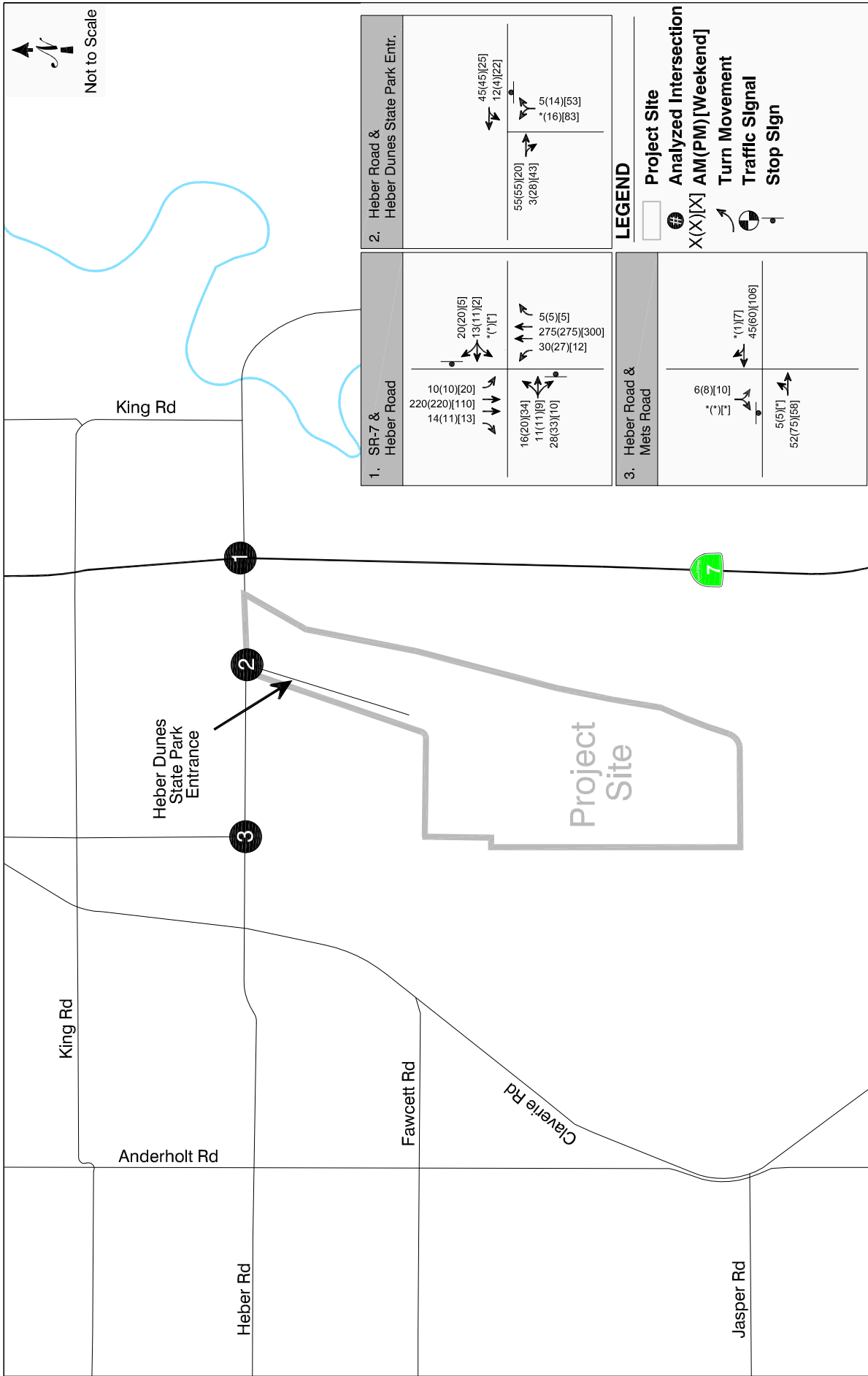
As shown in Tables 1 and 2, all study intersections operate sufficiently during AM and PM peak hours.

CUMULATIVE WITH PROJECT CONDITIONS

We applied the project traffic volumes that we had assigned to the study intersections to the Cumulative no Project forecasts. **Figure 6** shows the Cumulative with Project traffic conditions. Table 3 shows the level of service with project traffic conditions during the weekday peak and table 4 shows the level of service during the weekend PM peak hour.

TABLE 3					
INTERSECTION LEVELS OF SERVICE – CUMULATIVE WITH PROJECT					
AM AND PM PEAK HOURS - WEEKDAY					
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Heber Road / SR-7	Unsignalized	10.9	B	11.6	B
Heber Road / Heber Dunes Park Entrance	Unsignalized	8.6	A	9.4	A
Heber Road / Mets Road	Unsignalized	9.0	A	9.0	A

Source: *Fehr & Peers, 2010*



CUMULATIVE BASE WITH PROJECT PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS

FIGURE 6

TABLE 4			
INTERSECTION LEVELS OF SERVICE – CUMULATIVE WITH PROJECT			
SUNDAY PEAK HOUR - WEEKEND			
Intersection	Control	PM Peak Hour	
		Delay	LOS
Heber Road / SR-7	Unsignalized	11.1	B
Heber Road / Heber Dunes Park Entrance	Unsignalized	9.6	A
Heber Road / Mets Road	Unsignalized	9.5	A
Source: <i>Fehr & Peers, 2009</i>			

As identified in Tables 3 and 4, all intersections operate sufficiently during the analysis periods. Since the County maintains an LOS C significance threshold, and every intersection operates at LOS A or B, there are no significant impacts identified with regard to the project.

CUMULATIVE WITH PROJECT ROADWAY SEGMENT OPERATION

Based on the trip generation estimates obtained by AECOM and described earlier in the report, the project trips from the SVRA is a total of 550 trips. The existing ADT data was obtained in February 2009 on the President's day weekend (Friday, Saturday, and Sunday) along Heber Road from SR-7 to Heber Dunes entrance. Heber Road is classified as a Collector Street according to the Imperial County Standard street classification and has a LOS C roadway capacity of 7,100.

Daily capacity thresholds were obtained from the Imperial County General Plan, as shown below in Table 5. This table establishes the maximum daily roadway capacities by street classification. Vehicular traffic on Imperial County's roadway system should not exceed these capacities.

Road		Level of Service				
Class	X-Section	A	B	C	D	E
Prime Arterial	106/126	22,200	37,000	44,600	50,000	57,000
Major Arterial	82/102	14,800	24,700	29,600	33,400	37,000
Secondary Arterial	64/84	13,700	22,800	27,400	30,800	34,200
Collector Street	40/70	1,900	4,100	7,100	10,900	16,200
Local Street	40/60	*	*	4,500	*	*
Residential Street	40/60	*	*	1,500	*	*
Residential Cul-de-Sac	40/60	*	*	200	*	*

* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Source: *Imperial County General Plan, May 16, 1993.*

Using a growth factor (2.3% per year) and project horizon (Year 2030), the daily volumes from 2009 were increased to 2030 volumes to obtain cumulative no project ADT and Level of Service (LOS) is shown below in Table 6.

Street Segment	Street Classification	LOS C Capacity	Traffic Volume	LOS
Heber Road				
SR-7 to Heber Dunes Entrance	Collector	7,100		
			Friday	1675
			Saturday	1195
			Sunday	780

Source: *Fehr & Peers, 2010*

Based on the trip distribution patterns for a peak weekend day and analyzing the roadway segment along Heber Road from SR-7 to Heber Dunes Entrance, 30% of the traffic comes into the SVRA from east of the Heber Dunes Entrance and 40% leave going east of the Heber Dunes entrance. Project trips are estimated to be 275 vehicles which equal 550 trips total (275 in and 275 out). We applied the percentage of trips coming in and going out along Heber Road east of the Heber Dunes entrance and added it to the Cumulative no Project forecasts for each weekend day. (Friday was included as a weekend day). Table 7 below presents the cumulative with project projected daily traffic volumes and Level of Service (LOS) for the road segment of Heber Dunes adjacent to the Heber Dunes State Park entrance over a three day period.

TABLE 7				
CUMULATIVE WITH PROJECT DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE				
Street Segment	Street Classification	LOS C Capacity	Traffic Volume	LOS
Heber Road				
SR-7 to Heber Dunes Entrance	Collector	7,100		
		Friday	1870	A
		Saturday	1390	A
		Sunday	975	A
Source: <i>Fehr & Peers, 2010</i>				

As identified in Tables 5 and 6, the roadway segment along Heber Road from SR-7 to Heber Dunes entrance operate sufficiently during the analysis periods. Since the County maintains a LOS C significance threshold, and the street segment operates at LOS A, there are no significant impacts identified with regard to the project.

CONCLUSIONS

Fehr & Peers has analyzed the potential impacts from the projected increase in visitors for the Heber Dunes SVRA. Based on the above analysis, the study intersections and street segment operate at an acceptable level of service and no significant impacts are anticipated.



**APPENDIX A:
EXISTING TRAFFIC COUNTS**



Intersection Turning Movement

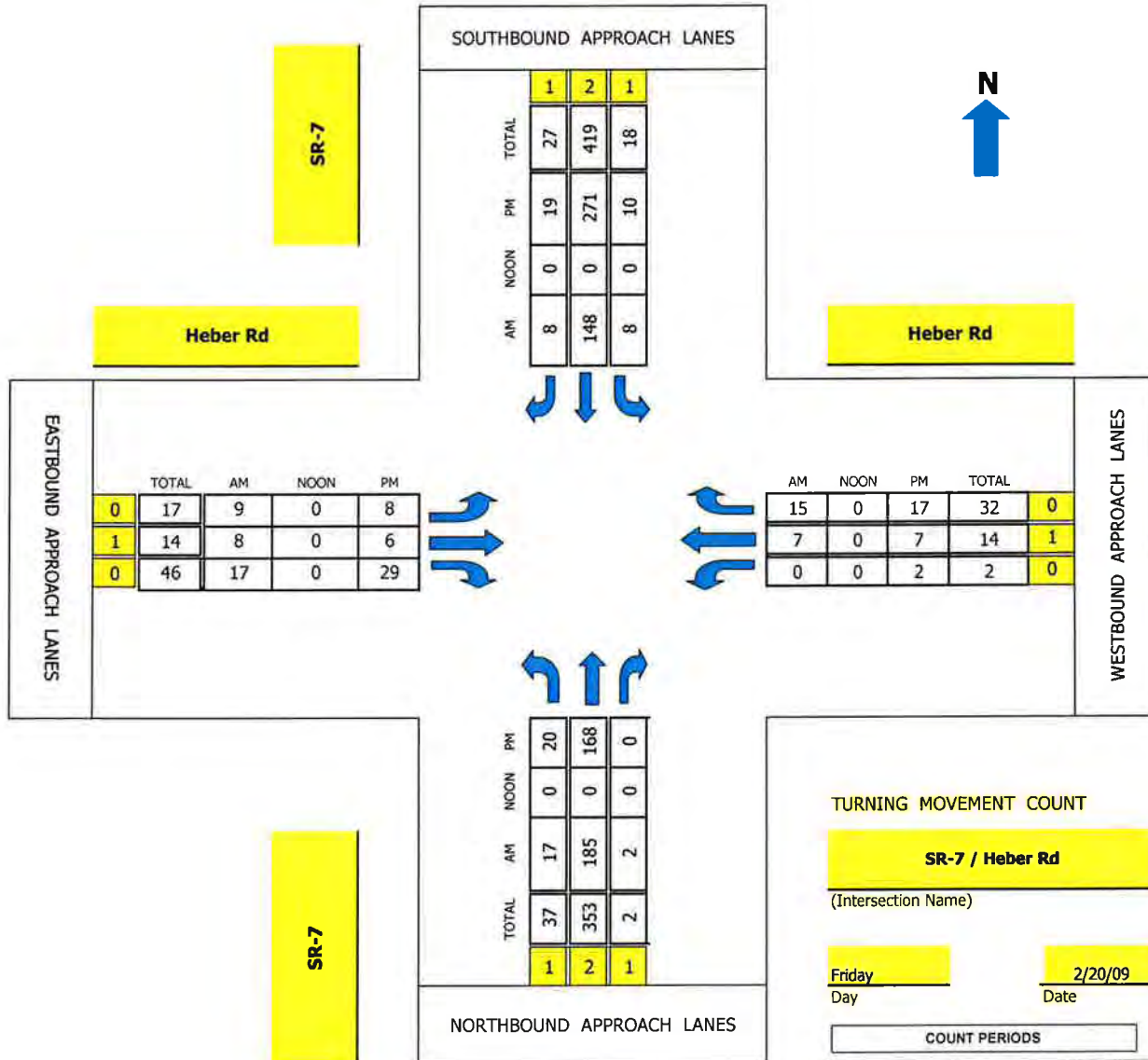
Prepared by:



National Data & Surveying Services

TMC Summary of SR-7/Heber Rd

Project #: 09-4064-001



AM PEAK HOUR 7:15 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 4:30 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-7	DATE: 2/20/2009	LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd	DAY: FRIDAY	PROJECT#: 09-4064-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	3	28	0	0	23	5	1	9	1	0	3	2	75
7:15 AM	4	68	0	1	25	0	2	6	3	0	2	5	116
7:30 AM	5	46	0	3	45	3	3	1	2	0	1	4	113
7:45 AM	4	46	2	2	45	2	1	1	5	0	2	5	115
8:00 AM	4	25	0	2	33	3	3	0	7	0	2	1	80
8:15 AM	2	34	0	2	32	3	1	3	5	0	2	6	90
8:30 AM	3	29	0	0	28	3	0	2	5	0	0	2	72
8:45 AM	6	39	0	4	27	5	0	2	5	0	0	1	89
9:00 AM	2	42	0	2	30	4	1	0	6	0	3	0	90
9:15 AM	5	33	0	0	34	3	2	2	1	1	2	5	88
9:30 AM	5	32	0	0	25	5	1	0	3	1	0	0	72
9:45 AM	4	23	1	2	30	8	1	1	2	1	1	0	74
TOTAL VOLUMES =	NL 47	NT 445	NR 3	SL 18	ST 377	SR 44	EL 16	ET 27	ER 45	WL 3	WT 18	WR 31	TOTAL 1074

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	17	185	2	8	148	8	9	8	17	0	7	15	424
PEAK HR. FACTOR:		0.708			0.804			0.773			0.786		0.914

CONTROL: 2-Way Stop (EW)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-7

DATE: 2/20/2009

LOCATION: City of Heber Dunes -
Imperial County

E-W STREET: Heber Rd

DAY: FRIDAY

PROJECT# 09-4064-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	2	1	1	2	1	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	6	41	0	2	38	6	5	0	1	0	10	4	113
3:15 PM	6	43	0	4	49	3	7	5	3	0	7	1	128
3:30 PM	6	41	0	3	50	4	6	1	10	1	4	8	134
3:45 PM	6	46	0	1	54	2	0	6	6	3	2	3	129
4:00 PM	5	44	0	0	52	5	4	3	8	0	0	3	124
4:15 PM	5	41	0	3	59	8	6	3	6	0	3	4	138
4:30 PM	6	47	0	1	71	7	2	2	7	1	1	4	149
4:45 PM	3	46	0	1	65	4	2	2	5	0	2	5	135
5:00 PM	6	31	0	3	70	4	0	0	7	0	3	6	130
5:15 PM	5	44	0	5	65	4	4	2	10	1	1	2	143
5:30 PM	4	43	0	2	74	4	4	1	8	0	1	1	142
5:45 PM	5	35	0	0	39	3	3	1	5	0	0	0	91
6:00 PM	3	50	0	0	56	3	7	0	10	0	2	2	133
6:15 PM	2	37	0	2	51	2	2	0	3	0	6	3	108
6:30 PM	5	36	0	2	45	1	0	0	4	0	0	0	93
6:45 PM	4	40	1	0	57	2	2	1	5	0	0	3	115
7:00 PM													
7:15 PM													
7:30 PM													
7:45 PM													
8:00 PM													
8:15 PM													
8:30 PM													
8:45 PM													
9:00 PM													
9:15 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	77	665	1	29	895	62	54	27	98	6	42	49	2005

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	20	168	0	10	271	19	8	6	29	2	7	17	557
PEAK HR. FACTOR:		0.887			0.949			0.672			0.722		0.935

CONTROL: 2-Way Stop (EW)

Intersection Turning Movement

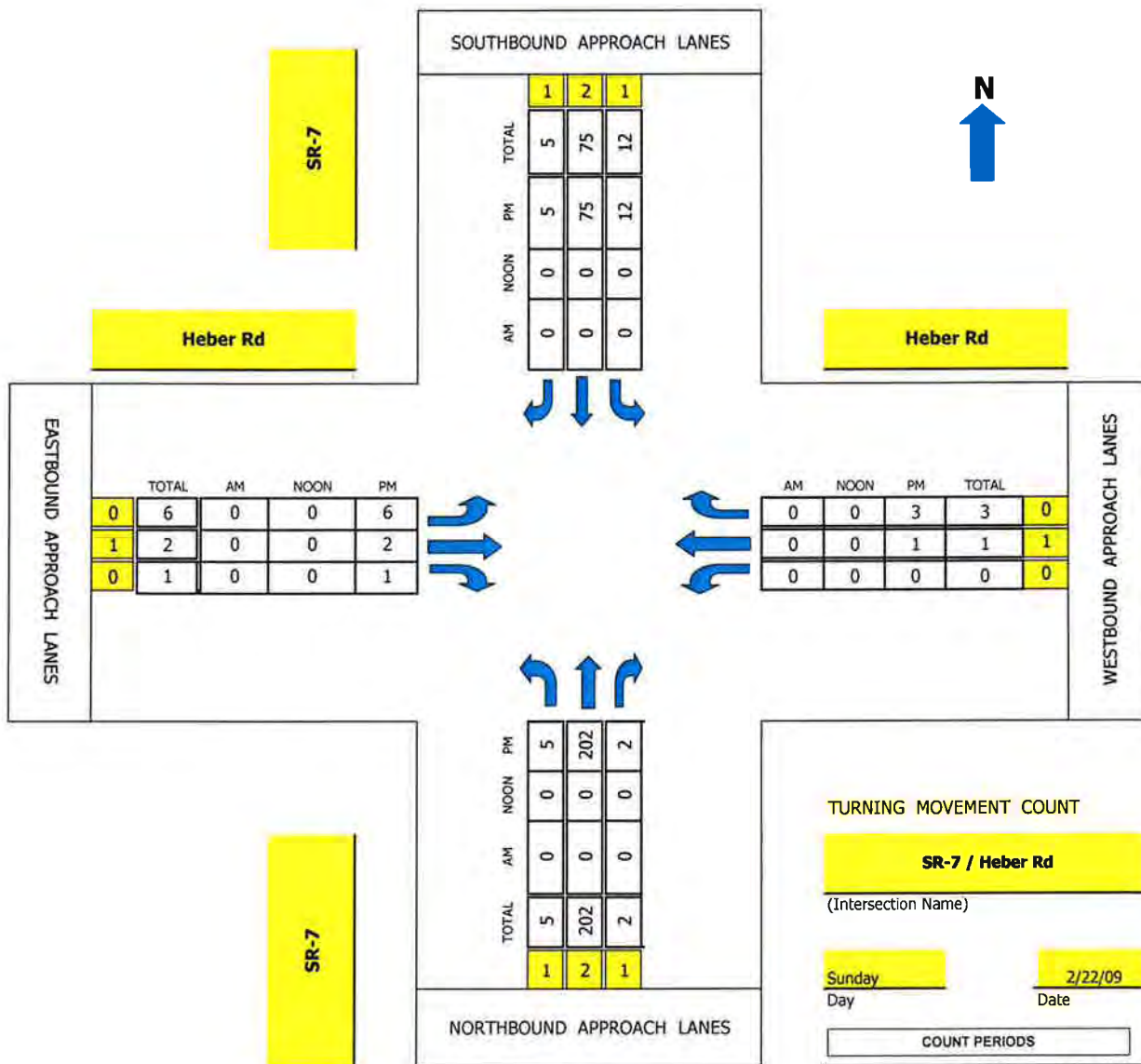
Prepared by:



National Data & Surveying Services

TMC Summary of SR-7/Heber Rd

Project #: 09-4064-001



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 700 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-7 DATE: 2/22/2009 LOCATION: City of Heber Dunes - Imperial County
 E-W STREET: Heber Rd DAY: SUNDAY PROJECT# 09-4064-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	2	1	1	2	1	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM	0	44	0	0	25	2	3	0	1		0	0	75
2:45 PM	1	48	0	1	18	4	3	0	3		0	0	78
3:00 PM	1	37	0	0	12	1	1	0	1		0	1	54
3:15 PM	1	44	0	2	21	3	2	2	0		0	1	76
3:30 PM	1	43	0	1	26	3	2	1	1		1	0	79
3:45 PM	2	40	0	0	21	1	2	0	0		0	0	66
4:00 PM	5	49	1	1	15	2	3	1	1		0	1	79
4:15 PM	0	43	0	1	23	1	4	0	0		1	0	73
4:30 PM	1	40	0	1	18	1	0	0	2		0	0	63
4:45 PM	5	26	0	1	24	2	6	0	1		0	2	67
5:00 PM	2	27	0	0	20	0	3	1	0		0	1	54
5:15 PM	2	39	0	1	16	4	4	0	2		2	3	73
5:30 PM	2	37	0	1	16	4	7	2	1		0	0	70
5:45 PM	1	51	1	0	16	1	5	1	0		1	1	78
6:00 PM	2	34	0	0	16	1	2	0	2		0	0	57
6:15 PM	2	46	0	0	11	3	1	0	1		0	1	65
6:30 PM	2	43	0	3	16	2	5	1	1		2	0	75
6:45 PM	0	51	0	2	18	0	1	0	0		1	0	73
7:00 PM	2	49	0	8	17	1	0	1	0		0	0	78
7:15 PM	0	51	0	3	14	2	2	0	1		1	2	76
7:30 PM	1	43	1	1	24	1	2	0	0		0	1	74
7:45 PM	2	59	1	0	20	1	2	1	0		0	0	86
8:00 PM	0	43	0	0	13	0	0	1	0		0	1	58
8:15 PM	3	43	0	0	11	0	2	0	0		0	0	59
8:30 PM	1	58	0	0	12	1	0	0	1		0	0	73
8:45 PM	0	53	0	1	11	1	1	1	0		0	0	68
9:00 PM	1	60	0	0	14	2	1	1	1		0	1	81
9:15 PM	1	46	0	0	12	1	0	0	2		1	5	68

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	41	1247	4	28	480	45	64	14	22	0	10	21	1976

PM Peak Hr Begins at: 700 PM

PEAK VOLUMES =	5	202	2	12	75	5	6	2	1	0	1	3	314
PEAK HR. FACTOR:		0.843			0.885			0.750			0.333		0.913

CONTROL: 2-Way Stop (EW)

Intersection Turning Movement

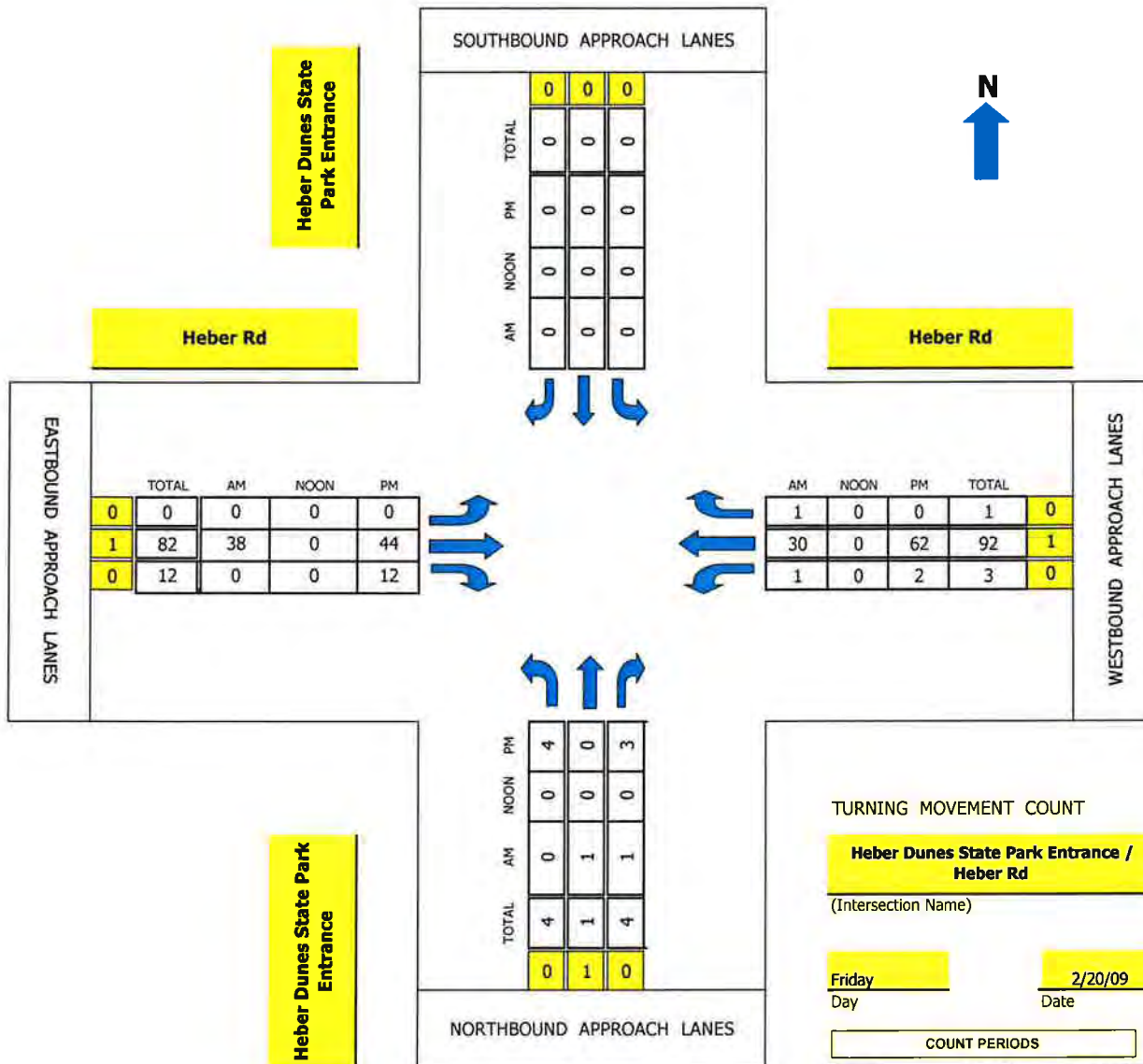
Prepared by:



National Data & Surveying Services

TMC Summary of Heber Dunes State Park Entrance/Heber Rd

Project #: 09-4064-002



AM PEAK HOUR 715 AM
 NOON PEAK HOUR 0 AM
 PM PEAK HOUR 300 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Heber Dunes State Park
Entrance

DATE: 2/20/2009

LOCATION: City of Heber Dunes -
Imperial County

E-W STREET: Heber Rd

DAY: FRIDAY

PROJECT# 09-4064-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	0	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		0	1					8	0	1	9	0	19
7:15 AM		1	0					11	0	0	6	0	18
7:30 AM		0	0					7	0	0	9	1	17
7:45 AM		0	1					10	0	0	7	0	18
8:00 AM		0	0					10	0	1	8	0	19
8:15 AM		0	0					7	1	0	7	0	15
8:30 AM		0	0					7	0	1	5	0	13
8:45 AM		0	0					6	0	1	9	0	16
9:00 AM		1	0					7	1	1	8	0	18
9:15 AM		0	0					5	0	0	11	0	16
9:30 AM		1	0					4	0	2	8	0	15
9:45 AM		0	1					5	0	2	10	0	18
TOTAL VOLUMES =	0	3	3	0	0	0	0	87	2	9	97	1	202

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	0	1	1	0	0	0	0	38	0	1	30	1	72
PEAK HR. FACTOR:		0.500			0.000			0.864			0.800		0.947

CONTROL: 1-Way Stop (NB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Heber Dunes State Park
Entrance

DATE: 2/20/2009

LOCATION: City of Heber Dunes -
Imperial County

E-W STREET: Heber Rd

DAY: FRIDAY

PROJECT# 09-4064-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
2:00 PM	0	1	0	0	0	0	0	1	0	0	1	0	
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	2		1					4	2	1	21	0	31
3:15 PM	0		0					13	3	1	14	0	31
3:30 PM	2		0					16	5	0	16	0	39
3:45 PM	0		2					11	2	0	11	0	26
4:00 PM	1		1					12	2	0	10	0	26
4:15 PM	0		0					17	3	0	14	0	34
4:30 PM	4		1					8	1	0	14	0	28
4:45 PM	2		0					11	0	0	10	0	23
5:00 PM	0		0					8	2	0	13	0	23
5:15 PM	0		0					15	0	0	10	1	26
5:30 PM	1		0					14	1	0	9	0	25
5:45 PM	1		2					10	0	0	6	0	19
6:00 PM	1		5					9	1	0	8	0	24
6:15 PM	0		0					6	0	0	11	0	17
6:30 PM	0		0					5	1	0	5	0	11
6:45 PM	0		0					7	1	0	7	0	15
7:00 PM													
7:15 PM													
7:30 PM													
7:45 PM													
8:00 PM													
8:15 PM													
8:30 PM													
8:45 PM													
9:00 PM													
9:15 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	14	0	12	0	0	0	0	166	24	2	179	1	398

PM Peak Hr Begins at: 300 PM

PEAK VOLUMES =	4	0	3	0	0	0	0	44	12	2	62	0	127
PEAK HR. FACTOR:		0.583			0.000			0.667			0.727		0.814

CONTROL: 1-Way Stop (NB)

Intersection Turning Movement

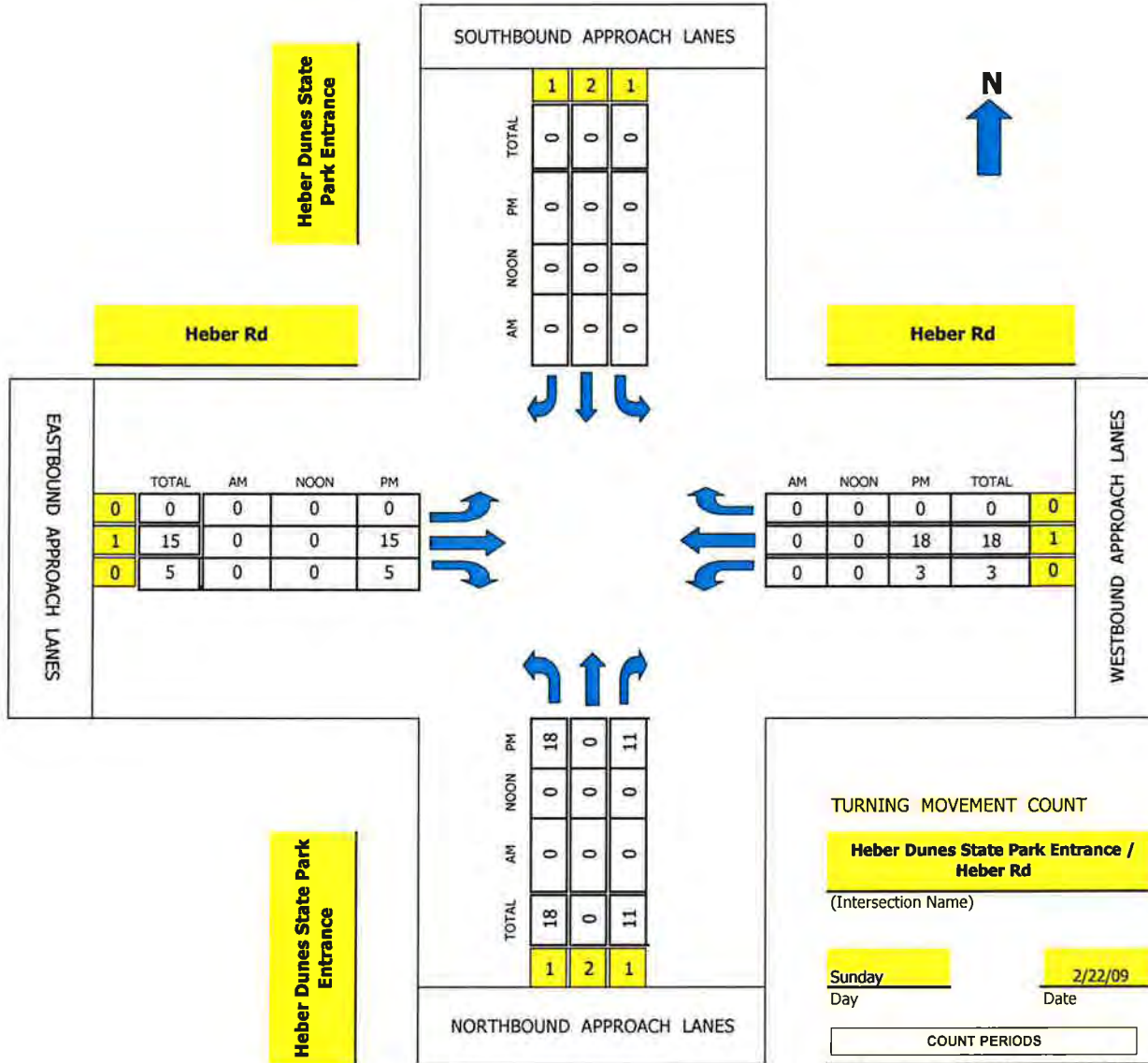
Prepared by:



National Data & Surveying Services

TMC Summary of Heber Dunes State Park Entrance/Heber Rd

Project #: 09-4064-002



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 445 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Heber Dunes State Park Entrance DATE: 2/22/2009 LOCATION: City of Heber Dunes - Imperial County
 E-W STREET: Heber Rd DAY: SUNDAY PROJECT#: 09-4064-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
2:00 PM	0	1	0	0	0	0	0	1	0	0	1	0	
2:15 PM													
2:30 PM	1		0	0				5	3	1	2		12
2:45 PM	1		3	0				2	1	2	2		11
3:00 PM	3		0	0				2	5	1	1		12
3:15 PM	3		0	0				3	1	0	4		11
3:30 PM	1		0	0				3	5	0	5		14
3:45 PM	2		1	0				3	4	0	4		14
4:00 PM	0		1	0				2	1	1	5		10
4:15 PM	4		2	0				1	2	0	2		11
4:30 PM	1		2	0				1	2	1	2		9
4:45 PM	6		3	0				3	1	2	4		19
5:00 PM	4		1	0				3	3	0	2		13
5:15 PM	2		3	0				4	1	1	7		18
5:30 PM	6		4	0				5	0	0	5		20
5:45 PM	3		2	0				3	3	0	2		13
6:00 PM	3		2	2				1	0	2	2		12
6:15 PM	0		1	0				2	0	0	5		8
6:30 PM	4		3	0				4	1	1	4		17
6:45 PM	3		0	0				0	0	0	2		5
7:00 PM	0		0	0				2	0	0	3		5
7:15 PM	1		0	0				2	0	0	3		6
7:30 PM	1		1	0				3	0	0	2		7
7:45 PM	1		0	0				2	0	0	2		5
8:00 PM	2		2	0				0	0	0	1		5
8:15 PM	1		0	0				2	0	0	2		5
8:30 PM	1		0	0				1	0	0	2		4
8:45 PM	0		0	0				2	0	0	1		3
9:00 PM	0		0	0				2	0	0	3		5
9:15 PM	0		0	0				2	0	0	3		5

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	54	0	31	2	0	0	0	65	33	12	82	0	279

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	18	0	11	0	0	0	0	15	5	3	18	0	70
PEAK HR. FACTOR:		0.725			0.000			0.833			0.656		0.875

CONTROL: 1-Way Stop (NB)

Intersection Turning Movement

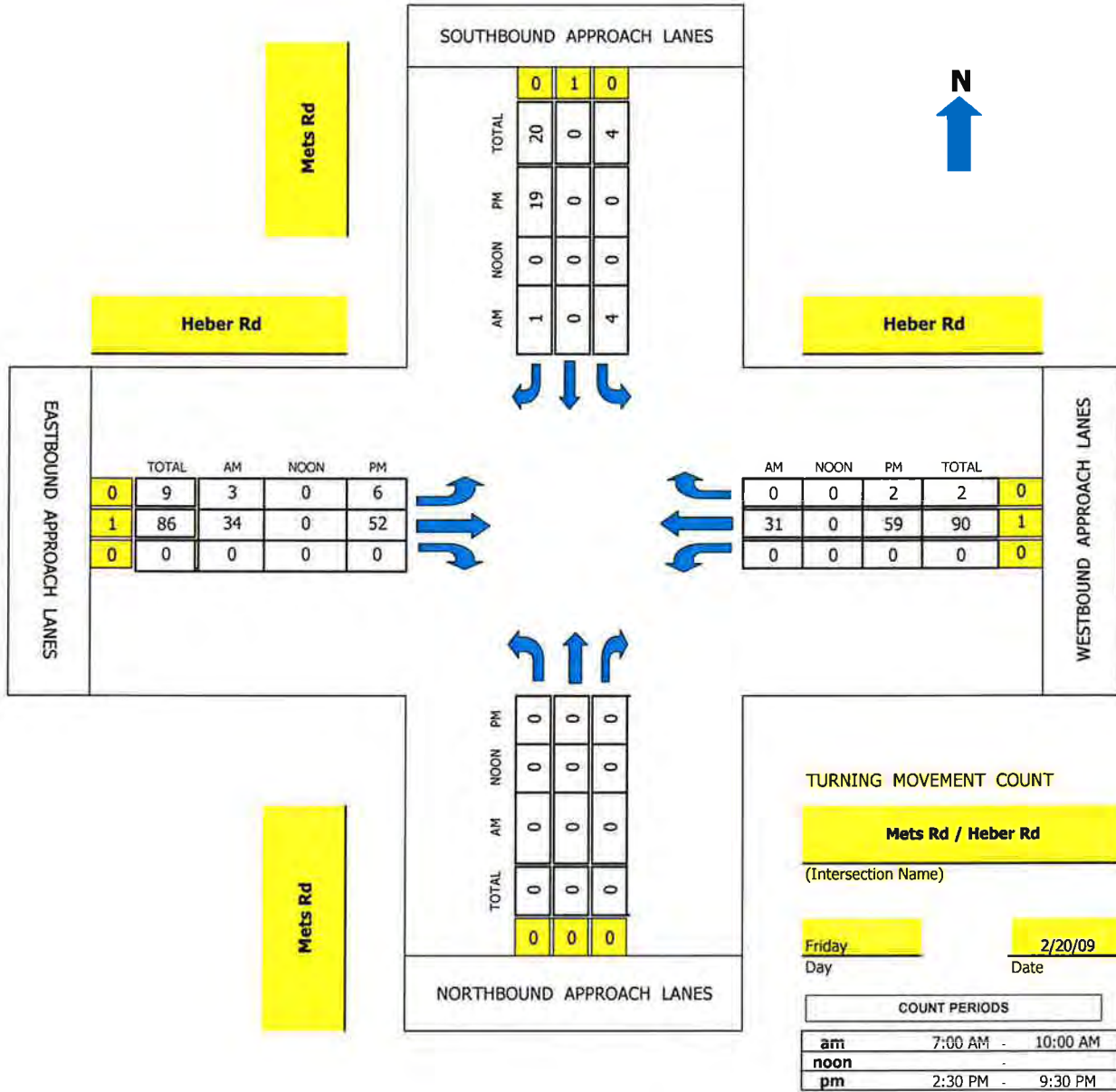
Prepared by:



National Data & Surveying Services

TMC Summary of Mets Rd/Heber Rd

Project #: 09-4064-003



AM PEAK HOUR 700 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 415 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: **Mets Rd** DATE: **2/20/2009** LOCATION: **City of Heber Dunes - Imperial County**
 E-W STREET: **Heber Rd** DAY: **FRIDAY** PROJECT# **09-4064-003**

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	0	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				0		0	1	10		8	0		19
7:15 AM				3		0	0	7		8	0		18
7:30 AM				1		0	1	6		7	0		15
7:45 AM				0		1	1	11		8	0		21
8:00 AM				0		0	0	9		8	0		17
8:15 AM				1		1	1	7		7	1		18
8:30 AM				0		0	1	7		3	0		11
8:45 AM				1		2	0	5		9	0		17
9:00 AM				1		1	0	8		8	1		19
9:15 AM				0		0	0	6		10	0		16
9:30 AM				1		0	2	4		6	1		14
9:45 AM				1		1	0	5		9	0		16

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	9	0	6	7	85	0	0	91	3	201

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	4	0	1	3	34	0	0	31	0	73
PEAK HR. FACTOR:	0.000			0.417			0.771			0.969			0.869

CONTROL: 1-Way Stop (SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Mets Rd

DATE: 2/20/2009

LOCATION: City of Heber Dunes -
Imperial County

E-W STREET: Heber Rd

DAY: FRIDAY

PROJECT# 09-4064-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	0	0	0	1	0	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM				0	0	1	2	6		0	18	3	30
3:15 PM				0	1	0	0	19		0	11	2	33
3:30 PM				1	0	2	0	16		0	16	0	35
3:45 PM				5	0	0	0	8		0	9	0	22
4:00 PM				3	0	0	0	14		0	12	1	30
4:15 PM				0	0	4	2	19		0	14	0	39
4:30 PM				0	0	1	2	9		0	20	0	32
4:45 PM				0	0	11	0	9		0	10	1	31
5:00 PM				0	0	3	2	15		0	15	1	36
5:15 PM				3	0	3	1	9		0	9	1	26
5:30 PM				0	0	0	1	12		0	10	0	23
5:45 PM				1	0	2	0	12		0	9	0	24
6:00 PM				0	0	0	2	8		0	10	0	20
6:15 PM				0	0	2	0	4		0	8	2	16
6:30 PM				0	0	0	0	6		0	4	0	10
6:45 PM				0	0	0	1	8		1	10	0	20
7:00 PM													
7:15 PM													
7:30 PM													
7:45 PM													
8:00 PM													
8:15 PM													
8:30 PM													
8:45 PM													
9:00 PM													
9:15 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	13	1	29	13	174	0	1	185	11	427

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	0	0	0	0	0	19	6	52	0	0	59	2	138
PEAK HR. FACTOR:		0.000			0.432			0.690			0.763		0.885

CONTROL: 1-Way Stop (SB)

Intersection Turning Movement

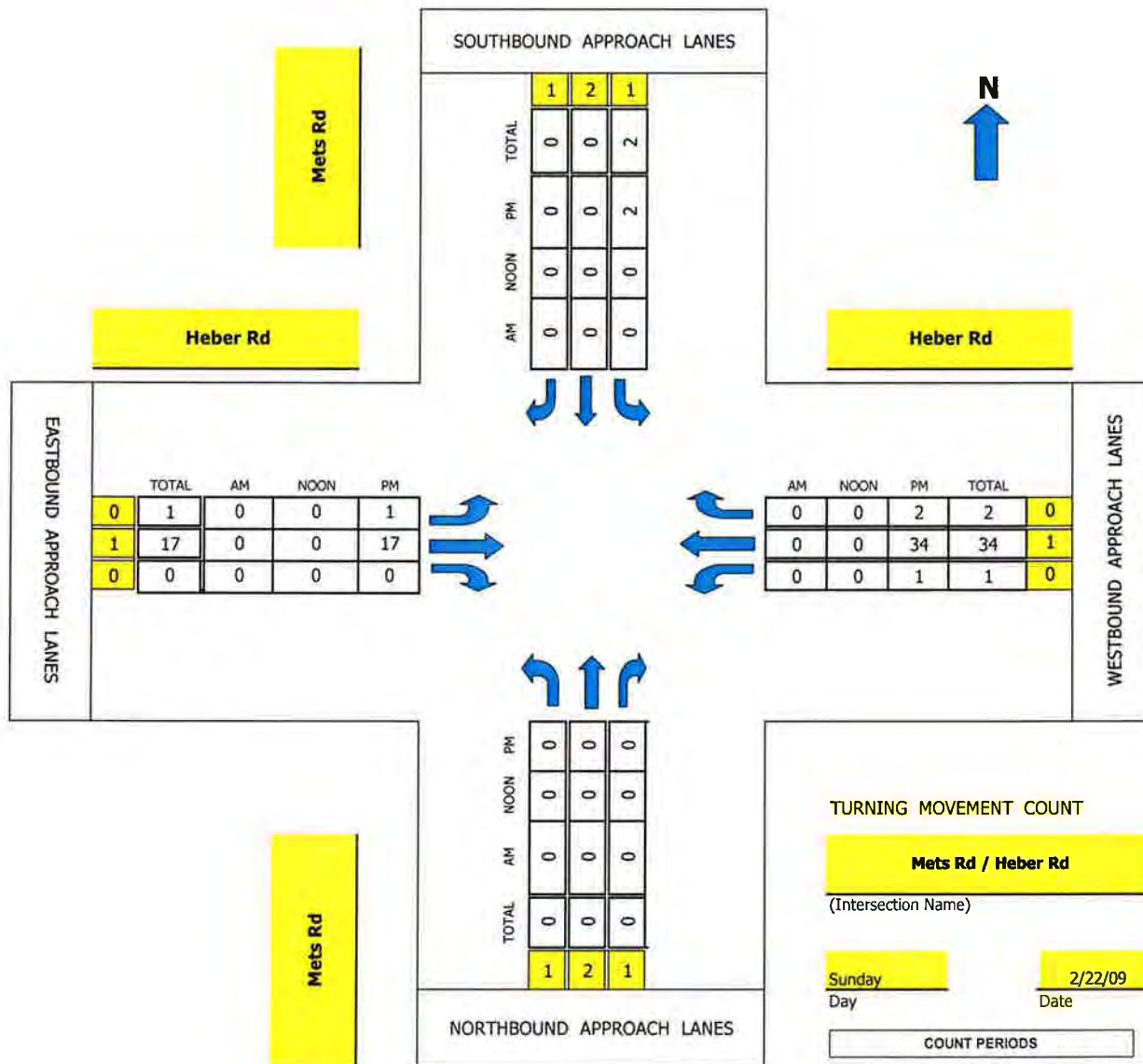
Prepared by:



National Data & Surveying Services

TMC Summary of Mets Rd/Heber Rd

Project #: 09-4064-003



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 445 PM

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: Mets Rd DATE: 2/22/2009 LOCATION: City of Heber Dunes - Imperial County
E-W STREET: Heber Rd DAY: SUNDAY PROJECT#: 09-4064-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	0	0	0	1	0	0	1	0	0	1	0	
2:00 PM													
2:15 PM													
2:30 PM				0		0	0	8		0	4	0	12
2:45 PM				0		0	0	3		0	3	0	6
3:00 PM				1		1	0	6		0	4	0	12
3:15 PM				1		0	0	3		0	6	0	10
3:30 PM				0		0	0	7		0	6	1	14
3:45 PM				1		0	1	7		0	5	0	14
4:00 PM				0		2	0	2		0	5	1	10
4:15 PM				0		0	0	3		0	6	0	9
4:30 PM				1		0	1	3		0	3	0	8
4:45 PM				0		0	0	3		0	10	1	14
5:00 PM				0		0	1	6		0	6	0	13
5:15 PM				0		0	0	5		0	7	1	13
5:30 PM				2		0	0	3		1	11	0	17
5:45 PM				0		0	1	7		0	5	0	13
6:00 PM				0		0	0	1		0	5	0	6
6:15 PM				1		0	0	2		0	5	0	8
6:30 PM				0		0	0	4		1	7	0	12
6:45 PM				0		0	0	0		0	4	0	4
7:00 PM				0		0	0	2		0	4	0	6
7:15 PM				2		0	0	1		0	3	0	6
7:30 PM				0		0	0	2		0	2	0	4
7:45 PM				0		0	2	2		0	4	0	8
8:00 PM				0		0	0	1		0	2	0	3
8:15 PM				0		0	0	2		0	3	0	5
8:30 PM				0		0	0	1		0	3	0	4
8:45 PM				0		0	0	2		0	1	0	3
9:00 PM				0		0	0	4		0	4	0	8
9:15 PM				0		0	0	1		0	3	0	4

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	9	0	3	6	91	0	2	131	4	246

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	0	0	0	2	0	0	1	17	0	1	34	2	57
PEAK HR. FACTOR:	0.000			0.250			0.643			0.771			0.838

CONTROL: 1-Way Stop (SB)

Prepared by NDS/ATD

Volumes for: Friday, February 20, 2009 City: Heber Dunes - Imperial County Project #: 09-4065-001
Location: Heber Rd W/o SR-7

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			1	4	12:00			7	8			
00:15			1	1	12:15			10	7			
00:30			0	0	12:30			6	15			
00:45			1	3	12:45			8	31	3	33	64
01:00			0	0	13:00			9	12			
01:15			0	0	13:15			11	10			
01:30			0	0	13:30			8	7			
01:45			0	0	13:45			9	37	5	34	71
02:00			1	0	14:00			8	4			
02:15			0	1	14:15			10	14			
02:30			0	0	14:30			9	16			
02:45			2	3	14:45			11	38	9	43	81
03:00			2	2	15:00			7	24			
03:15			1	0	15:15			17	11			
03:30			2	2	15:30			16	18			
03:45			2	7	15:45			11	51	10	63	114
04:00			1	3	16:00			15	10			
04:15			3	2	16:15			17	12			
04:30			4	2	16:30			8	18			
04:45			3	11	16:45			8	48	11	51	99
05:00			9	0	17:00			14	15			
05:15			2	0	17:15			10	8			
05:30			14	4	17:30			11	10			
05:45			13	38	17:45			12	47	9	42	89
06:00			6	5	18:00			9	9			
06:15			11	7	18:15			4	8			
06:30			8	5	18:30			7	5			
06:45			10	35	18:45			11	31	8	30	61
07:00			10	9	19:00			10	4			
07:15			10	7	19:15			6	5			
07:30			6	8	19:30			1	6			
07:45			11	37	19:45			1	18	2	17	35
08:00			11	12	20:00			2	3			
08:15			8	8	20:15			3	6			
08:30			7	4	20:30			1	7			
08:45			6	32	20:45			2	8	2	18	26
09:00			13	8	21:00			2	2			
09:15			2	9	21:15			1	3			
09:30			2	13	21:30			2	3			
09:45			4	21	21:45			3	8	2	10	18
10:00			10	4	22:00			0	0			
10:15			2	5	22:15			4	1			
10:30			4	6	22:30			1	2			
10:45			5	21	22:45			1	6	4	7	13
11:00			4	11	23:00			0	3			
11:15			3	8	23:15			2	2			
11:30			9	6	23:30			0	1			
11:45			6	22	23:45			1	3	1	7	10

Total Vol. 230 218 448 326 355 681

Daily Totals					
		NB	SB	EB	WB
		Combined		556	573
1129					

Split %	AM			PM		
	51.3%	48.7%	39.7%	47.9%	52.1%	60.3%
Peak Hour	05:30	09:00	07:15	15:15	14:15	15:00
Volume	44	42	73	59	63	114
P.H.F.	0.79	0.81	0.79	0.87	0.66	0.84

Prepared by NDS/ATD

Volumes for: Saturday, February 21, 2009

City: Heber Dunes - Imperial County

Project #: 09-4065-001

Location: Heber Rd W/o SR-7

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB				
00:00			0	2	12:00			4	2				
00:15			1	0	12:15			7	13				
00:30			1	0	12:30			3	7				
00:45			0	2	0	2	4	12:45	2	16	13	35	51
01:00			0	0	13:00			6	12				
01:15			2	0	13:15			6	8				
01:30			3	2	13:30			12	11				
01:45			1	6	0	2	8	13:45	8	32	6	37	69
02:00			0	0	14:00			14	20				
02:15			1	0	14:15			9	5				
02:30			3	0	14:30			10	5				
02:45			0	4	0	0	4	14:45	4	37	20	50	87
03:00			0	0	15:00			6	9				
03:15			0	0	15:15			6	5				
03:30			2	1	15:30			11	7				
03:45			0	2	0	1	3	15:45	10	33	6	27	60
04:00			3	0	16:00			8	9				
04:15			1	0	16:15			7	11				
04:30			5	1	16:30			4	4				
04:45			4	13	1	2	15	16:45	6	25	9	33	58
05:00			5	0	17:00			5	8				
05:15			6	0	17:15			3	2				
05:30			5	0	17:30			3	8				
05:45			12	28	2	2	30	17:45	10	21	7	25	46
06:00			4	3	18:00			3	9				
06:15			9	4	18:15			3	4				
06:30			7	4	18:30			4	3				
06:45			4	24	2	13	37	18:45	1	11	5	21	32
07:00			3	4	19:00			1	3				
07:15			6	3	19:15			2	1				
07:30			7	4	19:30			2	3				
07:45			4	20	2	13	33	19:45	2	7	4	11	18
08:00			4	5	20:00			3	2				
08:15			2	2	20:15			1	6				
08:30			4	5	20:30			3	3				
08:45			4	14	4	16	30	20:45	4	11	3	14	25
09:00			3	8	21:00			2	3				
09:15			3	6	21:15			2	2				
09:30			3	8	21:30			2	2				
09:45			6	15	4	26	41	21:45	0	6	4	11	17
10:00			7	7	22:00			1	6				
10:15			5	3	22:15			1	4				
10:30			6	7	22:30			0	3				
10:45			5	23	7	24	47	22:45	4	6	1	14	20
11:00			12	7	23:00			0	0				
11:15			11	8	23:15			1	3				
11:30			5	4	23:30			0	2				
11:45			9	37	10	29	66	23:45	0	1	0	5	6

Total Vol. 188 130 **318** 206 283 **489**

Daily Totals

NB	SB	EB	WB
		394	413
807			

Split %	AM			PM		
	59.1%	40.9%	39.4%	42.1%	57.9%	60.6%
Peak Hour	11:00	11:45	11:00	13:30	14:00	14:00
Volume	37	32	66	43	50	87
P.H.F.	0.77	0.62	0.87	0.77	0.63	0.64

Prepared by NDS/ATD

Volumes for: Sunday, February 22, 2009

City: Heber Dunes - Imperial County

Project #: 09-4065-001

Location: Heber Rd W/o SR-7

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			0	1	12:00			7	5			
00:15			1	0	12:15			5	3			
00:30			0	2	12:30			6	3			
00:45			0	1	1	4	5	7	25	3	14	39
01:00			0	0	13:00			3	3			
01:15			0	1	13:15			3	4			
01:30			0	0	13:30			1	2			
01:45			0	0	1	1		9	16	5	14	30
02:00			0	0	14:00			9	6			
02:15			0	0	14:15			4	7			
02:30			1	0	14:30			8	2			
02:45			0	1	0	1		3	24	4	19	43
03:00			1	0	15:00			4	4			
03:15			1	1	15:15			5	6			
03:30			0	0	15:30			6	5			
03:45			0	2	0	1	3	6	21	5	20	41
04:00			0	0	16:00			3	7			
04:15			0	0	16:15			3	6			
04:30			0	0	16:30			4	0			
04:45			3	3	0	0	3	3	13	10	23	36
05:00			1	1	17:00			6	6			
05:15			0	0	17:15			5	6			
05:30			3	0	17:30			5	9			
05:45			7	11	0	1	12	7	23	6	27	50
06:00			1	2	18:00			1	5			
06:15			3	1	18:15			4	4			
06:30			3	2	18:30			4	9			
06:45			2	9	0	5	14	0	9	4	22	31
07:00			0	6	19:00			2	3			
07:15			2	6	19:15			2	4			
07:30			4	5	19:30			2	3			
07:45			3	9	5	22	31	2	8	3	13	21
08:00			3	0	20:00			1	5			
08:15			4	7	20:15			0	1			
08:30			2	3	20:30			1	3			
08:45			3	12	1	11	23	2	4	1	10	14
09:00			3	1	21:00			5	3			
09:15			2	6	21:15			1	3			
09:30			2	4	21:30			0	2			
09:45			2	9	4	15	24	1	7	2	10	17
10:00			3	8	22:00			1	1			
10:15			3	6	22:15			3	0			
10:30			6	4	22:30			1	1			
10:45			6	18	2	20	38	0	5	0	2	7
11:00			7	1	23:00			1	1			
11:15			3	10	23:15			1	0			
11:30			5	5	23:30			0	1			
11:45			2	17	2	18	35	0	2	4	6	8

Total Vol. 92 98 190 157 180 337

Daily Totals

NB	SB	EB	WB
		249	278
527			

Split %	AM			PM		
	48.4%	51.6%	36.1%	46.6%	53.4%	63.9%
Peak Hour	10:15	07:00	10:30	13:45	16:45	13:45
Volume	22	22	39	30	31	50
P.H.F.	0.79	0.92	0.75	0.83	0.78	0.83

**APPENDIX B.1:
HCS WORKSHEETS – CUMULATIVE NO PROJECT**



TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	AM Peak Hour - Weekday		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>Heber Dunes Entrance</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		55	0	0	45	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	57	0	0	47	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)			1			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	1	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	0	0
Configuration			<i>R</i>			

Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>			<i>R</i>			
v (veh/h)		0			1			
C (m) (veh/h)		1560			1015			
v/c		0.00			0.00			
95% queue length		0.00			0.00			
Control Delay (s/veh)		7.3			8.6			
LOS		<i>A</i>			<i>A</i>			
Approach Delay (s/veh)	--	--	8.6					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	PM Peak Hour - Weekday		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>Heber Dunes Entrance</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		65	20	5	90	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	68	21	5	94	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	5		5			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	5	0	5	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
v (veh/h)		5		10				
C (m) (veh/h)		1519		890				
v/c		0.00		0.01				
95% queue length		0.01		0.03				
Control Delay (s/veh)		7.4		9.1				
LOS		<i>A</i>		<i>A</i>				
Approach Delay (s/veh)	--	--	9.1					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	PM Peak Hour - Weekend		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>Heber Dunes Entrance</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		20	5	5	25	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	21	5	5	26	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	25		15			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	26	0	15	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
v (veh/h)		5		41				
C (m) (veh/h)		1601		986				
v/c		0.00		0.04				
95% queue length		0.01		0.13				
Control Delay (s/veh)		7.3		8.8				
LOS		<i>A</i>		<i>A</i>				
Approach Delay (s/veh)	--	--	8.8					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	AM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
	Movement	1	2	3	4	5
	L	T	R	L	T	R
Volume (veh/h)	5	50			45	0
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	5	52	0	0	47	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
	Movement	7	8	9	10	11
	L	T	R	L	T	R
Volume (veh/h)				5		1
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	5	0	1
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
	Movement	1	4	7	8	9	10	11
Lane Configuration	LT						LR	
v (veh/h)	5						6	
C (m) (veh/h)	1573						910	
v/c	0.00						0.01	
95% queue length	0.01						0.02	
Control Delay (s/veh)	7.3						9.0	
LOS	A						A	
Approach Delay (s/veh)	--	--					9.0	
Approach LOS	--	--					A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	PM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	75			85	5
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	10	78	0	0	89	5
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				0		30
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	31
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					<i>LR</i>	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (veh/h)	10						31	
C (m) (veh/h)	1513						971	
v/c	0.01						0.03	
95% queue length	0.02						0.10	
Control Delay (s/veh)	7.4						8.8	
LOS	A						A	
Approach Delay (s/veh)	--	--					8.8	
Approach LOS	--	--					A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	PM Peak Hour - Weekend		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	1	25		1	50	5
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	1	26	0	1	52	5
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>			<i>LTR</i>		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				5		0
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	5	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration				<i>LR</i>		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>	<i>LTR</i>					<i>LR</i>	
v (veh/h)	1	1					5	
C (m) (veh/h)	1560	1601					922	
v/c	0.00	0.00					0.01	
95% queue length	0.00	0.00					0.02	
Control Delay (s/veh)	7.3	7.3					8.9	
LOS	A	A					A	
Approach Delay (s/veh)	--	--					8.9	
Approach LOS	--	--					A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & SR-7
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	AM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>State Route 7</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume (veh/h)	25	275	5	10	220	10
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	26	289	5	10	231	10
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume (veh/h)	15	10	25	0	10	20
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	15	10	26	0	10	21
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Movement	L	L	LTR			LTR		
v (veh/h)	26	10	31			51		
C (m) (veh/h)	1337	1279	703			670		
v/c	0.02	0.01	0.04			0.08		
95% queue length	0.06	0.02	0.14			0.25		
Control Delay (s/veh)	7.7	7.8	10.4			10.8		
LOS	A	A	B			B		
Approach Delay (s/veh)	--	--	10.4			10.8		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & SR-7
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	PM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>State Route 7</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	30	250	0	15	400	30
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	31	263	0	15	421	31
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	10	10	45	5	10	25
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	10	10	47	5	10	26
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LTR		
v (veh/h)	31	15	41			67		
C (m) (veh/h)	1119	1313	639			636		
v/c	0.03	0.01	0.06			0.11		
95% queue length	0.09	0.03	0.21			0.35		
Control Delay (s/veh)	8.3	7.8	11.0			11.3		
LOS	A	A	B			B		
Approach Delay (s/veh)	--	--	11.0			11.3		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & SR-7
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative No Project
Analysis Time Period	PM Peak Hour - Weekend		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>State Route 7</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	Movement	1	2	3	4	5
	L	T	R	L	T	R
Volume (veh/h)	5	300	5	20	110	5
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	5	315	5	21	115	5
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
	Movement	7	8	9	10	11
	L	T	R	L	T	R
Volume (veh/h)	10	5	1	0	1	5
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	10	5	1	0	1	5
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
	Movement	1	4	7	8	9	10	11
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	5	21		6			16	
C (m) (veh/h)	1480	1251		799			610	
v/c	0.00	0.02		0.01			0.03	
95% queue length	0.01	0.05		0.02			0.08	
Control Delay (s/veh)	7.4	7.9		9.5			11.1	
LOS	A	A		A			B	
Approach Delay (s/veh)	--	--		9.5			11.1	
Approach LOS	--	--		A			B	

**APPENDIX B.2:
HCS WORKSHEETS – CUMULATIVE WITH PROJECT**



TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	AM Peak Hour - Weekday		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>Heber Dunes Entrance</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		55	3	13	45	1
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	57	3	13	47	1
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LTR</i>		
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)			6			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	6	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	0	0
Configuration			<i>R</i>			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LTR</i>			<i>R</i>			
v (veh/h)		13			6			
C (m) (veh/h)		1556			1014			
v/c		0.01			0.01			
95% queue length		0.03			0.02			
Control Delay (s/veh)		7.3			8.6			
LOS		<i>A</i>			<i>A</i>			
Approach Delay (s/veh)	--	--	8.6					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	PM Peak Hour - Weekday		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>Heber Dunes Entrance</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		65	48	9	90	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	68	50	9	94	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	21		19			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	22	0	20	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
v (veh/h)		9		42				
C (m) (veh/h)		1483		862				
v/c		0.01		0.05				
95% queue length		0.02		0.15				
Control Delay (s/veh)		7.4		9.4				
LOS		<i>A</i>		<i>A</i>				
Approach Delay (s/veh)	--	--	9.4					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Heber Dunes Dwy
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	PM Peak Hour - Weekend		
Project Description <i>Heber Dunes State Park</i>			
East/West Street: <i>Heber Road</i>		North/South Street: <i>Heber Dunes Entrance</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		20	43	22	25	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	21	45	23	26	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	83		53			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	87	0	55	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
v (veh/h)		23		142				
C (m) (veh/h)		1549		928				
v/c		0.01		0.15				
95% queue length		0.05		0.54				
Control Delay (s/veh)		7.4		9.6				
LOS		<i>A</i>		<i>A</i>				
Approach Delay (s/veh)	--	--	9.6					
Approach LOS	--	--	<i>A</i>					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	AM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
	Movement	1	2	3	4	5
	L	T	R	L	T	R
Volume (veh/h)	5	52			45	0
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	5	54	0	0	47	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
	Movement	7	8	9	10	11
	L	T	R	L	T	R
Volume (veh/h)				6		1
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	6	0	1
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
	Movement	1	4	7	8	9	10	11
Lane Configuration	LT						LR	
v (veh/h)	5						7	
C (m) (veh/h)	1573						906	
v/c	0.00						0.01	
95% queue length	0.01						0.02	
Control Delay (s/veh)	7.3						9.0	
LOS	A						A	
Approach Delay (s/veh)	--	--					9.0	
Approach LOS	--	--					A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	PM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
	L	T	R	L	T	R	
Volume (veh/h)	10	100			100	6	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	10	105	0	0	105	6	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	<i>Two Way Left Turn Lane</i>						
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration	LT					TR	
Upstream Signal		0			0		

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
	L	T	R	L	T	R	
Volume (veh/h)				3		30	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	0	0	0	3	0	31	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	0	0	
Configuration					LR		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound			
	Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR		
v (veh/h)	10						34		
C (m) (veh/h)	1492						930		
v/c	0.01						0.04		
95% queue length	0.02						0.11		
Control Delay (s/veh)	7.4						9.0		
LOS	A						A		
Approach Delay (s/veh)	--	--					9.0		
Approach LOS	--	--					A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & Mets Road
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	PM Peak Hour - Weekend		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>Mets Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	1	58	0	1	106	7
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	1	61	0	1	111	7
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>			<i>LTR</i>		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				10		0
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	10	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration				<i>LR</i>		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>	<i>LTR</i>					<i>LR</i>	
v (veh/h)	1	1					10	
C (m) (veh/h)	1483	1555					814	
v/c	0.00	0.00					0.01	
95% queue length	0.00	0.00					0.04	
Control Delay (s/veh)	7.4	7.3					9.5	
LOS	A	A					A	
Approach Delay (s/veh)	--	--					9.5	
Approach LOS	--	--					A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & SR-7
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	AM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>State Route 7</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	30	275	5	10	220	14
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	31	289	5	10	231	14
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	16	11	28	0	13	20
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	16	11	29	0	13	21
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LTR		
v (veh/h)	31	10	34			56		
C (m) (veh/h)	1333	1279	668			665		
v/c	0.02	0.01	0.05			0.08		
95% queue length	0.07	0.02	0.16			0.27		
Control Delay (s/veh)	7.8	7.8	10.7			10.9		
LOS	A	A	B			B		
Approach Delay (s/veh)	--	--	10.7			10.9		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & SR-7
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	PM Peak Hour - Weekday		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>State Route 7</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume (veh/h)	32	250	5	15	400	31
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	33	263	5	15	421	32
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume (veh/h)	15	11	53	5	11	25
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	15	11	55	5	11	26
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Movement								
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	33	15		42			81	
C (m) (veh/h)	1118	1307		625			624	
v/c	0.03	0.01		0.07			0.13	
95% queue length	0.09	0.03		0.22			0.44	
Control Delay (s/veh)	8.3	7.8		11.2			11.6	
LOS	A	A		B			B	
Approach Delay (s/veh)	--	--	11.2			11.6		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LG	Intersection	Heber Road & SR-7
Agency/Co.	Fehr & Peers	Jurisdiction	Imperial County
Date Performed	8/11/2010	Analysis Year	Cumulative Plus Project
Analysis Time Period	PM Peak Hour - Weekend		

Project Description <i>Heber Dunes State Park</i>	
East/West Street: <i>Heber Road</i>	North/South Street: <i>State Route 7</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume (veh/h)	12	300	5	20	110	13
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	12	315	5	21	115	13
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume (veh/h)	34	9	11	0	3	5
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	35	9	11	0	3	5
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Movement								
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	12	21		8			55	
C (m) (veh/h)	1470	1251		700			649	
v/c	0.01	0.02		0.01			0.08	
95% queue length	0.02	0.05		0.03			0.28	
Control Delay (s/veh)	7.5	7.9		10.2			11.1	
LOS	A	A		B			B	
Approach Delay (s/veh)	--	--	10.2			11.1		
Approach LOS	--	--	B			B		

Appendix C
Future Visitation Projection Memo

To	Kirk Shea, Tina Robinson, and Kathy Dolinar
CC	Rick LeFlore
Subject	Visitor Projections Methodology for Heber Dunes SVRA EIR
From	Mike Page and Jessica Sisco
Date	June 24, 2010

Introduction

The purpose of this memorandum is to establish the methodology for projecting future visitor use at Heber Dunes State Vehicular Recreation Area (SVRA). These projections are necessary inputs for developing an estimate of reasonably foreseeable future peak daily use. The peak daily use estimate will be used in the Environmental Impact Report (EIR) for the Heber Dunes SVRA General Plan to help evaluate potential impacts in areas such as traffic and climate change. The annual visitor use projections and peak daily use estimate have been developed for the year 2030, which is consistent with the General Plan planning horizon.

This memorandum presents the following topics:

- Background and Data Sources;
- Existing Visitor Use Patterns;
- Projected Annual Visitation;
- Peak Day Visitation Estimates;
- Recommendations; and
- References.

Background and Data Sources

Heber Dunes SVRA was operated as a regional park by the County of Imperial (County) for over 30 years. Park use during this time included recreational uses such as off-highway vehicle (OHV) use, picnicking, and overnight camping. In 2000, California Department of Parks and Recreation (CDPR) accepted responsibility for park management and operations at Heber Dunes by lease agreement, in part, because the County lacked sufficient operational funding for the park. Heber Dunes was officially deeded to CDPR in 2007. At this time, CDPR began to operate Heber Dunes SVRA as a day use recreation area only and eliminated overnight camping. Day use hours have been strictly enforced by CDPR. It is likely that this change in operations affected visitor use patterns.

Because of the potential change in visitor use patterns, only visitor use estimates from the 2006/2007 fiscal year onward have been considered in developing annual visitor use projections. Historic annual visitor use estimates were compiled from available California State Park System Statistical Reports: fiscal years 2006/2007 and 2007/2008 (CDPR 2007, CDPR 2009). Fiscal year 2006/2007 was selected as the baseline year because it had the greatest annual visitor use and thus represents a more conservative baseline value.

According to the Statistical Reports, data on visitor attendance reflects an estimate of the number of individual visits (not the number of individual visitors) to the units of the State Park System during the fiscal year. Attendance data is collected at the unit level, sent to the district offices, and thereafter conveyed to the Field Services Division in headquarters. In most units, attendance figures are the result of making estimates, using various techniques and producing results of widely different levels of accuracy. The estimation techniques may range in quality from one unit to the next and they may be changed at any unit at any time. While the accuracy of these figures has substantial limitations, it is believed that in the aggregate, over time, orders-of magnitude and broad trends in visitor use can be determined with some validity.

Existing Visitor Use Patterns

Heber Dunes SVRA is open 7 days a week, year-round. It receives light visitation during weekdays, with the bulk of visitation occurring on Saturdays, Sundays, and holidays from Halloween to Presidents Day weekend. Sunday is generally the SVRA’s busiest day. As with other OHV parks in the region, Heber Dunes SVRA experiences great fluctuation by seasons, with the highest levels occurring in the fall, winter, and early spring (September through April). A greatly reduced number of recreationists visit the SVRA during the hotter seasons of late spring and summer (May through September) as the high air temperatures discourage use. Nevertheless, some dedicated riders visit the SVRA even during the hotter months, typically in the morning and evening hours.

As indicated in visitor interviews administered in 2009, the majority of visitors to Heber Dunes SVRA are local residents who travel less than 30 minutes to visit the SVRA (EDAW AECOM 2009). The visitor interviews indicated that the majority of visitors come from the nearby communities of Calexico, El Centro, Holtville, Imperial, and Heber, which are within short driving distance of the SVRA. As shown in Table 1 below, the overwhelming majority of these communities is composed of a Hispanic or Latino population. As such, it is likely that a large proportion of the visitors to Heber Dunes SVRA are of this ethnic background and reflect the local communities.

Table 1. Hispanic and Latino Composition of Nearby Communities

Community	Total Population	Percent Hispanic or Latino
Calexico	27,109	95.3%
El Centro	37,835	74.6%
Holtville	5,612	73.8%
Imperial	7,560	61.1%
Heber	2,988	97.5%

Source: U.S. Bureau of the Census 2000 (Summary File 1)

Because most visitors are from the local community, Heber Dunes SVRA has become a popular gathering and picnicking area for families and friends. The visitor interviews revealed that approximately one-third of visitors were children under the age of 15, signifying the popularity of the SVRA for families with children (EDAW AECOM 2009).

Projected Annual Visitation for 2030

Recognizing that future annual visitation may be influenced to some extent by both regional demographic trends and trends in statewide OHV use, a range of projected increases in annual visitation at Heber Dunes SVRA was developed. The following paragraph describes the process and data sources used for developing this range of projected annual visitation.

The California Department of Finance projects that Imperial County’s population will increase from 143,763 in 2000 to 283,693 in 2030, representing an approximate average annual growth rate¹ of 2.3 percent (2007). In comparison, the Off-Highway Motor Vehicle Recreation (OHMVR) Division of CDPR has estimated that annual visitation to state wide SVRAs has increased from 1,720,548 to 4,160,989 over the last 10 years (OHMVR Division 2010), representing an approximate average annual growth rate of 9.2 percent. Because projected future visitation for SVRAs is not available, an assumption has been made that the historic average annual growth rate of 9.2 percent for SVRA visitation would remain relatively constant through the end of the planning horizon (2030). These two percentages (2.3 percent and 9.2 percent) were used to calculate the low and high ends of the range of projected increases in annual visitation at Heber Dunes SVRA as shown in Table 2.

Table 2. Heber Dunes SVRA 2030 Visitor Use Projections

Average Annual Growth Rate (%)	Baseline Visits FY 2006/07 ^c	Projected Annual Visits 2030
2.3 ^a	30,093	50,674
9.2 ^b	30,093	229,395

Sources:

- a California Department of Finance 2007
- b OHMVR Division 2010
- c CDPR 2007.

¹ A geometric extrapolation method was used to estimate average annual growth rates and to develop visitor use projections. See Smith, K. *et al.* 2001. *The Plenum Series on Demographic Methods and Population Analysis: State and Local Population Projections, Methodology and Analysis.* New York, NY: Kluwer Academic/Plenum Publishers.

Peak Day Visitation Estimates – Normal Operations

This section describes the assumptions made to derive a peak day estimate from the range of projected annual visitation. Assumptions for peak season use and weekend use were developed based on review of visitor use patterns in Heber Dunes SVRA Monthly Visitor Attendance Reports from July 2008 through April 2010. Detailed descriptions of these assumptions are provided in footnotes a, b, and c to Table 3. Projected peak weekend day use is expected to range from 317 to 1,434 visitors based on an average annual growth rate of 2.3 percent and 9.2 percent, respectively. For comparative purposes, if peak weekend day use for the baseline year (FY 2006/07) is estimated using the same methodology as described in the footnotes to Table 3, current peak weekend day use is estimated to be 188 visitors.

Table 3. Heber Dunes SVRA Calculation of 2030 Projected Peak Weekend Day Use

Average Annual Growth Rate (%)	Projected Annual Visits 2030	Projected Peak Season Use ^a 2030	Projected Weekend Use ^b 2030	Projected Peak Weekend Day Use ^c 2030
2.3	50,674	40,539	20,270	317
9.2	229,395	183,516	91,758	1,434

Source: AECOM calculations based on assumptions outlined below.

- a: Peak Season is assumed to be September through April based on review of visitor use patterns in Heber Dunes SVRA Monthly Visitor Attendance Reports from July 2008 through April 2010. Based on review of these visitor use patterns, peak season visits are estimated to represent 80 percent of total annual visits. Monthly Visitor Attendance Reports were used to develop peak season assumptions because the California State Park System Statistical Reports do not provide monthly data (only total annual visitation is provided).
- b: Weekend use is assumed to be Saturday and Sunday based on review of visitor use patterns in Heber Dunes SVRA Monthly Visitor Attendance Reports from July 2008 through April 2010. It should be noted that Monthly Visitor Attendance Reports are estimates of visitation, rather than actual counts. Based on review of these daily visitor use patterns, weekend visits are estimated to represent approximately 50 percent of weekly visits. Monthly Visitor Attendance Reports were used to develop weekend use assumptions because the California State Park System Statistical Reports do not provide daily data.
- c: Estimates of peak weekend day use (Saturday and Sunday) assume 8 peak season months per year and 8 weekend days per month for a total of 64 peak weekend days per year.

Peak Day Visitation Estimates – Special Events

Special events held at the SVRA may increase visitation on particular days to substantially more users than experienced on a typical peak weekend day. Such special events may include OHV promotions or demonstrations, OHV events or races, concerts, or even weddings. Special events would require the organizer to obtain a Special Event Permit through CDPR. A high influx of visitors to the SVRA may create onsite parking issues and traffic safety concerns. A high number of vehicles attempting to access the SVRA coupled with unorganized and sporadic onsite parking may influence visitors to look for parking on the local roads near the Heber Dunes SVRA entrance. Special events of large magnitude would require specific traffic and parking mitigation and control measures based on the magnitude of projected attendance.

Recommendations

The high end of the projected peak weekend day use estimate (1,434 visitors) would result in approximately 409 to 448 vehicle trips to the SVRA (assuming the standard CDPR estimate of 3.5 or 3.2 persons per vehicle, respectively). The actual increase in visitor use would likely be constrained by the availability of gathering space and the recreational experience if the SVRA is crowded. It is assumed that some visitors would choose not to recreate at Heber Dunes SVRA if peak weekend day use were to approach this high end projection. Thus, actual increase in visitor use, when considering the constraint of available limited recreation opportunities (including factors such as shaded picnic areas, available riding areas, restroom facilities, ranger oversight, etc.) is assumed to be 880 visitors (i.e., the approximate midpoint of the range of projected 2030 visitor use, 317 visitors and 1,434 visitors). This projected peak weekend day use estimate is considerably higher than the current estimated peak weekend day use of 188; however, this assumption is supported by the following rationale:

- CDPR employs active adaptive management of SVRAs, which allows for increased recreation capacity and minimization of environmental impacts under heavy visitation circumstances.
- Due to improvements anticipated to occur following adoption of the General Plan, it is expected that future increases in visitor use will be distributed during both peak and off-peak times. For example, General Plan guidelines are expected to provide recreation opportunities that expand the use of the SVRA during weekday slow periods and during the summer “off season”, such as extended hours during the summer to allow visitors to enjoy the SVRA in the early morning and late evening. Likewise, visitors may come and go throughout the day and would not necessarily all be at the SVRA at the same time.
- Visitors to Heber Dunes SVRA tend to socialize in large groups and OHV recreation is not always the primary recreation activity, thus allowing for greater densities of visitors than might be supported under more intensive OHV recreation.
- In many ways, Heber Dunes functions as a regional, day use park that attracts visitors primarily from local communities (because camping is not allowed, overnight, broad regional use from throughout Southern California is not common); therefore, visitation increases are not likely to reflect the full extent of statewide SVRA visitation trends.

References Cited

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Appendix D
Air Quality and GHG Data

Air Quality Appendices

- Criteria Pollutants and Their Health Effects
- Project Construction Assumptions
- URBEMIS2007 Emissions
- Greenhouse Gases Emissions Calculations
- OHV Operational Emissions

Criteria Pollutants, and Their Health and Environmental Effects

Criteria pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. Also included in this discussion are reactive organic gases (ROG) and oxides of nitrogen (NO_x) because they are ozone precursors, and NO_x can sometimes be a precursor to PM_{10} and $PM_{2.5}$.

Ozone (O_3)

Description and Physical Properties

Ozone is what is known as a photochemical pollutant. Ozone is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between reactive organic gases, oxides of nitrogen, and sunlight. ROG and NO_x , also called “ozone precursors,” are emitted from automobiles, solvents and fuel combustion.

Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind. In order to reduce ozone, it is necessary to control emissions of ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. These conditions are prevalent during the summer when thermal inversions are most likely to occur. As a result, summertime conditions of long periods of daylight and hot temperatures form ozone in the greatest quantities. During the summer, thermal inversions trap ozone from dispersing vertically, and high concentrations of this pollutant are prevalent.

Health and Environmental Effects

Health effects of ozone can include the following: respiratory system irritation, reduction of lung capacity, asthma aggravation, inflammation, and damage to lung cells, aggravated cardiovascular disease, and permanent lung damage. The greatest health risk is to those who are more active outdoors during smoggy periods, such as children, the elderly, athletes, and outdoor workers.

Ozone also damages natural ecosystems such as forests and foothill communities, and damages agricultural crops and some anthropogenic (human) materials such as rubber, paint, and plastics.

Sources

Ozone is a secondary pollutant; its precursors are ROG and NO_x (discussed below).

Reactive Organic Gases (ROG) - Not a Criteria Pollutant

Description and Physical Properties

Reactive organic gases are defined as any compound of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate), which participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and volatile organic compounds (VOC), the two terms are often used interchangeably.

ROGs are regulated because they are an ozone precursor.

Health Effects

Health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of ROGs are suspected to cause eye, nose, and throat irritation; headaches, loss of coordination, nausea, damage to liver, kidney, and the central nervous system.

Nitrogen Oxides (NO_x) and Nitrogen Dioxide (NO_2)

Description and Physical Properties

During combustion of fossil fuels, oxygen reacts with nitrogen to produce NO_x . This occurs primarily in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. NO_x is an ozone precursor, and can also be a precursor to criteria pollutants PM_{10} and $PM_{2.5}$.

Nitrogen dioxide (NO_2) is a form of NO_x ; it is a brown gas with a strong odor.

Health and Environmental Effects

The health effects associated with ozone (as discussed above) are also indirect health effects associated with unhealthy levels of its precursor, NO_x .

Nitrogen dioxide (NO_2) is the only form of NO_x that has a direct human health effect, which lung damage, increased incidence of chronic bronchitis, eye and mucus membrane damage, negative effects on the

respiratory system, pulmonary dysfunction, and premature death. Small particles can penetrate deeply into the sensitive tissue of the lungs and can cause or worsen respiratory disease, such as emphysema, asthma, and bronchitis. NO_2 can also aggravate existing heart disease.

Environmentally, NO_x can react with moisture, ammonia, and other compounds to form nitric acid and related particles, which can harm natural resources, stone edifices, and other materials.

Sources

Natural sources of NO_x include lightning, soils, wildfires, and stratospheric intrusion.

Particulate Matter (PM₁₀ and PM_{2.5})

Description and Physical Properties

Particulate matter is a general term that defines a broad group of chemically and physically different particles (either liquid droplets or solids). In discussions of air pollution, particulate matter is typically divided into two size categories: PM_{10} and $\text{PM}_{2.5}$. PM_{10} refers to particulate matter that is 10 microns or less in diameter, while $\text{PM}_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter.

Health and Environmental Effects

Particulate matter is a respiratory irritant that can be inhaled into the lungs where it can be absorbed into the bloodstream. Direct pulmonary effects are coughing, bronchitis, lung disease, respiratory illnesses, increased airway reactivity, and exacerbation of asthma. Particulate matter is also thought to have direct effects on the heart.

Diesel fuel emissions are a source of $\text{PM}_{2.5}$ to which carcinogens can adsorb.

Environmental effects of particulate matter include reduced visibility and soiling of property.

Sources

Particulate matter originates from a variety of stationary and mobile sources. Stationary sources include fuel combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation-related sources include particulate matter from highway vehicles and non-road vehicles and fugitive dust from paved and unpaved roads. Diesel fuel emissions are a source of $\text{PM}_{2.5}$.

Fugitive dust is entrained particulate matter caused by anthropogenic (grading, road dust) or natural (windblown dust) activities.

Carbon Monoxide (CO)

Description and Properties

CO is a colorless, odorless toxic gas. CO levels tend to be highest during the winter months when the meteorological conditions favor the accumulation of the pollutants. This occurs when relatively low inversion levels trap pollutants near the ground and concentrate the CO. Because CO is somewhat soluble in water, normal winter conditions of rainfall and fog can suppress CO conditions.

Health and Environmental Effects

CO gas enters the body through the lungs, dissolves in the blood, and replaces oxygen as an attachment to hemoglobin. This binding reduces available oxygen in the blood and; therefore, reduces oxygen delivery to the body's organs and tissues. Effects on humans range from slight headaches to nausea to death. Elevated levels of CO can also cause visual impairments, reduced manual dexterity, poor learning ability, reduced work capacity, and trouble performing complex tasks.

Environmentally, CO is essentially inert to plants and materials.

Sources

CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). The primary source of CO is from on-road motor vehicles. Other sources include non-road engines and vehicles, industrial processes (such as metals processing and chemical manufacturing), residential wood-burning fire places and stoves, natural gas ovens and stoves, cigarette smoke, unvented gas and kerosene space heaters, and forest fires.

Sulfur Dioxide (SO₂)

Description and Physical Properties

Sulfur dioxide is a colorless, soluble, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor, similar to rotten eggs.

Sulfuric acid is formed from sulfur dioxide, which is an aerosol particle component that may lead to acid deposition.

Sulfur oxides (SO_x) include sulfur dioxide and sulfur trioxide (SO_3).

Although sulfur dioxide concentrations have been reduced to levels well below state and national standards, further reductions are desirable because it is a precursor to sulfate and PM_{10} .

Health and Environmental Effects

As a soluble gas, sulfur dioxide can be absorbed through the mucous membranes of the respiratory tract and nose. Long-term exposure of high levels of sulfur dioxide can cause irritation of existing cardiovascular disease, respiratory illness, and changes in the defenses in the lungs. When people with asthma are exposed to high levels of sulfur dioxide for short periods of time during moderate activity, effects may include wheezing, chest tightness, and/or shortness of breath.

Sulfuric acid deposition onto water, vegetation, soil, or other materials can harm natural resources and materials.

Sources

Sources of SO_2 are fossil-fuel combustion, mineral ore processing, chemical manufacturing, and volcanoes.

Heber Dunes SVRA
Near-Term Improvement Assumptions for Air Quality Modeling

Improvement/Area	Qty	Length	Linear Feet		Excavated CY	Hauled	Imported
			Width	Depth (14)		Elsewhere On Site CY	From Off Site CY
Water Trenching							
Entrance to Station		5600	2	3	1,244		
To Pumphouse		1900	2	3	422		
Electrical Trenching							
Entrance to Station		1400	2	4	415		
To Pumphouse		1640	2	4	486		
Drainage							
At Entrance (2)		800	6	4	711	711	
Irrigation Lines							
Park Entrance		500	2.5	1	46		
Track Area		300	2.5	1	28	28	
Park Ranger Residence (3)	1	100	100	1	370	370	
RV Pads (4)	3	20	15	1	33	33	
Septic Systems Pits (5)							
For Residences	4	12	8	8	114	114	
For Ranger Station	1	12	8	8	28	28	
Septic System Leachfields							
For Residences	4	50	30	6	1,333		
For Ranger Station	1	100	50	6	1,111		
Ranger Station/Maint.Fac. (6)	1	60	60	4	533	533	
Maint.Fac.Concrete Slab (7)	1	60	12	1	27	27	
Covered Parking Areas (8)	2	40	14	1	41	41	
Fuel Station Slab(9)	1	12	10	1	4	4	
Spectator Stands (10)							
TOTAL EXCAVATED					6,949		
TOTAL EXCAVATED AND MOVED ELSEWHERE ON SITE (2)						1,891	
TOTAL MATERIAL NEEDED TO ELEVATE TRACK 10" ABOVE EXISTING ELEVATION							
Training Track (11)	1	300	300	0.83	2,778		
TOTAL ADDITIONAL MATERIAL NEEDED FOR OFF-SITE LOCATION TO ELEVATE TRACK (11)							887
OTHER	Spaces	Length	Width	Sq.Ft.	Acreage		
Resurface Heber Road (12)		2000	20	40,000	0.9		
New Asphalt Road, Area B (16)		1000	20	20,000	0.5		
Graded Parking Area (13)	275	20	15	82,500	1.9		
Assumptions							
(1) Lengths are taken from project Utility Plan dated 02-02-2010							
(2) Excavated material replaced with amended soil or displaced by concrete pads/slabs, so it's hauled elsewhere on site.							
(3) Assumes 100' x 100' pad							
(4) Assumes each RV pad would be 20' x 15'							
(5) Assumes pits would be 8' wide							
(6) Assumes a structure would be 55' x 55', andn pad would be 60' x 60'							
(7) Assumes slab would be length of ranger station pad (60') and 12' wide							
(8) Assumes each parking area would accommodate 4 vehicles, and each parking space would be 10' x 14'							
(9) Assumes a slab 12' x 10' for above ground tank.							
(10) Assumes the spectator stands would be length of one edge of track (300') and 20' deep.							
(11) Assumes track would be elevated 10" above existing elevations for drainage purposes.							
(12) Heber Beach Road is only the loop road at 2000' long							
(13) Graded parking area assumes 20 x 15' per car							
(14) Unless otherwise stated in the project description, excavations are assumed to be 12" deep.							
(15) All activities are assumed to be "front-loaded" in that they will all commence at the same time							
(16) Assumes new asphalt road around new residence and RV pads would be 1000' long and 20' wide,							
.							
Sources of Operational Emissions				Sq.Ft.	Acreage		
Park Ranger Residence				900			
3 RVs							
Ranger Station/Maintenance Facility				3,000			
5 Propane Tanks (assumes 1 for residence, 1 for each RV pad, and 1 for Ranger Station)							
Fuel Station							
40 BBQs							
5 Fire Pits are assumed, as not everyone will stay into the evening hours							
Parking, graded; not paved	275	20	15	82,500	1.9		

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

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Project Name: Heber Dunes SVRA Year 1 Construction Emissions

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (lbs/day unmitigated)	16.79	93.78	52.04	0.00	12.75	4.93	17.68	2.67	4.53	7.20	9,793.61
2011 TOTALS (lbs/day mitigated)	16.30	93.78	52.04	0.00	2.88	3.28	6.16	0.60	3.02	3.62	9,793.61

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2011-1/31/2011 Active Days: 21	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.48
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.48
Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50
Time Slice 2/1/2011-5/31/2011 Active Days: 86	11.94	85.56	49.31	0.00	12.75	4.68	17.43	2.66	4.31	6.97	8,993.44
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,806.95
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,756.71
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.81
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.44
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.48

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Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50
Time Slice 6/1/2011-7/29/2011 Active Days: 43	<u>16.79</u>	85.56	49.39	0.00	12.75	4.68	17.43	2.66	4.31	6.97	8,997.40
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,806.95
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,756.71
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.81
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.44
Coating 06/01/2011-07/29/2011	4.85	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.97
Architectural Coating	4.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.97
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.48
Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50
Time Slice 8/1/2011-12/30/2011 Active Days: 110	11.67	<u>93.78</u>	<u>52.04</u>	<u>0.00</u>	<u>12.75</u>	<u>4.93</u>	<u>17.68</u>	<u>2.67</u>	<u>4.53</u>	<u>7.20</u>	<u>9,793.61</u>
Asphalt 08/01/2011-12/30/2011	4.36	33.78	18.85	0.00	0.01	1.95	1.96	0.00	1.79	1.79	3,607.12
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	4.14	33.50	14.79	0.00	0.00	1.94	1.94	0.00	1.78	1.78	3,405.22
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Paving Worker Trips	0.18	0.23	4.04	0.00	0.01	0.01	0.01	0.00	0.00	0.01	193.06
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.48
Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50

Phase Assumptions

Phase: Fine Grading 1/3/2011 - 12/30/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0.13

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 8/1/2011 - 12/30/2011 - Default Paving Description

Acres to be Paved: 1.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Surfacing Equipment (362 hp) operating at a 0.45 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/1/2011 - 7/29/2011 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

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- 1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
- 1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2011 - 7/29/2011 - Default Architectural Coating Description
 Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
 Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
 Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
 Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2011-1/31/2011 Active Days: 21	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.48
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.48
Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50
Time Slice 2/1/2011-5/31/2011 Active Days: 86	11.94	85.56	49.31	0.00	2.87	3.24	6.11	0.60	2.98	3.58	8,993.44
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	0.26	0.26	0.00	0.24	0.24	2,806.95
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	0.25	0.25	0.00	0.23	0.23	2,756.71
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.81
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.44
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.48

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Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50
Time Slice 6/1/2011-7/29/2011 Active Days: 43	<u>16.30</u>	85.56	49.39	0.00	2.87	3.24	6.11	0.60	2.98	3.58	8,997.40
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	0.26	0.26	0.00	0.24	0.24	2,806.95
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	0.25	0.25	0.00	0.23	0.23	2,756.71
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.81
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.44
Coating 06/01/2011-07/29/2011	4.36	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.97
Architectural Coating	4.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.97
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.48
Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50
Time Slice 8/1/2011-12/30/2011 Active Days: 110	11.67	<u>93.78</u>	<u>52.04</u>	<u>0.00</u>	<u>2.88</u>	<u>3.28</u>	<u>6.16</u>	<u>0.60</u>	<u>3.02</u>	<u>3.62</u>	<u>9,793.61</u>
Asphalt 08/01/2011-12/30/2011	4.36	33.78	18.85	0.00	0.01	0.30	0.31	0.00	0.27	0.28	3,607.12
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	4.14	33.50	14.79	0.00	0.00	0.29	0.29	0.00	0.27	0.27	3,405.22
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85
Paving Worker Trips	0.18	0.23	4.04	0.00	0.01	0.01	0.01	0.00	0.00	0.01	193.06
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.48
Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.50

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/3/2011 - 12/30/2011 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Architectural Coating 6/1/2011 - 7/29/2011 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

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Project Name: Heber Dunes SVRA Year 1 Construction Emissions

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (lbs/day unmitigated)	16.79	93.78	52.04	0.00	12.75	4.93	17.68	2.67	4.53	7.20	9,793.61
2011 TOTALS (lbs/day mitigated)	16.30	93.78	52.04	0.00	2.88	3.28	6.16	0.60	3.02	3.62	9,793.61

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2011-1/31/2011 Active Days: 21	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.
Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.0
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.0
Time Slice 2/1/2011-5/31/2011 Active Days: 86	11.94	85.56	49.31	0.00	12.75	4.68	17.43	2.66	4.31	6.97	8,993.
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,806.
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,756.
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.0
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.0
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.

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Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.00
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.00
Time Slice 6/1/2011-7/29/2011 Active Days: 43	<u>16.79</u>	85.56	49.39	0.00	12.75	4.68	17.43	2.66	4.31	6.97	8,997.00
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,806.00
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	1.70	1.70	0.00	1.56	1.56	2,756.00
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.00
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00
Coating 06/01/2011-07/29/2011	4.85	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Architectural Coating	4.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.00
Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.00
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.00
Time Slice 8/1/2011-12/30/2011 Active Days: 110	11.67	<u>93.78</u>	<u>52.04</u>	<u>0.00</u>	<u>12.75</u>	<u>4.93</u>	<u>17.68</u>	<u>2.67</u>	<u>4.53</u>	<u>7.20</u>	<u>9,793.00</u>
Asphalt 08/01/2011-12/30/2011	4.36	33.78	18.85	0.00	0.01	1.95	1.96	0.00	1.79	1.79	3,607.00
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	4.14	33.50	14.79	0.00	0.00	1.94	1.94	0.00	1.78	1.78	3,405.00
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00
Paving Worker Trips	0.18	0.23	4.04	0.00	0.01	0.01	0.01	0.00	0.00	0.01	193.00
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	12.74	2.98	15.73	2.66	2.74	5.41	6,186.00
Fine Grading Dust	0.00	0.00	0.00	0.00	12.74	0.00	12.74	2.66	0.00	2.66	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.00
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.00

Phase Assumptions

Phase: Fine Grading 1/3/2011 - 12/30/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0.13

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 8/1/2011 - 12/30/2011 - Default Paving Description

Acres to be Paved: 1.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Surfacing Equipment (362 hp) operating at a 0.45 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/1/2011 - 7/29/2011 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

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- 1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
- 1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2011 - 7/29/2011 - Default Architectural Coating Description
 Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
 Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
 Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
 Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2011-1/31/2011 Active Days: 21	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.00
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.00
Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.00
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.00
Time Slice 2/1/2011-5/31/2011 Active Days: 86	11.94	85.56	49.31	0.00	2.87	3.24	6.11	0.60	2.98	3.58	8,993.00
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	0.26	0.26	0.00	0.24	0.24	2,806.00
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	0.25	0.25	0.00	0.23	0.23	2,756.00
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.00
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.00

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Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.00
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.00
Time Slice 6/1/2011-7/29/2011 Active Days: 43	<u>16.30</u>	85.56	49.39	0.00	2.87	3.24	6.11	0.60	2.98	3.58	8,997.00
Building 02/01/2011-07/29/2011	4.63	25.56	16.12	0.00	0.00	0.26	0.26	0.00	0.24	0.24	2,806.00
Building Off Road Diesel	4.59	25.47	15.23	0.00	0.00	0.25	0.25	0.00	0.23	0.23	2,756.00
Building Vendor Trips	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.00
Building Worker Trips	0.04	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00
Coating 06/01/2011-07/29/2011	4.36	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Architectural Coating	4.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.00
Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.00
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.00
Time Slice 8/1/2011-12/30/2011 Active Days: 110	11.67	<u>93.78</u>	<u>52.04</u>	<u>0.00</u>	<u>2.88</u>	<u>3.28</u>	<u>6.16</u>	<u>0.60</u>	<u>3.02</u>	<u>3.62</u>	<u>9,793.00</u>
Asphalt 08/01/2011-12/30/2011	4.36	33.78	18.85	0.00	0.01	0.30	0.31	0.00	0.27	0.28	3,607.00
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	4.14	33.50	14.79	0.00	0.00	0.29	0.29	0.00	0.27	0.27	3,405.00
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00
Paving Worker Trips	0.18	0.23	4.04	0.00	0.01	0.01	0.01	0.00	0.00	0.01	193.00
Fine Grading 01/03/2011-12/30/2011	7.31	60.00	33.19	0.00	2.87	2.98	5.85	0.60	2.74	3.34	6,186.00
Fine Grading Dust	0.00	0.00	0.00	0.00	2.86	0.00	2.86	0.60	0.00	0.60	0.00
Fine Grading Off Road Diesel	7.14	59.78	29.52	0.00	0.00	2.98	2.98	0.00	2.74	2.74	6,010.00
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.17	0.21	3.67	0.00	0.01	0.00	0.01	0.00	0.00	0.01	175.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/3/2011 - 12/30/2011 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Architectural Coating 6/1/2011 - 7/29/2011 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

22

48

48

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46

52

50

44

95

71

81

44

48

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Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Asphalt 08/01/2011-12/30/2011	0.24	1.86	1.04	0.00	0.00	0.11	0.11	0.00	0.10	0.10	0.10	198.39
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.23	1.84	0.81	0.00	0.00	0.11	0.11	0.00	0.10	0.10	0.10	187.29
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
Paving Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.62

Phase Assumptions

Phase: Fine Grading 1/3/2011 - 12/30/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0.13

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 8/1/2011 - 12/30/2011 - Default Paving Description

Acres to be Paved: 1.25

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

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Fine Grading Worker Trips	0.02	0.03	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.82
Building 02/01/2011-07/29/2011	0.30	1.65	1.04	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.02	181.05
Building Off Road Diesel	0.30	1.64	0.98	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.02	177.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61
Coating 06/01/2011-07/29/2011	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Architectural Coating	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Asphalt 08/01/2011-12/30/2011	0.24	1.86	1.04	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.02	198.39
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.23	1.84	0.81	0.00	0.00	0.02	0.02	0.00	0.01	0.01	0.01	187.29
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
Paving Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.62

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/3/2011 - 12/30/2011 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Architectural Coating 6/1/2011 - 7/29/2011 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

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Project Name: Heber Dunes SVRA Year 2 Construction Emissions

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2012 TOTALS (lbs/day unmitigated)	14.19	95.78	55.62	0.01	0.28	5.02	5.29	0.06	4.62	4.68	10,649.48
2012 TOTALS (lbs/day mitigated)	14.03	95.78	55.62	0.01	0.08	3.44	3.51	0.02	3.16	3.18	10,649.48

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2012-1/31/2012 Active Days: 21	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.26	0.00	0.26	0.05	0.00	0.05	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05
Time Slice 2/1/2012-5/31/2012 Active Days: 87	12.62	95.78	55.58	0.00	0.27	5.02	5.29	0.06	4.62	4.68	10,647.58
Building 02/01/2012-07/29/2012	4.73	32.96	17.65	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,746.00
Building Off Road Diesel	4.71	32.92	17.22	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,719.79
Building Vendor Trips	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.24
Building Worker Trips	0.02	0.02	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.97
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58

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Paving Worker Trips	0.20	0.25	5.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	260.04
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.26	0.00	0.26	0.05	0.00	0.05	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05

Phase Assumptions

Phase: Fine Grading 1/3/2012 - 12/30/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0.25

Fugitive Dust Level of Detail: Medium

Onsite Scraper Use: 0 hr/day; Offsite Haulage: 0 hrs/day

On Road Truck Travel (VMT): 0.41

Off-Road Equipment:

- 1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day
- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 8/1/2012 - 12/30/2012 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

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- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/1/2012 - 7/29/2012 - Default Building Construction Description

Off-Road Equipment:

- 1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day
- 1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
- 1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day
- 1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2012 - 7/29/2012 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2012-1/31/2012 Active Days: 21	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	6,901.58
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96

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Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.01	286.05
Time Slice 2/1/2012-5/31/2012 Active Days: 87	12.62	95.78	55.58	0.00	0.07	3.44	3.51	0.02	3.16	3.18	3.18	10,647.58
Building 02/01/2012-07/29/2012	4.73	32.96	17.65	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,746.00
Building Off Road Diesel	4.71	32.92	17.22	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,719.79
Building Vendor Trips	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.24
Building Worker Trips	0.02	0.02	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.97
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.01	286.05
Time Slice 6/1/2012-7/27/2012 Active Days: 41	<u>14.03</u>	<u>95.78</u>	<u>55.62</u>	0.00	0.07	<u>3.44</u>	<u>3.51</u>	0.02	<u>3.16</u>	<u>3.18</u>	<u>3.18</u>	<u>10,649.48</u>
Building 02/01/2012-07/29/2012	4.73	32.96	17.65	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,746.00
Building Off Road Diesel	4.71	32.92	17.22	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,719.79
Building Vendor Trips	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.24
Building Worker Trips	0.02	0.02	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.97
Coating 06/01/2012-07/29/2012	1.41	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Architectural Coating	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.01	286.05
Time Slice 7/30/2012-7/31/2012 Active Days: 2	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.01	0.00

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Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05
Time Slice 8/1/2012-12/28/2012 Active Days: 108	11.47	88.50	55.29	<u>0.01</u>	<u>0.08</u>	3.41	3.49	<u>0.02</u>	3.13	3.15	9,835.53
Asphalt 08/01/2012-12/30/2012	3.58	25.68	17.36	0.00	0.01	0.25	0.26	0.00	0.23	0.23	2,933.96
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.37	25.42	12.14	0.00	0.00	0.24	0.24	0.00	0.22	0.22	2,670.49
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43
Paving Worker Trips	0.20	0.25	5.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	260.04
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/3/2012 - 12/30/2012 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Architectural Coating 6/1/2012 - 7/29/2012 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

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ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

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Project Name: Heber Dunes SVRA Year 2 Construction Emissions

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2012 TOTALS (lbs/day unmitigated)	14.19	95.78	55.62	0.01	0.28	5.02	5.29	0.06	4.62	4.68	10,649.48
2012 TOTALS (lbs/day mitigated)	14.03	95.78	55.62	0.01	0.08	3.44	3.51	0.02	3.16	3.18	10,649.48

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2012-1/31/2012 Active Days: 21	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.26	0.00	0.26	0.05	0.00	0.05	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05
Time Slice 2/1/2012-5/31/2012 Active Days: 87	12.62	95.78	55.58	0.00	0.27	5.02	5.29	0.06	4.62	4.68	10,647.58
Building 02/01/2012-07/29/2012	4.73	32.96	17.65	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,746.00
Building Off Road Diesel	4.71	32.92	17.22	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,719.79
Building Vendor Trips	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.24
Building Worker Trips	0.02	0.02	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.97
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58

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Paving Worker Trips	0.20	0.25	5.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	260.04
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.27	3.16	3.43	0.06	2.91	2.96	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.26	0.00	0.26	0.05	0.00	0.05	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05

Phase Assumptions

Phase: Fine Grading 1/3/2012 - 12/30/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0.25

Fugitive Dust Level of Detail: Medium

Onsite Scraper Use: 0 hr/day; Offsite Haulage: 0 hrs/day

On Road Truck Travel (VMT): 0.41

Off-Road Equipment:

- 1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day
- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 8/1/2012 - 12/30/2012 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

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- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/1/2012 - 7/29/2012 - Default Building Construction Description

Off-Road Equipment:

- 1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day
- 1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
- 1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day
- 1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2012 - 7/29/2012 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/3/2012-1/31/2012 Active Days: 21	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	6,901.58
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96

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Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.01	286.05
Time Slice 2/1/2012-5/31/2012 Active Days: 87	12.62	95.78	55.58	0.00	0.07	3.44	3.51	0.02	3.16	3.18	3.18	10,647.58
Building 02/01/2012-07/29/2012	4.73	32.96	17.65	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,746.00
Building Off Road Diesel	4.71	32.92	17.22	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,719.79
Building Vendor Trips	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.24
Building Worker Trips	0.02	0.02	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.97
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.01	286.05
Time Slice 6/1/2012-7/27/2012 Active Days: 41	<u>14.03</u>	<u>95.78</u>	<u>55.62</u>	0.00	0.07	<u>3.44</u>	<u>3.51</u>	0.02	<u>3.16</u>	<u>3.18</u>	<u>3.18</u>	<u>10,649.48</u>
Building 02/01/2012-07/29/2012	4.73	32.96	17.65	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,746.00
Building Off Road Diesel	4.71	32.92	17.22	0.00	0.00	0.28	0.28	0.00	0.26	0.26	0.26	3,719.79
Building Vendor Trips	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.24
Building Worker Trips	0.02	0.02	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.97
Coating 06/01/2012-07/29/2012	1.41	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Architectural Coating	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.01	286.05
Time Slice 7/30/2012-7/31/2012 Active Days: 2	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.01	0.00

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Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05
Time Slice 8/1/2012-12/28/2012 Active Days: 108	11.47	88.50	55.29	<u>0.01</u>	<u>0.08</u>	3.41	3.49	<u>0.02</u>	3.13	3.15	9,835.53
Asphalt 08/01/2012-12/30/2012	3.58	25.68	17.36	0.00	0.01	0.25	0.26	0.00	0.23	0.23	2,933.96
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.37	25.42	12.14	0.00	0.00	0.24	0.24	0.00	0.22	0.22	2,670.49
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43
Paving Worker Trips	0.20	0.25	5.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	260.04
Fine Grading 01/03/2012-12/30/2012	7.89	62.82	37.92	0.00	0.07	3.16	3.23	0.02	2.91	2.92	6,901.58
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	7.66	62.54	32.18	0.00	0.00	3.15	3.15	0.00	2.90	2.90	6,613.96
Fine Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Fine Grading Worker Trips	0.23	0.27	5.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	286.05

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/3/2012 - 12/30/2012 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Architectural Coating 6/1/2012 - 7/29/2012 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

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ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Asphalt 08/01/2012-12/30/2012	0.19	1.39	0.94	0.00	0.00	0.09	0.09	0.00	0.08	0.08	158.43
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.18	1.37	0.66	0.00	0.00	0.09	0.09	0.00	0.08	0.08	144.21
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Paving Worker Trips	0.01	0.01	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.04

Phase Assumptions

Phase: Fine Grading 1/3/2012 - 12/30/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0.25

Fugitive Dust Level of Detail: Medium

Onsite Scraper Use: 0 hr/day; Offsite Haulage: 0 hrs/day

On Road Truck Travel (VMT): 0.41

Off-Road Equipment:

- 1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day
- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 8/1/2012 - 12/30/2012 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

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- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/1/2012 - 7/29/2012 - Default Building Construction Description

Off-Road Equipment:

- 1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day
- 1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
- 1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
- 1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day
- 1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2012 - 7/29/2012 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2012	1.55	11.63	6.98	0.00	0.01	0.44	0.45	0.00	0.40	0.41	1,291.97
Fine Grading 01/03/2012-12/30/2012	1.02	8.13	4.91	0.00	0.01	0.41	0.42	0.00	0.38	0.38	893.75
Fine Grading Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.99	8.10	4.17	0.00	0.00	0.41	0.41	0.00	0.38	0.38	856.51

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Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Fine Grading Worker Trips	0.03	0.04	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.04
Building 02/01/2012-07/29/2012	0.30	2.11	1.13	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.02	239.74
Building Off Road Diesel	0.30	2.11	1.10	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.02	238.07
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
Coating 06/01/2012-07/29/2012	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Architectural Coating	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Asphalt 08/01/2012-12/30/2012	0.19	1.39	0.94	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	158.43
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.18	1.37	0.66	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	144.21
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Paving Worker Trips	0.01	0.01	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.04

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/3/2012 - 12/30/2012 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Architectural Coating 6/1/2012 - 7/29/2012 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

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ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Move to New Computer\Work\Projects\Heber Dunes\EIR\URBEMIS Runs 9-28-10\COPY of Visitor Mobile Source Only.urb924

Project Name: Heber Dunes Visitor Mobile Source Emissions

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
City park	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48
TOTALS (lbs/day, unmitigated)	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48

Does not include correction for passby trips
 Does not include double counting adjustment for internal trips
 Analysis Year: 2012 Temperature (F): 90 Season: Summer
 Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
City park		55.00	acres	10.00	550.00	11,000.00
					550.00	11,000.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	10.0	0.9	98.9	0.2
Light Truck < 3750 lbs	25.0	1.9	93.6	4.5
Light Truck 3751-5750 lbs	25.0	1.0	98.5	0.5
Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	0.0	8.3	25.0	66.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	2.5	97.5
Other Bus	0.0	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	20.0	58.1	41.9	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	20.0	11.1	77.8	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	0.0	0.0	0.0	0.0	0.0	0.0
Rural Trip Length (miles)	20.0	20.0	20.0	20.0	20.0	20.0
Trip speeds (mph)	40.0	40.0	40.0	45.0	45.0	40.0
% of Trips - Residential	25.0	25.0	50.0			
% of Trips - Commercial (by land use)						
City park				0.0	0.0	100.0

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Move to New Computer\Work\Projects\Heber Dunes\EIR\URBEMIS Runs 9-28-10\COPY of Visitor Mobile Source Only.urb924

Project Name: Heber Dunes Visitor Mobile Source Emissions

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
City park	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48
TOTALS (lbs/day, unmitigated)	24.61	23.58	338.92	0.10	18.90	3.61	9,824.48

Operational Settings:

Does not include correction for passby trips
 Does not include double counting adjustment for internal trips
 Analysis Year: 2012 Temperature (F): 55 Season: Winter
 Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
City park		55.00	acres	10.00	550.00	11,000.00
					550.00	11,000.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	10.0	0.9	98.9	0.2
Light Truck < 3750 lbs	25.0	1.9	93.6	4.5
Light Truck 3751-5750 lbs	25.0	1.0	98.5	0.5
Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	0.0	8.3	25.0	66.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	2.5	97.5
Other Bus	0.0	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	20.0	58.1	41.9	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	20.0	11.1	77.8	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	0.0	0.0	0.0	0.0	0.0	0.0
Rural Trip Length (miles)	20.0	20.0	20.0	20.0	20.0	20.0
Trip speeds (mph)	40.0	40.0	40.0	45.0	45.0	40.0
% of Trips - Residential	25.0	25.0	50.0			
% of Trips - Commercial (by land use)						
City park				0.0	0.0	100.0

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Move to New Computer\Work\Projects\Heber Dunes\EIR\URBEMIS Runs 9-28-10\COPY of Visitor Mobile Source Only.urb924

Project Name: Heber Dunes Visitor Mobile Source Emissions

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.49	4.30	61.85	0.02	3.45	0.66	1,792.97

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.49	4.30	61.85	0.02	3.45	0.66	1,792.97

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\boparaip\Desktop\EIR\URBEMIS Runs 9-28-10\Heber Oper'l Res and Rgr Sta.urb924

Project Name: Heber Dunes Residential, Ranger Station

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.51	0.04	3.27	0.00	0.01	0.01	5.90
TOTALS (lbs/day, mitigated)	0.45	0.03	2.62	0.00	0.01	0.01	5.90
Percent Reduction	11.76	25.00	19.88	#####	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.68	0.59	9.00	0.00	202.70	42.96	500.83

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1.19	0.63	12.27	0.00	202.71	42.97	506.73

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth - No Summer Emissions							
Landscape	0.28	0.04	3.27	0.00	0.01	0.01	5.90
Consumer Products	0.16						
Architectural Coatings	0.07						
TOTALS (lbs/day, unmitigated)	0.51	0.04	3.27	0.00	0.01	0.01	5.90

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth - No Summer Emissions							
Landscape	0.22	0.03	2.62	0.00	0.01	0.01	5.90
Consumer Products	0.16						
Architectural Coatings	0.07						
TOTALS (lbs/day, mitigated)	0.45	0.03	2.62	0.00	0.01	0.01	5.90

Area Source Changes to Defaults

- Percent residential using natural gas changed from 50% to 0%
- Percent nonresidential using natural gas changed from 100% to 0%
- Percentage of residences with wood stoves changed from 10% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 80% to 0%
- The number of persons per household for consumer product use changed from 3.33 persons to 2.3 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.21	0.21	3.24	0.00	73.37	15.55	181.13
Mobile home park	0.40	0.38	5.71	0.00	129.33	27.41	319.26
Government office building	0.07	0.00	0.05	0.00	0.00	0.00	0.44
TOTALS (lbs/day, unmitigated)	0.68	0.59	9.00	0.00	202.70	42.96	500.83

Operational Settings:

- Does not include correction for passby trips
- Does not include double counting adjustment for internal trips
- Analysis Year: 2012 Temperature (F): 90 Season: Summer
- Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	0.25	9.14	dwelling units	1.00	9.14	182.80
Mobile home park	0.75	5.37	dwelling units	3.00	16.11	322.20
Government office building		1.00	1000 sq ft	3.00	3.00	0.00
					28.25	505.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.9	98.9	0.2
Light Truck < 3750 lbs	100.0	1.9	93.6	4.5
Light Truck 3751-5750 lbs	0.0	1.0	98.5	0.5

Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	0.0	8.3	25.0	66.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	2.5	97.5
Other Bus	0.0	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	0.0	58.1	41.9	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	11.1	77.8	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	0.0	0.0	0.0	0.0	0.0	0.0
Rural Trip Length (miles)	0.0	0.0	20.0	0.0	0.0	0.0
Trip speeds (mph)	40.0	40.0	40.0	45.0	45.0	40.0
% of Trips - Residential	0.0	0.0	100.0			
% of Trips - Commercial (by land use)						
Government office building				1.0	0.5	98.5

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\boparaip\Desktop\EIR\URBEMIS Runs 9-28-10\Heber Oper'l Res and Rgr Sta.urb924

Project Name: Heber Dunes Residential, Ranger Station

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.23	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS (lbs/day, mitigated)	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Percent Reduction	0.00	#####	#####	#####	#####	#####	#####

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.68	0.59	9.00	0.00	202.70	42.96	500.83

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.91	0.59	9.00	0.00	202.70	42.96	500.83

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.16						
Architectural Coatings	0.07						
TOTALS (lbs/day, unmitigated)	0.23	0.00	0.00	0.00	0.00	0.00	0.00

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.16						
Architectural Coatings	0.07						
TOTALS (lbs/day, mitigated)	0.23	0.00	0.00	0.00	0.00	0.00	0.00

Area Source Changes to Defaults

- Percent residential using natural gas changed from 50% to 0%
- Percent nonresidential using natural gas changed from 100% to 0%
- Percentage of residences with wood stoves changed from 10% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 80% to 0%
- The number of persons per household for consumer product use changed from 3.33 persons to 2.3 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.21	0.21	3.24	0.00	73.37	15.55	181.13
Mobile home park	0.40	0.38	5.71	0.00	129.33	27.41	319.26
Government office building	0.07	0.00	0.05	0.00	0.00	0.00	0.44
TOTALS (lbs/day, unmitigated)	0.68	0.59	9.00	0.00	202.70	42.96	500.83

Operational Settings:

- Does not include correction for passby trips
- Does not include double counting adjustment for internal trips
- Analysis Year: 2012 Temperature (F): 55 Season: Winter
- Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	0.25	9.14	dwelling units	1.00	9.14	182.80
Mobile home park	0.75	5.37	dwelling units	3.00	16.11	322.20
Government office building		1.00	1000 sq ft	3.00	3.00	0.00
					28.25	505.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.9	98.9	0.2
Light Truck < 3750 lbs	100.0	1.9	93.6	4.5
Light Truck 3751-5750 lbs	0.0	1.0	98.5	0.5

Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	0.0	8.3	25.0	66.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	2.5	97.5
Other Bus	0.0	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	0.0	58.1	41.9	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	11.1	77.8	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	0.0	0.0	0.0	0.0	0.0	0.0
Rural Trip Length (miles)	0.0	0.0	20.0	0.0	0.0	0.0
Trip speeds (mph)	40.0	40.0	40.0	45.0	45.0	40.0
% of Trips - Residential	0.0	0.0	100.0			
% of Trips - Commercial (by land use)						
Government office building				1.0	0.5	98.5

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\boparaip\Desktop\EIR\URBEMIS Runs 9-28-10\Heber Oper'l Res and Rgr Sta.urb924

Project Name: Heber Dunes Residential, Ranger Station

Project Location: Imperial County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.07	0.00	0.34	0.00	0.00	0.00	0.62
TOTALS (tons/year, mitigated)	0.06	0.00	0.27	0.00	0.00	0.00	0.62
Percent Reduction	14.29 #####		20.59 #####	#####	#####	#####	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.12	0.11	1.64	0.00	36.99	7.84	91.40

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.19	0.11	1.98	0.00	36.99	7.84	92.02

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.03	0.00	0.34	0.00	0.00	0.00	0.62
Consumer Products	0.03						
Architectural Coatings	0.01						
TOTALS (tons/year, unmitigated)	0.07	0.00	0.34	0.00	0.00	0.00	0.62

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.27	0.00	0.00	0.00	0.62
Consumer Products	0.03						
Architectural Coatings	0.01						
TOTALS (tons/year, mitigated)	0.06	0.00	0.27	0.00	0.00	0.00	0.62

Area Source Changes to Defaults

Percent residential using natural gas changed from 50% to 0%

Percent nonresidential using natural gas changed from 100% to 0%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

Percentage of residences with natural gas fireplaces changed from 80% to 0%

The number of persons per household for consumer product use changed from 3.33 persons to 2.3 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.04	0.04	0.59	0.00	13.39	2.84	33.06
Mobile home park	0.07	0.07	1.04	0.00	23.60	5.00	58.26
Government office building	0.01	0.00	0.01	0.00	0.00	0.00	0.08
TOTALS (tons/year, unmitigated)	0.12	0.11	1.64	0.00	36.99	7.84	91.40

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	0.25	9.14	dwelling units	1.00	9.14	182.80
Mobile home park	0.75	5.37	dwelling units	3.00	16.11	322.20
Government office building		1.00	1000 sq ft	3.00	3.00	0.00
					28.25	505.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.9	98.9	0.2
Light Truck < 3750 lbs	100.0	1.9	93.6	4.5
Light Truck 3751-5750 lbs	0.0	1.0	98.5	0.5

Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	0.0	8.3	25.0	66.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	2.5	97.5
Other Bus	0.0	0.0	100.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	0.0	58.1	41.9	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	11.1	77.8	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commuter	Non-Work	Customer
Urban Trip Length (miles)	0.0	0.0	0.0	0.0	0.0	0.0
Rural Trip Length (miles)	0.0	0.0	20.0	0.0	0.0	0.0
Trip speeds (mph)	40.0	40.0	40.0	45.0	45.0	40.0
% of Trips - Residential	0.0	0.0	100.0			
% of Trips - Commercial (by land use)						
Government office building				1.0	0.5	98.5

Appendix Heber Dunes GHG Calculations

Air Quality Modeling Output		CO2 Estimates	Conversion Factors		Total CO2 Emissions
Construction Emissions (Source: URBEMIS)					
Year					
2011		1183.77 English tons		0.907 MT/ton	1,074 MT/yr
2012		1291.97 English tons		0.907 MT/ton	1,172 MT/yr
Total Construction-Generated Emissions					2,246 MT

Area-Source Emissions (Source: URBEMIS)					
Operational Year 2012		0.62 English tons		0.907 MT/ton	1 MT/yr

Propane

Gallons per Year	Emission Factor (kg CO2/gallon)	Emission Factor (kg CH4/gallon)	Emission Factor (kg N2O/gallon)	CO2e (kg/year)	CO2e (Metric Tons/year)
600	5.74	0.00009	0.00041	3444.144131	3

Wood

Pounds per Year	Emission Factor (kg CO2/MMBTU)	Emission Factor (kg CH4/MMBTU)	Emission Factor (kg N2O/MMBTU)	BTU/Year	MMBTU/Year	CO2e (kg/year)	CO2e (Metric Tons/year)
20076.2	93.87	0.316	0.00	128367222.8	128	13068.8102	13

Mobile-Source Emissions (Source: URBEMIS)

Operational Year 2012 (Based on Peak Day only)		1,792.97 English tons		0.907 MT/ton	1,627 MT/yr
Annual Average Mobile Source Emissions (assuming 36 peak days and 6 months each of peak summer and winter emissions)					342 MT/yr

Total Direct Operational Emissions					359 MT/yr
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Indirect Emissions from Energy Consumption ^{1,2}

KWh/du/year	# du	KWh/ksf/year	# ksf Commercial	Total KWh	MWh	Region	Emission Factor (lb CO2/MWh)	GWP	Emission Factor (lb CH4/MWh)	GWP	Emission Factor (lb N2O/MWh)	GWP	Total CO2e (Metric Tons/year)	
7000		1	16,000	3	55,000	55 CALI	804.54		1	0.0067	21	0.0037	310	20

Total Indirect Emissions (MT CO2e/yr) 20

Total Direct & Indirect Emissions (MT CO2e/yr) 379

Sources:

- 1 California Energy Commission [CEC] 2009. California Commercial End Use Survey. Available: <http://capabilities.itron.com/CeusWeb/Chart.aspx>; California Energy Commission [CEC] 2000. California Energy Demand Staff Report P200-00-002
- 2 California Climate Action Registry [CCAR] General Reporting Protocol v 3.1 January 2009

AQ and GHG Emission Estimates

OHV	0.6		
%Multiple Riders	0.4	OHV Mix	
Average Speed	12	ATV	60%
Winter Riding Hours	2	On Highway	20%
Summer Riding Hours	1.25	Utility Carts	10%
High-use Season	72.0%	Motorcycles	7%
Low-use Season	28.0%	Rails/Buggies	3%

Annual Weekends	104
Average weekend days per month	8.6667

MONTH	2007-2008				2008-2009				2009-2010				2010-2011				Average		
	Visitor	OHV	Hours	Miles	Visitor	OHV	Hours	Miles	Visitor	OHV	Hours	Miles	Visitor	OHV	Hours	Miles	Visitor	OHV	
JULY	357	129	161	1,928	1,411	508	635	7,619	910	328	410	4,914	886	319	399	4,784	891	321	4.2%
AUGUST	315	113	142	1,701	725	261	326	3,915	2,167	780	975	11,702	718	258	323	3,877	981	353	4.7%
SEPTEMBER	1,362	490	613	7,355	1,922	692	865	10,379	1,264	455	569	6,826	1,012	364	455	5,465	1,390	500	6.6%
OCTOBER	2,646	953	1,905	22,861	1,495	538	1,076	12,917	2,250	810	1,620	19,440	1,632	588	1,175	14,100	2,006	722	9.5%
NOVEMBER	3,455	1,244	2,488	29,851	2,671	962	1,923	23,077	1,803	649	1,298	15,578	1,649	594	1,187	14,247	2,395	862	11.4%
DECEMBER	3,868	1,392	2,785	33,420	1,376	495	991	11,889	2,083	750	1,500	17,997	1,743	627	1,255	15,060	2,268	816	10.7%
JANUARY	2,790	1,004	2,009	24,106	2,109	759	1,518	18,222	2,538	914	1,827	21,928	2,230	803	1,606	19,267	2,417	870	11.5%
FEBRUARY	2,800	1,008	2,016	24,192	2,093	753	1,507	18,084	1,149	414	827	9,927	1,500	540	1,080	12,960	1,886	679	8.9%
MARCH	2,394	862	1,724	20,684	2,141	771	1,542	18,498	2,109	759	1,518	18,222	1,907	687	1,373	16,476	2,138	770	10.1%
APRIL	2,384	858	1,716	20,598	2,918	1,050	2,101	25,212	1,498	539	1,079	12,943	1,498	539	1,079	12,943	2,075	747	9.8%
MAY	2,030	731	914	10,962	1,434	516	645	7,744	1,270	457	572	6,858	1,270	457	572	6,858	1,501	540	7.1%
JUNE	1,264	455	569	6,826	1,158	417	521	6,253	1,027	370	462	5,546		0	0	0	1,150	310	5.4%
Total	25,665	9,239	17,040	204,483	21,453	7,723	13,651	163,808	20,068	7,224	12,657	151,880	16,045	5,776	10,503	126,038	21,095	7,491	100.0%
Max	3,868	1,392	2,785	33,420	2,918	1,050	2,101	25,212	2,538	914	1,827	21,928	2,230	803	1,606	19,267	2,417	870	11.5%
Min	315	113	142	1,701	725	261	326	3,915	910	328	410	4,914	718	0	0	0	891	310	4.2%

AQ and GHG Emission Estimates

Summary

Total 2006-2007 Visitors	30,093
Total 2006-2007 OHV	10,833
OHV per Person	0.36
Total Annual Vehicles	9,404
OHV per Vehicle	1.152
High-Season OHV	7,797
Low Season OHV	3,037
High-Season OHV Hours	15,594
Low Season OHV Hours	3,796
Total Annual OHV Hours	19,390

Traffic Section

2006/2007 Peak	188
Future Peak We	880
Increase	3.68
Annual Rate of	0.16
Peak to Total R	0.0062

Annual

	2006-2007	2029-2030
Visitors	30,093	140,861
Vehicles	9,404	44,019
Total OHV	10,833	50,710
ATV	6,500	30,426
On Highway	2,492	11,663
Utility Carts	1,083	5,071
Motorcycle	758	3,550
Peak Season Hours		
Total OHV	15,594	72,992
ATV	9,356	43,795
On Highway	3,587	16,788
Utility Carts	1,559	7,299
Motorcycle	1,092	5,109
Peak Season Miles		
Total OHV	187,125	875,905
ATV	112,275	525,543
On Highway	43,039	201,458
Utility Carts	18,713	87,591
Motorcycle	13,099	61,313
Off-Peak Season Hours		
Total OHV	3,796	17,767
ATV	2,277	10,660
On Highway	873	4,086
Utility Carts	380	1,777
Motorcycle	266	1,244
Off-Peak Season Miles		
Total OHV	45,549	213,208
ATV	27,329	127,925
On Highway	10,476	49,038
Utility Carts	4,555	21,321
Motorcycle	3,188	14,925

AQ and GHG Emission Estimates

Peak Weekend

	2006-2007	Increase	2029-2030
Total OHV	68	317	384
Motorcycle	5	22	27
ATV	41	190	231
Utility Carts	7	32	38
On Highway	16	73	88
Hours			
Total OHV	135	634	769
Motorcycle	9	44	54
ATV	81	380	461
Utility Carts	14	63	77
On Highway	31	146	177
Miles			
Total OHV	1,624	7,603	9,228
Motorcycle	114	532	646
ATV	975	4,562	5,537
Utility Carts	162	760	923
On Highway	374	1,749	2,122

2011 Emissions (lbs./day)

	ROG Exhaust	CO Exhaust	NOX Exhaust	CO2 Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust	N2O Exhaust	CH4 Exhaust
Total	0.07	2.30	0.02	3.96	0.00	0.01	0.01	0.00	0.00
Motorcycles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATV	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Utility Carts (15 HP)	0.00	1.74	0.01	3.24	0.00	0.01	0.00	0.00	0.00
On-Highway Vehicles	1.02	11.31	0.60	701.93	0.01	0.05	0.04	0.00	0.00
Total Breakout	1.03	13.06	0.61	705.18	0.01	0.06	0.04	0.00	0.00

Emissions Increase - 2030 (lbs./day)

	ROG Exhaust	CO Exhaust	NOX Exhaust	CO2 Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust	N2O Exhaust	CH4 Exhaust
Total	0.298	9.429	0.069	16.235	0.001	0.029	0.026	0.012	0.018
Motorcycles	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
ATV	0.003	0.007	0.000	0.019	0.000	0.000	0.000	0.000	0.000
Utility Carts (15 HP)	0.017	7.156	0.054	13.297	0.000	0.021	0.019	0.009	0.009
On-Highway Vehicles	0.620	6,840	0.560	3207.920	0.030	0.190	0.140	0.000	0.000
Total Breakout	0.64	14.00	0.61	3221.24	0.03	0.21	0.16	0.01	0.01

AQ and GHG Annual Emission Estimates

Summary

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OHV per Person	0.36
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Annual Rate of Increase	0.16
Peak to Total Ratio	0.0062

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Utility Carts	1,083	5,071
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Peak Season Hours		
Total OHV	15,594	72,992
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Motorcycle	1,092	5,109
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On Highway	873	4,086
Utility Carts	380	1,777
Motorcycle	266	1,244
Off-Peak Season Miles		
Total OHV	45,549	213,208
ATV	27,329	127,925
On Highway	10,476	49,038
Utility Carts	4,555	21,321
Motorcycle	3,188	14,925
Annual Hours		
Total OHV	19,390	90,759
Motorcycle	1,357	6,353
ATV	11,634	54,456
Utility Carts	1,939	9,076
On Highway	4,460	20,875
Annual Miles		
Total OHV	232,674	1,089,113
Motorcycle	16,287	76,238
ATV	139,605	653,468
Utility Carts	23,267	108,911
On Highway	53,515	250,496

AQ and GHG Annual Emission Estimates

Peak Weekend

	2006-2007	Increase	2029-2030
Total OHV	68	317	384
Motorcycle	5	22	27
ATV	41	190	231
Utility Carts	7	32	38
On Highway	16	73	88
Hours			
Total OHV	135	634	769
Motorcycle	9	44	54
ATV	81	380	461
Utility Carts	14	63	77
On Highway	31	146	177
Miles			
Total OHV	1,624	7,603	9,228
Motorcycle	114	532	646
ATV	975	4,562	5,537
Utility Carts	162	760	923
On Highway	374	1,749	2,122

Annual Emissions (2011)

	ROG Exhaust	CO Exhaust	NOX Exhaust	CO2 Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust	N2O Exhaust	CH4 Exhaust
Total	0.005	0.144	0.001	0.248	0.000	0.000	0.000	0.000181	0.000
Motorcycles	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000000	0.000
ATV	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000000	0.000
Utility Carts (15 HP)	0.000	0.109	0.001	0.203	0.000	0.000	0.000	0.000140	0.000
On-Highway Vehicles	0.186	2.064	0.110	128.102	0.002	0.009	0.007	0.000000	0.000
Total Breakout	0.19	2.17	0.11	128.31	0.00	0.01	0.01	0.000141	0.00

Annual Emissions (2030)

	ROG Exhaust	CO Exhaust	NOX Exhaust	CO2 Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust	N2O Exhaust	CH4 Exhaust
Total	0.021	0.675	0.005	1.163	0.000	0.002	0.001	0.000848	0.001
Motorcycles	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000000	0.000
ATV	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000002	0.000
Utility Carts (15 HP)	0.001	0.512	0.004	0.952	0.000	0.002	0.001	0.000656	0.001
On-Highway Vehicles	0.113	1.248	0.102	585.445	0.005	0.035	0.026	0.000000	0.000
Total Breakout	0.11	1.76	0.11	586.40	0.01	0.04	0.03	0.000658	0.001

Net Change (2011-2030)

	ROG Exhaust	CO Exhaust	NOX Exhaust	CO2 Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust	N2O Exhaust	CH4 Exhaust
Total	0.017	0.531	0.004	0.914	0.000	0.002	0.001	0.00067	0.001
Motorcycles	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000000	0.000
ATV	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000000	0.000
Utility Carts (15 HP)	0.001	0.403	0.003	0.749	0.000	0.001	0.001	0.00052	0.001
On-Highway Vehicles	-0.073	-0.816	-0.007	457.343	0.004	0.026	0.018	0.000000	0.000
Total Breakout	-0.07	-0.41	0.00	458.09	0.00	0.03	0.02	0.00	0.00

Net Increase in GHG Emissions (metric tons per year)

	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	Total
Total	0.832	0.180	0.021	1.033
Motorcycles	0.000	0.000	0.000	0.000
ATV	0.001	0.000	0.000	0.002
Utility Carts (15 HP)	0.681	0.139	0.011	0.831
On-Highway Vehicles	416.182	0.000	0.000	416.182
Total Breakout	416.86	0.14	0.01	417.015

OFFROAD Emissions (tons per day)

CY	Season	AvgDays	Equipment	Fuel	MaxHP	Population	Activity	Consumption
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	15	555	2055	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	25	478	1769	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	50	3889	14397	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	120	1860	6887	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	15	459	1698	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	25	298	1105	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	50	393	1455	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	15	1083	4008	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	25	1746	6466	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	50	1820	6737	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	15	374	1385	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	25	5206	19274	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	50	235	870	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	15	1386	5131	194.4604
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	25	1192	4415	167.3241
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	50	9708	35941	1362.122
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	120	4644	17192	651.5668
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	15	1510	5592	211.942
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	25	983	3641	137.9787
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	50	1294	4792	181.5991
2011	Annual	Mon-Sun	Golf Carts	G2	15	0	0	0
2011	Annual	Mon-Sun	Specialty Vehicles Carts	G2	15	153	28	10.27771
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	15	2702	10005	184.6601
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	25	4360	16142	297.9254
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	50	4542	16817	310.3792
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	15	1233	4563	84.85589
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	25	17149	63490	1180.604
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	50	774	2866	53.2916
2011	Annual	Mon-Sun	Minibikes	G4	5	43	16	3.572642
2011	Annual	Mon-Sun	Golf Carts	G4	15	0	0	0
2011	Annual	Mon-Sun	Specialty Vehicles Carts	G4	5	5	1	0.2255963
2011	Annual	Mon-Sun	Specialty Vehicles Carts	G4	15	64	12	4.508573
2011	Annual	Mon-Sun	Specialty Vehicles Carts	G4	25	35	6	6.920454

OFFROAD Emissions (tons per day)

CY	Season	AvgDays	Equipment	ROG Exhaust	CO Exhaust	NOX Exhaust	CO2 Exhaust
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	-	-	-	-
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.1958	0.3060	0.0001	0.6499
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.1685	0.2633	0.0001	0.5592
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	1.3715	2.1434	0.0004	4.5522
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.6560	1.0253	0.0002	2.1775
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.2134	0.3335	0.0001	0.7083
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.1389	0.2171	0.0000	0.4611
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.1828	0.2858	0.0001	0.6069
2011	Annual	Mon-Sun	Golf Carts	-	-	-	-
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0004	0.0281	0.0003	0.0537
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0127	0.2970	0.0057	1.2672
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0204	0.4791	0.0092	2.0445
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0213	0.4991	0.0096	2.1299
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0060	0.1387	0.0034	0.5780
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0841	1.9292	0.0475	8.0413
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0038	0.0871	0.0021	0.3630
2011	Annual	Mon-Sun	Minibikes	0.0023	0.0151	0.0001	0.0020
2011	Annual	Mon-Sun	Golf Carts	-	-	-	-
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0000	0.0006	0.0000	0.0012
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0002	0.0130	0.0001	0.0225
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0002	0.0205	0.0002	0.0336

OFFROAD Emissions (tons per day)

CY	Season	AvgDays	Equipment	SO2 Exhaust	PM Exhaust	N2O Exhaust	CH4 Exhaust
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	Off-Road Motorcycles Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	0	0	0	0
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	-	-	-	-
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0005	0.0024	0.0002	0.0122
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0008	0.0020	0.0002	0.0105
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0109	0.0166	0.0015	0.0852
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0077	0.0080	0.0007	0.0408
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0007	0.0026	0.0002	0.0133
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0006	0.0017	0.0002	0.0086
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0011	0.0022	0.0002	0.0114
2011	Annual	Mon-Sun	Golf Carts	-	-	-	-
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0000	0.0000	0.0000	0.0000
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0010	0.0007	0.0034	0.0008
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0031	0.0011	0.0055	0.0012
2011	Annual	Mon-Sun	Off-Road Motorcycles Active	0.0051	0.0011	0.0057	0.0013
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0006	0.0003	0.0018	0.0004
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0110	0.0042	0.0250	0.0050
2011	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	0.0006	0.0002	0.0011	0.0002
2011	Annual	Mon-Sun	Minibikes	0.0000	0.0001	0.0000	0.0001
2011	Annual	Mon-Sun	Golf Carts	-	-	-	-
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0000	0.0000	0.0000	0.0000
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0000	0.0000	0.0000	0.0000
2011	Annual	Mon-Sun	Specialty Vehicles Carts	0.0000	0.0000	0.0000	0.0000

OFFROAD Emissions (tons per day)

CY	Season	AvgDays	Equipment	Fuel	MaxHP	Population	Activity	Consumption	ROG Exhaust
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	15	1090	4036	0.00	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	25	938	3473	0.00	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	50	7637	28273	0.00	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	120	3653	13525	0.00	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	15	906	3353	0.00	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	25	589	2182	0.00	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	50	776	2873	0.00	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	15	2126	7871	0.00	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	25	3430	12698	0.00	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	50	3573	13229	0.00	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	15	739	2736	0.00	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	25	10281	38063	0.00	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	50	464	1718	0.00	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	15	2722	10076	381.88	0.3845
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	25	2342	8670	328.59	0.3308
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	50	19064	70581	2674.93	2.6933
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	120	9119	33762	1279.55	1.2883
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	15	2983	11044	418.55	0.4214
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	25	1942	7190	272.48	0.2744
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	50	2556	9463	358.63	0.3611
2030	Annual	Mon-Sun	Golf Carts	G2	15	0	0	0.00	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G2	15	175	32	11.72	0.0004
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	15	5307	19648	362.82	0.0249
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	25	8562	31700	585.36	0.0402
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	50	8920	33025	609.83	0.0419
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	15	2434	9012	167.74	0.0120
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	25	33865	125381	2333.82	0.1671
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	50	1529	5660	105.35	0.0075
2030	Annual	Mon-Sun	Minibikes	G4	5	49	18	4.13	0.0027
2030	Annual	Mon-Sun	Golf Carts	G4	15	0	0	0.00	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	5	5	1	0.26	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	15	73	13	5.14	0.0002
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	25	40	7	7.89	0.0003

OFFROAD Emissions (tons per day)

CY	Season	AvgDays	Equipment	Fuel	MaxHP	CO Exhaust	NOX Exhaust	CO2 Exhaust	SO2 Exhaust
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	15	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	25	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	50	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	120	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	15	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	25	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	50	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	15	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	25	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	50	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	15	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	25	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	50	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	15	0.6009	0.0001	1.2762	0.0010
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	25	0.5171	0.0001	1.0981	0.0017
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	50	4.2091	0.0008	8.9395	0.0214
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	120	2.0134	0.0004	4.2762	0.0151
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	15	0.6586	0.0001	1.3988	0.0014
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	25	0.4288	0.0001	0.9106	0.0012
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	50	0.5643	0.0001	1.1985	0.0021
2030	Annual	Mon-Sun	Golf Carts	G2	15	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G2	15	0.0320	0.0003	0.0612	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	15	0.5841	0.0113	2.4885	0.0020
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	25	0.9424	0.0182	4.0149	0.0061
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	50	0.9818	0.0189	4.1828	0.0100
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	15	0.2747	0.0067	1.1414	0.0011
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	25	3.8218	0.0938	15.8802	0.0217
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	50	0.1725	0.0042	0.7168	0.0013
2030	Annual	Mon-Sun	Minibikes	G4	5	0.0175	0.0001	0.0023	0.0000
2030	Annual	Mon-Sun	Golf Carts	G4	15	0.0000	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	5	0.0007	0.0000	0.0014	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	15	0.0148	0.0001	0.0257	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	25	0.0234	0.0002	0.0383	0.0000

OFFROAD Emissions (tons per day)

CY	Season	AvgDays	Equipment	Fuel	MaxHP	PM Exhaust	N2O Exhaust	CH4 Exhaust
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	15	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	25	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	50	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G2	120	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	15	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	25	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G2	50	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	15	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	25	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Inactive	G4	50	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	15	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	25	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Inactive	G4	50	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	15	0.0047	0.0004	0.0239
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	25	0.0040	0.0004	0.0206
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	50	0.0327	0.0030	0.1674
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G2	120	0.0156	0.0014	0.0801
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	15	0.0051	0.0005	0.0262
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	25	0.0033	0.0003	0.0171
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G2	50	0.0044	0.0004	0.0224
2030	Annual	Mon-Sun	Golf Carts	G2	15	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G2	15	0.0000	0.0001	0.0000
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	15	0.0013	0.0067	0.0015
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	25	0.0021	0.0108	0.0024
2030	Annual	Mon-Sun	Off-Road Motorcycles Active	G4	50	0.0022	0.0113	0.0025
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	15	0.0006	0.0035	0.0007
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	25	0.0083	0.0493	0.0099
2030	Annual	Mon-Sun	All Terrain Vehicles (ATVs) Active	G4	50	0.0004	0.0022	0.0004
2030	Annual	Mon-Sun	Minibikes	G4	5	0.0001	0.0000	0.0002
2030	Annual	Mon-Sun	Golf Carts	G4	15	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	5	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	15	0.0000	0.0000	0.0000
2030	Annual	Mon-Sun	Specialty Vehicles Carts	G4	25	0.0000	0.0000	0.0000

Appendix E

Noise Data

NOISE MEASUREMENT DATA

SLM & RTA Summary

Translated: 7-Sep-10 12:05:55
 File Translated: Y:\824 Measurements\Heber\030509__001.slmml
 Model Number: 824
 Serial Number: A3007
 Firmware Rev: 4.283
 Software Version: 3.12
 Name: EDAW, Inc.
 Descr1: 1420 Kettner Blvd., Ste. 620
 Descr2: San Diego, CA 92101
 Setup: 1M-1S.ssa
 Setup Descr: SLM & RTA 1min-1Sec
 Location: **MS1**
 Note 1:
 Note 2:

Overall Any Data

Start Time: 5-Mar-09 9:05:01
 Elapsed Time: 30:01.1

	A Weight	C Weight	Flat
Leq:	56.8 dBA	65.6 dBC	66.2 dBF
SEL:	89.4 dBA	98.1 dBC	98.8 dBF
Peak:	85.2 dBA	92.5 dBC	93.5 dBF
	3/5/2009 9:28	3/5/2009 9:10	3/5/2009 9:10
Lmax (slow):	70.0 dBA	83.5 dBC	83.9 dBF
	3/5/2009 9:07	3/5/2009 9:34	3/5/2009 9:10
Lmin (slow):	37.2 dBA	51.8 dBC	53.7 dBF
	3/5/2009 9:14	3/5/2009 9:27	3/5/2009 9:34
Lmax (fast):	71.6 dBA	85.2 dBC	85.7 dBF
	3/5/2009 9:31	3/5/2009 9:34	3/5/2009 9:10
Lmin (fast):	36.0 dBA	49.9 dBC	51.6 dBF
	3/5/2009 9:14	3/5/2009 9:26	3/5/2009 9:26
Lmax (impulse):	72.5 dBA	85.9 dBC	86.8 dBF
	3/5/2009 9:28	3/5/2009 9:34	3/5/2009 9:10
Lmin (impulse):	37.2 dBA	52.9 dBC	55.0 dBF
	3/5/2009 9:29	3/5/2009 9:34	3/5/2009 9:34

Spectra

Start Time:

5-Mar-09

9:05:01 Run Time:

30:01.1

Freq Hz

	Leq 1/3 Oct	Leq 1/1 Oct	Max 1/3 Oct	Max 1/1 Oct	Min 1/3 Oct	Min 1/1 Oct
12.5	51		53.7		29.2	
16	51.6	56.5	58.6	62.2	32.7	35.8
20	52.5		58.5		30.4	
25	51.5		57.9		34.4	
31.5	52.3	57	60.9	64.3	35.1	40
40	52.7		59.4		36.1	
50	53.3		61.6		36.8	
63	57.4	61.2	58	65.7	36.9	40.8
80	57.4		62.1		33.8	
100	59.6		65.3		31.9	
125	55.4	61.8	58.5	67.5	30	34.6
160	54.2		61.7		25.6	
200	51.7		63.8		23.2	
250	49.9	54.9	57.3	65	19.9	25.6
315	47.8		52.8		17.6	
400	44.3		47.9		18	
500	42.8	49.1	50.3	57.3	20.3	24.8
630	45.4		55.6		21.1	
800	48.8		60.7		21.7	
1000	50.3	54.2	63.7	67.9	21.4	26.4
1250	48.9		64.3		21.7	
1600	46.5		63.3		19.8	
2000	43.3	48.8	59.2	65.1	18	23
2500	40.1		54		16.1	
3150	36.7		49.4		16.3	
4000	34.6	39.5	47.4	52.7	16.8	21.5
5000	31.6		46.5		17	
6300	29		43.3		16.7	
8000	26.3	31.6	43.7	47	17.2	22
10000	23.3		36.9		17.8	
12500	21.2		31		18.1	
16000	21.1	26.3	27.1	33.1	19.6	24.6
20000	22.3		24.2		21.3	

Ln Start Level:	15 dB	
L 1.00		67 dBA
L 5.00		64 dBA
L 50.00		47.4 dBA
L 90.00		40.4 dBA
L 95.00		39.4 dBA
L 99.00		38.3 dBA

SSA Intervals

Translated: 7-Sep-10 12:08:33
File Translated: Y:\824 Measurements\Heber\030509__001.slmdl
Model Number: 824
Serial Number: A3007
Firmware Rev: 4.283
Software Version: 3.12
Name: EDAW, Inc.
Descr1: 1420 Kettner Blvd., Ste. 620
Descr2: San Diego, CA 92101
Setup: 1M-1S.ssa
Setup Descr: SLM & RTA 1min-1Sec
Location:
Note 1:
Note 2:

Weighting: A
Peak Weighting: Flat
Detector: Slow
RTA Detector: Fast

Rec #	Date	Time	Duration	Leq	SEL	LMin	LMax	UwPk	Peak	L1.00	L5.00	L50.00	L90.00	L95.00	L99.00
1	5-Mar-09	9:05:01	00:58.6	62.8	80.5	42.3	69.8	91.7	83.2	69.701	67.896	60.896	50.857	46.498	42.498
2	5-Mar-09	9:06:00	01:00.0	59.6	77.4	45.7	67.4	89.6	80.9	67.42	66.428	52.732	46.654	46.021	45.693
3	5-Mar-09	9:07:00	01:00.0	58.5	76.3	44.3	70	85.2	82.4	69.545	66.795	50.662	44.959	44.475	44.31
4	5-Mar-09	9:08:00	01:00.0	58.7	76.5	45.4	66.6	90.3	80.1	66.584	63.967	53.857	48.818	48.092	45.834
5	5-Mar-09	9:09:00	01:00.0	56.1	73.8	44.4	64.4	80.9	77.6	64.373	63.334	48.584	45.256	44.771	44.373
6	5-Mar-09	9:10:00	01:00.0	58.1	75.9	43.3	67.4	93.5	80	67.42	65.998	51.295	44.131	43.631	43.287
7	5-Mar-09	9:11:00	01:00.0	56.2	73.9	41.7	65.3	83.8	78.7	65.162	63.529	45.685	42.662	42.217	41.725
8	5-Mar-09	9:12:00	01:00.0	53.8	71.6	40.2	63.1	81.7	77.9	62.865	61.646	49.146	40.959	40.475	40.225
9	5-Mar-09	9:13:00	01:00.0	57.1	74.9	38.5	65.9	83.1	79.4	65.545	63.998	48.084	39.678	39.131	38.49
10	5-Mar-09	9:14:00	01:00.0	56.8	74.6	37.2	66.6	82.5	79.4	66.373	64.615	45.443	39.193	38.334	37.295
11	5-Mar-09	9:15:00	01:00.0	54.2	72	42.4	64.2	80.5	77.6	63.998	62.334	45.982	43.943	43.295	42.443
12	5-Mar-09	9:16:00	01:00.0	54.8	72.6	42.4	65.6	81.8	80.7	65.623	63.795	48.412	44.662	43.998	42.412
13	5-Mar-09	9:17:00	01:00.0	54.9	72.7	41.2	64.2	79.8	76.4	63.998	62.803	45.123	41.959	41.475	41.154
14	5-Mar-09	9:18:00	01:00.0	52.1	69.8	39.8	62	78.1	75.5	61.732	60.287	47.615	42.475	41.435	40.248
15	5-Mar-09	9:19:00	01:00.0	53.2	71	40	61.7	77	74.4	61.584	60.475	47.123	40.904	40.451	40.092
16	5-Mar-09	9:20:00	01:00.0	43.8	61.5	39.2	52.7	86.6	76.9	50.498	49.178	41.935	39.904	39.451	39.209
17	5-Mar-09	9:21:00	01:00.0	56	73.7	42.3	63.3	80	78.5	63.287	62.185	51.459	44.607	42.998	42.287
18	5-Mar-09	9:22:00	01:00.0	58.9	76.7	40.8	65.8	92.3	79.5	65.826	65.225	51.998	42.17	41.6	41.053
19	5-Mar-09	9:23:00	01:00.0	41.8	59.6	39.2	45.4	74.9	57.9	45.42	44.881	41.256	40.014	39.521	39.24
20	5-Mar-09	9:24:00	01:00.0	51.3	69	39.3	62.8	78.2	75.7	62.373	59.834	43.217	40.967	40.193	39.303
21	5-Mar-09	9:25:00	01:00.0	59.2	77	39.2	67.1	85.7	79.8	66.889	66.357	51.615	39.998	39.498	39.24
22	5-Mar-09	9:26:00	01:00.0	54.2	72	38.5	66.5	83.7	83.1	66.373	63.396	41.623	39.24	38.998	38.49
23	5-Mar-09	9:27:00	01:00.0	51.6	69.4	37.8	63.4	80	76.6	63.287	60.748	39.951	38.357	38.123	37.818
24	5-Mar-09	9:28:00	01:00.0	58	75.8	39.3	68.6	88.2	85.2	68.545	65.248	46.85	40.084	39.568	39.271
25	5-Mar-09	9:29:00	01:00.0	55.6	73.4	37.4	67.4	85	81.4	67.373	64.6	46.631	38.646	38.201	37.42
26	5-Mar-09	9:30:00	01:00.0	56.2	74	37.2	64.4	81.2	77.9	64.412	63.264	46.568	40.873	38.162	37.24
27	5-Mar-09	9:31:00	01:00.0	59.4	77.1	41.1	68.9	84.6	83.3	68.685	66.248	55.732	43.842	41.959	41.201
28	5-Mar-09	9:32:00	01:00.0	51.8	69.6	37.2	60.5	77.9	74.3	60.475	59.201	43.365	38.31	37.998	37.24
29	5-Mar-09	9:33:00	01:00.0	58.4	76.2	38.8	67.7	85.4	80.7	67.498	65.935	47.904	41.396	40.459	39.131
30	5-Mar-09	9:34:00	01:00.0	57.6	75.4	38.3	68.7	92.1	81.9	68.498	65.248	43.873	39.014	38.506	38.271
31	5-Mar-09	9:35:00	00:02.4	50.5	54.2	52.6	60.1	71.1	68.5	999	59.498	55.662	52.998	52.592	52.592

SLM & RTA Summary

Translated: 7-Sep-10 12:09:11
 File Translated: Y:\824 Measurements\Heber\030509__002.slmdl
 Model Number: 824
 Serial Number: A3007
 Firmware Rev: 4.283
 Software Version: 3.12
 Name: EDAW, Inc.
 Descr1: 1420 Kettner Blvd., Ste. 620
 Descr2: San Diego, CA 92101
 Setup: 1M-1S.ssa
 Setup Descr: SLM & RTA 1min-1Sec
 Location: **MS2**
 Note 1:
 Note 2:

Overall Any Data

Start Time: 5-Mar-09 9:53:01
 Elapsed Time: 30:00.6

	A Weight	C Weight	Flat
Leq:	51.1 dBA	61.0 dBC	63.5 dBF
SEL:	83.6 dBA	93.6 dBC	96.0 dBF
Peak:	81.5 dBA	82.9 dBC	86.4 dBF
	3/5/2009 10:22	3/5/2009 10:22	3/5/2009 10:03
Lmax (slow):	61.5 dBA	73.9 dBC	74.9 dBF
	3/5/2009 9:53	3/5/2009 10:08	3/5/2009 10:03
Lmin (slow):	36.9 dBA	50.3 dBC	53.0 dBF
	3/5/2009 10:18	3/5/2009 10:11	3/5/2009 10:11
Lmax (fast):	65.5 dBA	77.3 dBC	78.9 dBF
	3/5/2009 9:53	3/5/2009 10:08	3/5/2009 10:03
Lmin (fast):	35.7 dBA	47.7 dBC	50.9 dBF
	3/5/2009 10:18	3/5/2009 10:11	3/5/2009 10:11
Lmax (impulse):	67.5 dBA	78.1 dBC	82.1 dBF
	3/5/2009 10:02	3/5/2009 10:08	3/5/2009 10:03
Lmin (impulse):	37.3 dBA	51.4 dBC	54.4 dBF
	3/5/2009 10:18	3/5/2009 10:10	3/5/2009 10:11

Spectra

Start Time:

5-Mar-09

9:53:01 Run Time:

30:00.6

Freq Hz

	Leq 1/3 Oct	Leq 1/1 Oct	Max 1/3 Oct	Max 1/1 Oct	Min 1/3 Oct	Min 1/1 Oct
12.5	55.8		55.5		29	
16	54.1	59	54.5	60	31.7	35.3
20	52.2		55.6		30.5	
25	51.5		53.3		32.4	
31.5	51.4	57	52.1	59.5	34	38.2
40	53.4		57.2		33.6	
50	56		62.8		31.8	
63	54.1	58.9	52.7	63.4	34.7	37.5
80	50.9		50.2		30.5	
100	47.9		52.6		24.3	
125	42.5	49.5	45.9	54.1	18.8	25.7
160	39.6		45.8		14.4	
200	38.4		42.9		13.5	
250	40.4	44.8	47.3	49.2	14.5	19.7
315	40.9		39.7		16.3	
400	39.3		43		18.5	
500	40.9	45.4	43.6	49.7	20	24.5
630	41.5		47		20.5	
800	40.9		47.6		18	
1000	41.2	45.9	50.4	55.2	18.1	22.5
1250	41.4		52.1		17.1	
1600	39.4		51.9		18.1	
2000	41.2	44.5	58.2	59.6	18	23.8
2500	37.8		50.1		20.6	
3150	35.1		45.7		19.5	
4000	33	43.3	44	49.6	18.4	24
5000	42.1		44.7		19.6	
6300	25		36.8		16.7	
8000	20.9	27.8	25.7	37.4	17.2	22
10000	22.1		25		17.8	
12500	20.1		22.1		18.1	
16000	21.3	26.1	22	26.9	19.6	24.6
20000	22.3		22.4		21.3	

Ln Start Level:	15 dB	
L 1.00		58.8 dBA
L 5.00		56.3 dBA
L 50.00		48.5 dBA
L 90.00		42.3 dBA
L 95.00		40.7 dBA
L 99.00		39 dBA

SSA Intervals

Translated: 7-Sep-10 12:09:26
File Translated: Y:\824 Measurements\Heber\030509__002.slmdl
Model Number: 824
Serial Number: A3007
Firmware Rev: 4.283
Software Version: 3.12
Name: EDAW, Inc.
Descr1: 1420 Kettner Blvd., Ste. 620
Descr2: San Diego, CA 92101
Setup: 1M-1S.ssa
Setup Descr: SLM & RTA 1min-1Sec
Location:
Note 1:
Note 2:

Weighting: A
Peak Weighting: Flat
Detector: Slow
RTA Detector: Fast

Rec #	Date	Time	Duration	Leq	SEL	LMin	LMax	UwPk	Peak	L1.00	L5.00	L50.00	L90.00	L95.00	L99.00
1	5-Mar-09	9:53:01	01:00.0	54.1	71.8	42.8	61.5	78.7	78	60.943	59.92	48.373	44.576	44.1	43.217
2	5-Mar-09	9:54:01	01:00.0	49.8	67.6	44.4	55.7	77.6	69.5	55.373	53.998	47.842	46.654	45.85	44.709
3	5-Mar-09	9:55:01	01:00.0	51.1	68.9	48.1	57.3	77.6	73.7	56.498	54.881	49.795	48.451	48.225	48.139
4	5-Mar-09	9:56:01	01:00.0	52.5	70.3	47.1	57.3	78.1	72.5	57.303	56.615	51.35	48.381	47.857	47.178
5	5-Mar-09	9:57:01	01:00.0	52.1	69.8	47.1	58.5	79.2	71.6	58.537	57.084	50.928	48.185	47.748	47.154
6	5-Mar-09	9:58:01	01:00.0	51	68.8	45.8	57.7	79.6	81.4	56.998	56.045	48.506	46.896	46.42	46.037
7	5-Mar-09	9:59:01	01:00.0	52.4	70.2	47.7	56.8	74.8	72.8	56.162	55.568	51.678	49.154	48.623	48.084
8	5-Mar-09	10:00:01	01:00.0	52	69.7	46.2	57.4	77.3	72.6	57.365	56.779	48.529	46.701	46.35	46.17
9	5-Mar-09	10:01:01	01:00.0	52.4	70.1	45.2	58.5	81.2	79.7	57.92	56.779	50.56	46.928	46.1	45.232
10	5-Mar-09	10:02:01	01:00.0	53.4	71.1	46.4	59.4	79.2	78.2	58.334	56.865	52.717	48.146	47.482	46.623
11	5-Mar-09	10:03:01	01:00.0	52.2	70	46.7	58.3	86.4	77.8	58.342	57.068	50.498	48.287	47.764	47.131
12	5-Mar-09	10:04:01	01:00.0	53.8	71.6	46.4	59.2	83.9	71.9	58.896	57.709	53.037	47.389	46.998	46.373
13	5-Mar-09	10:05:01	01:00.0	50.4	68.1	45.9	56.1	76.8	73.5	55.201	54.357	49.646	47.545	46.998	46.17
14	5-Mar-09	10:06:01	01:00.0	47.8	65.6	45	50.4	79.8	71	50.412	49.662	47.584	46.225	46.021	45.232
15	5-Mar-09	10:07:01	01:00.0	48.5	66.3	43.6	53.3	79.7	68.8	52.912	51.709	47.795	46.029	45.365	44.217
16	5-Mar-09	10:08:01	01:00.0	51.5	69.3	44	59.7	82.7	75.7	59.584	56.998	48.685	46.35	46.045	45.115
17	5-Mar-09	10:09:01	01:00.0	44.8	62.6	39.6	48.7	78.6	69.7	48.545	47.615	44.318	41.967	41.139	40.115
18	5-Mar-09	10:10:01	01:00.0	44	61.8	39.6	52	73.7	68.5	50.623	47.701	43.209	41.014	40.435	39.834
19	5-Mar-09	10:11:01	01:00.0	45.7	63.5	39.1	51.3	75.4	74.9	50.912	50.123	44.42	41.889	41.037	39.998
20	5-Mar-09	10:12:01	01:00.0	52.8	70.5	41.4	61.3	80.1	79.9	61.271	59.709	47.795	43.209	42.553	41.553
21	5-Mar-09	10:13:01	01:00.0	50.7	68.5	42.5	54.7	79	70.5	54.662	54.412	50.185	43.865	43.35	42.623
22	5-Mar-09	10:14:01	01:00.0	45	62.8	42.2	53	82.6	74.7	51.662	46.85	44.404	43.154	42.92	42.193
23	5-Mar-09	10:15:01	01:00.0	48.2	66	40.2	55.4	80.9	70.2	55.381	54.178	45.365	41.084	40.545	40.17
24	5-Mar-09	10:16:01	01:00.0	52.1	69.8	39	60.8	81.6	74.5	60.732	59.545	42.256	39.764	39.365	39.045
25	5-Mar-09	10:17:01	01:00.0	41.5	59.3	38.2	51.6	74.1	72.5	49.998	45.873	39.889	38.49	38.24	38.232
26	5-Mar-09	10:18:01	01:00.0	43.7	61.4	36.9	55.3	70.3	70.6	54.201	46.998	41.521	39.232	38.162	37.1
27	5-Mar-09	10:19:01	01:00.0	49.1	66.9	41.7	56.8	74.4	72.5	56.287	55.389	43.982	42.412	41.889	41.67
28	5-Mar-09	10:20:01	01:00.0	52.2	69.9	41.8	59.4	77	78.1	58.498	56.365	51.256	44.209	43.092	41.779
29	5-Mar-09	10:21:01	01:00.0	52.5	70.3	44.6	58.3	81.7	78.3	57.998	56.959	50.834	46.553	45.842	44.623
30	5-Mar-09	10:22:01	01:00.0	53.9	71.7	43.4	59.1	85	81.5	58.904	58.31	52.74	46.545	44.631	43.435
31	5-Mar-09	10:23:01	00:00.6	54.6	52.6	52.3	53.3	83.1	67.5	999	999	52.662	52.318	52.318	52.318

SLM & RTA Summary

Translated: 7-Sep-10 12:09:45
 File Translated: Y:\824 Measurements\Heber\030509__003.slmdl
 Model Number: 824
 Serial Number: A3007
 Firmware Rev: 4.283
 Software Version: 3.12
 Name: EDAW, Inc.
 Descr1: 1420 Kettner Blvd., Ste. 620
 Descr2: San Diego, CA 92101
 Setup: 1M-1S.ssa
 Setup Descr: SLM & RTA 1min-1Sec
 Location: **MS3**
 Note 1:
 Note 2:

Overall Any Data

Start Time: 5-Mar-09 10:38:01
 Elapsed Time: 1:01:11

	A Weight	C Weight	Flat
Leq:	52.9 dBA	64.3 dBC	68.1 dBF
SEL:	88.6 dBA	99.9 dBC	103.8 dBF
Peak:	89.9 dBA	97.0 dBC	97.5 dBF
	3/5/2009 10:47	3/5/2009 10:59	3/5/2009 10:59
Lmax (slow):	76.8 dBA	84.4 dBC	84.5 dBF
	3/5/2009 10:59	3/5/2009 10:59	3/5/2009 10:59
Lmin (slow):	33.4 dBA	49.8 dBC	52.5 dBF
	3/5/2009 10:39	3/5/2009 10:57	3/5/2009 10:57
Lmax (fast):	78.9 dBA	86.5 dBC	86.6 dBF
	3/5/2009 10:59	3/5/2009 10:59	3/5/2009 10:59
Lmin (fast):	32.9 dBA	48.6 dBC	51.2 dBF
	3/5/2009 10:39	3/5/2009 10:50	3/5/2009 10:57
Lmax (impulse):	80.3 dBA	87.0 dBC	87.1 dBF
	3/5/2009 10:47	3/5/2009 10:59	3/5/2009 10:59
Lmin (impulse):	33.4 dBA	50.8 dBC	54.0 dBF
	3/5/2009 10:39	3/5/2009 10:58	3/5/2009 10:57

Spectra

Start Time:

Freq Hz

	5-Mar-09		10:38:01 Run Time:		1:01:11		
	Leq 1/3 Oct	Leq 1/1 Oct	Max 1/3 Oct	Max 1/1 Oct	Min 1/3 Oct	Min 1/1 Oct	
12.5	62.1			71.6			34.9
16	60.3		65.4	66.6	73.4		33.3
20	58.7			64.4			31.5
25	57.2			66.7			34.4
31.5	55.2		60.4	63.7	71.2		33.3
40	53.8			67.8			33.9
50	52.8			67.7			32.7
63	51.4		57.3	70.7	76.1		33
80	53.2			73.6			31.9
100	51.4			73.6			29.7
125	50.9		56.1	72	77.3		25
160	51.7			71.6			20.8
200	51.3			70			18
250	51.9		56.4	76.1	82.2		13.7
315	51.8			80.6			12.8
400	49.8			78.4			13.7
500	47.4		52.7	72.4	79.7		14.6
630	45.5			67.6			15
800	42.9			65.3			15.1
1000	40.7		45.6	54	65.7		14.5
1250	36.7			50			14.5
1600	31.3			38.6			14.6
2000	28.4		34.1	26.6	38.9		14.9
2500	27.1			19.2			15.4
3150	28.2			18.9			15.3
4000	23.4		29.9	26.1	34.8		15.7
5000	19.9			34			16.4
6300	19.4			20			16.6
8000	19.3		24.1	20.7	25		17.3
10000	19.3			20			17.9
12500	19.7			20			18.1
16000	20.8		25.8	21.4	26.6		19.5
20000	22.3			23.4			21.3

Ln Start Level:

15 dB

L 1.00	66.4 dBA
L 5.00	56.4 dBA
L 50.00	40.4 dBA
L 90.00	35.4 dBA
L 95.00	34.7 dBA
L 99.00	33.9 dBA

SSA Intervals

Translated: 7-Sep-10 12:10:05
File Translated: Y:\824 Measurements\Heber\030509__003.slmml
Model Number: 824
Serial Number: A3007
Firmware Rev: 4.283
Software Version: 3.12
Name: EDAW, Inc.
Descr1: 1420 Kettner Blvd., Ste. 620
Descr2: San Diego, CA 92101
Setup: 1M-1S.ssa
Setup Descr: SLM & RTA 1min-1Sec
Location: **MS3**
Note 1:
Note 2:

Weighting: A
Peak Weighting: Flat
Detector: Slow
RTA Detector: Fast

SLM & RTA Summary

Translated: 7-Sep-10 12:10:27
 File Translated: Y:\824 Measurements\Heber\030509__004.slmdl
 Model Number: 824
 Serial Number: A3007
 Firmware Rev: 4.283
 Software Version: 3.12
 Name: EDAW, Inc.
 Descr1: 1420 Kettner Blvd., Ste. 620
 Descr2: San Diego, CA 92101
 Setup: 1M-1S.ssa
 Setup Descr: SLM & RTA 1min-1Sec
 Location: **MS4**
 Note 1:
 Note 2:

Overall Any Data

Start Time: 5-Mar-09 11:57:31
 Elapsed Time: 30:00.8

	A Weight	C Weight	Flat
Leq:	45.3 dBA	62.9 dBC	66.0 dBF
SEL:	77.9 dBA	95.5 dBC	98.6 dBF
Peak:	89.3 dBA	97.5 dBC	98.1 dBF
	3/5/2009 12:06	3/5/2009 12:01	3/5/2009 12:01
Lmax (slow):	61.4 dBA	76.1 dBC	78.2 dBF
	3/5/2009 12:01	3/5/2009 12:01	3/5/2009 12:01
Lmin (slow):	34.4 dBA	51.8 dBC	55.2 dBF
	3/5/2009 12:14	3/5/2009 12:15	3/5/2009 12:15
Lmax (fast):	67.4 dBA	83.8 dBC	85.2 dBF
	3/5/2009 12:01	3/5/2009 12:01	3/5/2009 12:01
Lmin (fast):	34.0 dBA	49.7 dBC	52.0 dBF
	3/5/2009 12:14	3/5/2009 12:15	3/5/2009 12:15
Lmax (impulse):	71.9 dBA	88.2 dBC	89.5 dBF
	3/5/2009 12:01	3/5/2009 12:01	3/5/2009 12:01
Lmin (impulse):	34.1 dBA	53.1 dBC	56.5 dBF
	3/5/2009 12:14	3/5/2009 12:15	3/5/2009 12:15

Spectra

Start Time:

5-Mar-09

11:57:31 Run Time:

30:00.8

Freq Hz

	Leq 1/3 Oct	Leq 1/1 Oct	Max 1/3 Oct	Max 1/1 Oct	Min 1/3 Oct	Min 1/1 Oct
12.5	59.1		65.1		30.2	
16	57.9	62.9	63.3	68.3	34.6	38.5
20	57		61.6		35	
25	57		59.7		34.8	
31.5	56.1	60.9	62.5	65.5	36.7	40.9
40	54.9		59.1		36.6	
50	54.3		63.6		35.9	
63	54.1	59.3	63	68.1	35.6	40.8
80	55		63.4		36.5	
100	52.6		69.3		31.3	
125	48	54.6	52.6	70.3	25.7	32.7
160	46.6		63		22.1	
200	42.1		69.3		17.5	
250	37.3	44	55.3	69.6	16.9	21.1
315	35.7		54.3		13.7	
400	36.1		51.9		15.8	
500	37.4	41.3	52.8	57.1	16.9	21.2
630	36		52.1		16.5	
800	34.8		51.8		17.2	
1000	33.9	38.7	49.2	54.6	17.3	22
1250	32.9		47.1		17.3	
1600	32.1		48.4		16.9	
2000	30.9	35.6	48.3	53	16.5	21.5
2500	28.9		47.9		16.7	
3150	29.2		46.3		17.8	
4000	28.1	32.8	43.5	49	18	22.5
5000	26.2		41.8		17.5	
6300	23.8		38.5		17.4	
8000	22.3	27.2	35.2	40.9	17.9	22.7
10000	20.8		33		18.3	
12500	20.6		31.5		18.8	
16000	21.3	26.4	28	33.9	19.8	25.1
20000	22.6		26.2		21.8	

Ln Start Level:	15 dB	
L 1.00		55.9 dBA
L 5.00		50 dBA
L 50.00		40.9 dBA
L 90.00		38 dBA
L 95.00		37.2 dBA
L 99.00		34.6 dBA

SSA Intervals

Translated: 7-Sep-10 12:10:45
File Translated: Y:\824 Measurements\Heber\030509__004.slmdl
Model Number: 824
Serial Number: A3007
Firmware Rev: 4.283
Software Version: 3.12
Name: EDAW, Inc.
Descr1: 1420 Kettner Blvd., Ste. 620
Descr2: San Diego, CA 92101
Setup: 1M-1S.ssa
Setup Descr: SLM & RTA 1min-1Sec
Location: **MS4**
Note 1:
Note 2:

Weighting: A
Peak Weighting: Flat
Detector: Slow
RTA Detector: Fast

Rec #	Date	Time	Duration	Leq	SEL	LMin	LMax	UwPk	Peak	L1.00	L5.00	L50.00	L90.00	L95.00	L99.00
1	5-Mar-09	11:57:31	01:00.0	41	58.7	37.2	49.3	79.3	81	48.201	44.248	40.17	38.264	38.037	37.248
2	5-Mar-09	11:58:31	01:00.0	46.7	64.4	39.8	51.9	88.2	66.9	51.732	50.795	45.615	40.35	40.014	39.787
3	5-Mar-09	11:59:31	01:00.0	44.9	62.7	39.6	55.4	89.4	69.6	54.998	51.248	41.857	40.092	39.646	39.553
4	5-Mar-09	12:00:31	01:00.0	48	65.8	40.1	59.7	98.1	83.5	57.998	51.896	46.975	41.435	40.795	40.162
5	5-Mar-09	12:01:31	01:00.0	50.6	68.4	37	61.4	85.3	84.5	60.998	58.271	40.928	37.81	37.404	37.084
6	5-Mar-09	12:02:31	01:00.0	47.6	65.4	39.1	55.3	85.5	78.6	54.568	53.209	43.467	40.365	39.92	39.193
7	5-Mar-09	12:03:31	01:00.0	43.4	61.2	38	51	83.9	79.2	49.889	48.35	42.014	39.435	39.084	38.232
8	5-Mar-09	12:04:31	01:00.0	42.4	60.2	36.5	49.2	76.8	74.5	48.912	47.756	40.06	37.568	37.209	36.498
9	5-Mar-09	12:05:31	01:00.0	45.7	63.5	39.8	52.5	80	66.1	51.998	49.998	44.326	40.998	40.443	39.998
10	5-Mar-09	12:06:31	01:00.0	45.2	62.9	37.7	55.4	88.7	89.3	52.998	49.459	43.623	38.42	38.084	37.748
11	5-Mar-09	12:07:31	01:00.0	45	62.7	38.6	50.6	75.4	74.8	49.889	48.943	43.232	39.693	39.232	38.584
12	5-Mar-09	12:08:31	01:00.0	46.7	64.5	36.8	58.6	79.6	72.5	57.795	49.662	42.498	37.553	37.24	36.998
13	5-Mar-09	12:09:31	01:00.0	44.9	62.7	37	56.8	81	73.8	54.998	50.857	42.475	38.248	37.826	37.17
14	5-Mar-09	12:10:31	01:00.0	52	69.8	38.7	61	83.2	79.8	60.662	58.904	47.615	39.92	39.326	38.662
15	5-Mar-09	12:11:31	01:00.0	44.1	61.9	38.5	51.4	84.5	73.2	50.873	48.709	42.693	39.24	38.826	38.529
16	5-Mar-09	12:12:31	01:00.0	44	61.7	38.2	55.1	79	73.6	53.998	46.693	40.498	38.771	38.389	38.232
17	5-Mar-09	12:13:31	01:00.0	40.5	58.3	36	55.1	84.6	68.3	53.748	47.662	37.967	36.412	36.201	36.045
18	5-Mar-09	12:14:31	01:00.0	39.4	57.1	34.4	48.8	82.4	79.3	48.373	45.248	36.842	34.443	34.357	34.357
19	5-Mar-09	12:15:31	01:00.0	41.9	59.7	34.4	45.9	88.2	66.4	45.912	45.592	40.451	34.42	34.381	34.381
20	5-Mar-09	12:16:31	01:00.0	42.7	60.5	38	46.5	86.6	67.8	46.373	45.678	42.232	38.592	38.295	38.06
21	5-Mar-09	12:17:31	01:00.0	45.5	63.3	38.5	50.8	83.3	73.2	50.779	50.139	43.748	39.373	38.685	38.506
22	5-Mar-09	12:18:31	01:00.0	42.5	60.3	38.3	46.1	81.4	57.5	45.693	44.865	42.154	39.498	39.053	38.31
23	5-Mar-09	12:19:31	01:00.0	40.2	57.9	37.6	45.5	77.3	74.5	44.396	42.553	39.74	38.107	37.615	37.584
24	5-Mar-09	12:20:31	01:00.0	40.3	58	38	42.4	81.8	63.5	41.998	41.818	40.084	38.787	38.389	38.076
25	5-Mar-09	12:21:31	01:00.0	39.7	57.5	37.9	43.2	78.7	71.4	42.693	41.779	39.396	38.271	38.123	38.014
26	5-Mar-09	12:22:31	01:00.0	39.2	57	37.6	41.4	81.3	55.6	41.162	40.725	38.99	38.107	37.959	37.56
27	5-Mar-09	12:23:31	01:00.0	41.2	58.9	36.9	50.8	77.2	66.2	50.162	46.248	39.459	37.85	37.42	37.068
28	5-Mar-09	12:24:31	01:00.0	38.6	56.4	36.3	40.6	73.1	59.5	40.623	39.92	38.514	37.154	36.771	36.295
29	5-Mar-09	12:25:31	01:00.0	39.4	57.1	36.9	46	79.3	72.9	45.287	43.271	38.545	37.389	37.162	36.889
30	5-Mar-09	12:26:31	01:00.0	49	66.8	38.4	56.2	81.5	76.5	56.162	55.053	45.685	40.998	39.631	38.389
31	5-Mar-09	12:27:31	00:00.9	52.1	51.5	53.5	55	79	75.3	999	999	53.998	53.545	53.545	53.545

SLM & RTA Summary

Translated: 7-Sep-10 12:11:19
 File Translated: Y:\824 Measurements\Heber\030509__005.slmdl
 Model Number: 824
 Serial Number: A3007
 Firmware Rev: 4.283
 Software Version: 3.12
 Name: EDAW, Inc.
 Descr1: 1420 Kettner Blvd., Ste. 620
 Descr2: San Diego, CA 92101
 Setup: 1M-1S.ssa
 Setup Descr: SLM & RTA 1min-1Sec
 Location: **MS5**
 Note 1:
 Note 2:

Overall Any Data

Start Time: 5-Mar-09 12:38:01
 Elapsed Time: 30:19.6

	A Weight	C Weight	Flat
Leq:	49.4 dBA	64.3 dBC	66.7 dBF
SEL:	82.0 dBA	96.9 dBC	99.3 dBF
Peak:	85.2 dBA	94.1 dBC	94.9 dBF
	3/5/2009 13:02	3/5/2009 12:40	3/5/2009 12:40
Lmax (slow):	67.9 dBA	83.6 dBC	84.3 dBF
	3/5/2009 12:40	3/5/2009 12:40	3/5/2009 12:40
Lmin (slow):	36.4 dBA	52.4 dBC	55.1 dBF
	3/5/2009 12:58	3/5/2009 12:58	3/5/2009 12:58
Lmax (fast):	71.1 dBA	85.0 dBC	85.5 dBF
	3/5/2009 12:44	3/5/2009 12:40	3/5/2009 12:40
Lmin (fast):	35.8 dBA	50.3 dBC	52.8 dBF
	3/5/2009 12:58	3/5/2009 12:59	3/5/2009 12:58
Lmax (impulse):	72.8 dBA	86.6 dBC	87.3 dBF
	3/5/2009 12:44	3/5/2009 12:40	3/5/2009 12:40
Lmin (impulse):	36.8 dBA	53.2 dBC	55.7 dBF
	3/5/2009 12:58	3/5/2009 12:58	3/5/2009 12:58

Spectra

Start Time:

5-Mar-09

12:38:01 Run Time:

30:19.6

Freq Hz

	Leq 1/3 Oct	Leq 1/1 Oct	Max 1/3 Oct	Max 1/1 Oct	Min 1/3 Oct	Min 1/1 Oct
12.5	58.3		66.1		31.2	
16	57.5	62.4	70.7	75.5	35.2	40.1
20	57.1		72.9		37.5	
25	54.5		70.2		35.2	
31.5	54.8	59.9	75.1	80.6	37.9	42
40	55.9		78.5		38	
50	57		80		36.5	
63	57.8	61.6	81.9	84.7	35.8	40.6
80	55.2		76.3		34.9	
100	52.9		65.7		32.1	
125	51.8	56.7	77.2	79.6	26.9	33.6
160	51		75.5		23.1	
200	49.1		74.5		22	
250	45.5	51.8	66.9	75.5	21.1	26
315	45.2		63.9		20.3	
400	43.2		64		21.2	
500	41.4	47	55.7	65.1	22.8	28
630	41.8		55.6		24.9	
800	40.3		55.1		25.3	
1000	38.9	43.5	54.1	58.6	23.8	28.5
1250	36.1		51.7		21.1	
1600	33		52.1		19.8	
2000	30.8	35.9	49.1	54.6	17.6	23
2500	28.6		46.7		16.7	
3150	27		46		15.9	
4000	26	30.6	44.4	49	16.5	21.2
5000	23.9		40.7		16.8	
6300	22.2		37.4		16.9	
8000	21.3	26.2	34.5	39.8	17.8	22.5
10000	20.7		31.2		18.3	
12500	20.6		28.3		18.7	
16000	21.4	26.5	24.5	30.7	20.1	25.2
20000	22.8		23.5		21.8	

Ln Start Level: 15 dB
 L 1.00 61.4 dBA
 L 5.00 53.6 dBA
 L 50.00 43.7 dBA
 L 90.00 40.3 dBA
 L 95.00 39.6 dBA
 L 99.00 38.8 dBA

Detector: Slow
 Weighting: A
 SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
 SPL Exceedance level 2: 120 dB Exceeded: 0 times
 Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
 Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
 Hysteresis: 2
 Overloaded: 0 time(s)
 Paused: 0 times for 00:00:00.0

Current Any Data
 Start Time: 5-Mar-09 12:38:01
 Elapsed Time: 30:19.6

	A Weight	C Weight	Flat
Leq:	49.4 dBA	64.3 dBC	66.7 dBF
SEL:	82.0 dBA	96.9 dBC	99.3 dBF
Peak:	85.2 dBA	94.1 dBC	94.9 dBF
	3/5/2009 13:02	3/5/2009 12:40	3/5/2009 12:40
Lmax (slow):	67.9 dBA	83.6 dBC	84.3 dBF
	3/5/2009 12:40	3/5/2009 12:40	3/5/2009 12:40
Lmin (slow):	36.4 dBA	52.4 dBC	55.1 dBF
	3/5/2009 12:58	3/5/2009 12:58	3/5/2009 12:58
Lmax (fast):	71.1 dBA	85.0 dBC	85.5 dBF
	3/5/2009 12:44	3/5/2009 12:40	3/5/2009 12:40
Lmin (fast):	35.8 dBA	50.3 dBC	52.8 dBF
	3/5/2009 12:58	3/5/2009 12:59	3/5/2009 12:58
Lmax (impulse):	72.8 dBA	86.6 dBC	87.3 dBF
	3/5/2009 12:44	3/5/2009 12:40	3/5/2009 12:40

Lmin (impulse):	36.8 dBA	53.2 dBC	55.7 dBF
	3/5/2009 12:58	3/5/2009 12:58	3/5/2009 12:58

Calibrated:	1/6/2000 3:19	Offset: -46.2 dB
Checked:	3/5/2009 13:36	Level: 114.2 dB
Calibrator	4214	Level: 114.0 dB
Cal Records Count:	0	

Interval Records:	Enabled	Number Interval R	31
History Records:	Enabled	Number History R	1821
Run/Stop Records:		Number Run/Stop	2

SSA Intervals

Translated: 7-Sep-10 12:12:07
File Translated: Y:\824 Measurements\Heber\030509__005.slmdl
Model Number: 824
Serial Number: A3007
Firmware Rev: 4.283
Software Version: 3.12
Name: EDAW, Inc.
Descr1: 1420 Kettner Blvd., Ste. 620
Descr2: San Diego, CA 92101
Setup: 1M-1S.ssa
Setup Descr: SLM & RTA 1min-1Sec
Location: **MS5**
Note 1:
Note 2:

Weighting: A
Peak Weighting: Flat
Detector: Slow
RTA Detector: Fast

Rec #	Date	Time	Duration	Leq	SEL	LMin	LMax	UwPk	Peak	L1.00	L5.00	L50.00	L90.00	L95.00	L99.00
1	5-Mar-09	12:38:01	01:00.0	45.4	63.1	40	55.4	82	71.9	53.498	50.748	44.701	40.701	40.35	40.068
2	5-Mar-09	12:39:01	01:00.0	41.8	59.6	39.3	45.3	80	61.3	44.787	43.81	41.506	39.764	39.381	39.303
3	5-Mar-09	12:40:01	01:00.0	59.9	77.7	44.1	67.9	94.9	80.2	67.639	66.443	55.334	46.92	45.998	44.498
4	5-Mar-09	12:41:01	01:00.0	43.6	61.4	40.6	49.3	81.3	72.7	47.834	46.842	42.865	41.115	40.662	40.6
5	5-Mar-09	12:42:01	01:00.0	43.7	61.5	40.1	47.2	77.2	72.9	46.998	46.607	43.006	41.146	40.771	40.162
6	5-Mar-09	12:43:01	01:00.0	42.6	60.4	38.5	48.4	80.8	69.3	48.162	45.92	41.693	39.404	39.107	38.451
7	5-Mar-09	12:44:01	01:00.0	55.5	73.2	39.2	65.9	87.1	82.9	64.904	61.662	46.232	40.537	40.076	39.248
8	5-Mar-09	12:45:01	01:00.0	53.4	71.2	44.8	65.7	87.2	80.8	65.162	60.584	49.146	46.115	45.545	45.076
9	5-Mar-09	12:46:01	01:00.0	41.8	59.5	39.2	44.8	81.9	61.7	43.998	43.678	41.654	40.146	39.701	39.24
10	5-Mar-09	12:47:01	01:00.0	44.1	61.8	40.1	50.2	81.2	78	48.998	46.67	43.74	40.748	40.373	40.123
11	5-Mar-09	12:48:01	01:00.0	47.5	65.3	40.9	53.3	83.3	79.6	53.342	52.303	44.943	41.49	41.232	41.029
12	5-Mar-09	12:49:01	01:00.0	45.2	63	40.7	49.7	79.1	77.7	48.975	48.584	43.928	41.396	41.053	40.67
13	5-Mar-09	12:50:01	01:00.0	43.9	61.7	39.7	49.3	87.1	65.9	48.998	47.6	43.279	40.232	39.826	39.67
14	5-Mar-09	12:51:01	01:00.0	42.6	60.4	39.4	47	78.7	64.8	46.662	44.998	42.232	40.084	39.584	39.373
15	5-Mar-09	12:52:01	01:00.0	41.5	59.3	38.6	45.3	81.9	63.5	44.912	44.373	40.81	39.1	38.701	38.568
16	5-Mar-09	12:53:01	01:00.0	41.9	59.7	38.6	47.9	77.8	64.4	47.373	44.646	41.287	39.092	38.701	38.623
17	5-Mar-09	12:54:01	01:00.0	47.3	65	38.7	56.2	82.2	76.3	55.428	54.154	42.975	40.818	39.459	38.732
18	5-Mar-09	12:55:01	01:00.0	42.2	60	37.9	46	83.6	65.7	45.287	44.514	41.803	39.615	38.881	38.115
19	5-Mar-09	12:56:01	01:00.0	46.7	64.5	39.7	54.6	81.1	75.5	52.998	50.998	45.31	40.779	40.31	39.67
20	5-Mar-09	12:57:01	01:00.0	44.3	62.1	38.9	48.4	85.1	67.3	48.162	47.303	43.873	39.615	39.232	38.857
21	5-Mar-09	12:58:01	01:00.0	47.2	64.9	36.4	53.9	81.8	73.4	53.443	52.373	43.217	37.709	36.857	36.42
22	5-Mar-09	12:59:01	01:00.0	43.7	61.5	38.4	50.5	76.7	71.2	49.998	48.701	41.154	39.24	39.084	38.451
23	5-Mar-09	13:00:01	01:00.0	46.1	63.9	39.5	54.9	79	75.3	54.287	51.615	43.764	40.435	39.998	39.459
24	5-Mar-09	13:01:01	01:00.0	49.2	67	41	55.4	84.5	84.2	55.428	55.076	44.998	41.92	41.451	41.076
25	5-Mar-09	13:02:01	01:00.0	49.4	67.2	42.9	58.2	85.6	85.2	57.498	54.068	47.24	44.217	43.6	43.1
26	5-Mar-09	13:03:01	01:00.0	46.1	63.8	43.4	49	90.6	67.9	48.764	47.928	45.982	44.24	43.959	43.389
27	5-Mar-09	13:04:01	01:00.0	50.3	68.1	40.6	58.4	84.1	77.3	58.412	56.857	45.732	41.654	41.279	40.834
28	5-Mar-09	13:05:01	01:00.0	46.2	64	42.7	50.6	77.1	71.5	50.498	49.459	45.365	43.396	43.139	42.685
29	5-Mar-09	13:06:01	01:00.0	45.2	63	42.3	53.8	80.7	77.6	52.498	48.1	44.162	42.428	42.318	42.318
30	5-Mar-09	13:07:01	01:00.0	48.1	65.9	43.1	55.7	83.1	76.9	54.998	53.435	45.201	43.576	43.287	43.107
31	5-Mar-09	13:08:01	00:19.6	50.4	63.4	42.3	55.2	86.1	75.1	55.225	54.748	46.1	42.592	42.295	42.256

SLM & RTA Summary

Translated: 7-Sep-10 12:12:46
 File Translated: Y:\824 Measurements\Heber\030509__006.slmdl
 Model Number: 824
 Serial Number: A3007
 Firmware Rev: 4.283
 Software Version: 3.12
 Name: EDAW, Inc.
 Descr1: 1420 Kettner Blvd., Ste. 620
 Descr2: San Diego, CA 92101
 Setup: 1M-1S.ssa
 Setup Descr: SLM & RTA 1min-1Sec
 Location: **MS6**
 Note 1:
 Note 2:

Overall Any Data

Start Time: 5-Mar-09 13:37:01
 Elapsed Time: 30:00.5

	A Weight	C Weight	Flat
Leq:	51.2 dBA	69.7 dBC	74.9 dBF
SEL:	83.8 dBA	102.2 dBC	107.5 dBF
Peak:	90.9 dBA	99.8 dBC	102.9 dBF
	3/5/2009 13:39	3/5/2009 13:47	3/5/2009 13:47
Lmax (slow):	70.6 dBA	83.2 dBC	86.4 dBF
	3/5/2009 14:04	3/5/2009 13:47	3/5/2009 13:44
Lmin (slow):	34.0 dBA	52.1 dBC	55.0 dBF
	3/5/2009 13:53	3/5/2009 13:57	3/5/2009 13:57
Lmax (fast):	74.6 dBA	90.7 dBC	93.5 dBF
	3/5/2009 14:04	3/5/2009 13:47	3/5/2009 13:47
Lmin (fast):	33.8 dBA	49.3 dBC	52.7 dBF
	3/5/2009 13:53	3/5/2009 13:57	3/5/2009 13:57
Lmax (impulse):	75.9 dBA	94.1 dBC	96.8 dBF
	3/5/2009 14:04	3/5/2009 13:47	3/5/2009 13:47
Lmin (impulse):	34.0 dBA	53.5 dBC	56.0 dBF
	3/5/2009 13:53	3/5/2009 13:48	3/5/2009 13:57

Spectra

Start Time:

5-Mar-09

13:37:01 Run Time:

30:00.5

Freq Hz

	Leq 1/3 Oct	Leq 1/1 Oct	Max 1/3 Oct	Max 1/1 Oct	Min 1/3 Oct	Min 1/1 Oct
12.5	70.9		69.4		35	
16	69.1	74.1	67.5	72.1	37.9	41.5
20	67.1		62.5		36.9	
25	66.5		63.2		36.6	
31.5	63	68.8	66	70.7	36.3	40.8
40	60.3		67.5		35.1	
50	57.5		68.3		36	
63	54.9	60.7	68.7	74	36.1	39.8
80	55		70.5		31.9	
100	50.6		72.2		25.9	
125	50.3	56	68.8	74.2	21.2	27.7
160	52.5		63.3		18.7	
200	48.7		68		16.8	
250	47.8	52.8	72.4	75.7	15.1	20.7
315	47.5		71.4		15.8	
400	47.4		71.8		17.9	
500	45.7	50.7	71.9	75.6	18.3	23.3
630	43.9		67.7		19.2	
800	41.8		66.2		19.2	
1000	40	44.9	61.3	67.7	17.6	22.8
1250	37.4		55.1		16.8	
1600	33.7		45.3		15.9	
2000	31.5	36.8	32.7	45.5	15.6	20.7
2500	30.3		19.8		16.2	
3150	28		18.5		15.7	
4000	25.6	31	19.8	24.3	16.7	21.3
5000	24.3		20		17.1	
6300	22.5		19.2		17.1	
8000	21.5	26.5	19.7	24.3	17.5	22.4
10000	21.1		19.6		18.3	
12500	20.8		20		18.7	
16000	21.5	26.6	21.3	26.4	20	25.1
20000	22.8		23		21.7	

Ln Start Level:	15 dB	
L 1.00		65 dBA
L 5.00		56.7 dBA
L 50.00		40.9 dBA
L 90.00		36 dBA
L 95.00		35.4 dBA
L 99.00		34.4 dBA

SSA Intervals

Translated: 7-Sep-10 12:13:00
File Translated: Y:\824 Measurements\Heber\030509__006.slmdl
Model Number: 824
Serial Number: A3007
Firmware Rev: 4.283
Software Version: 3.12
Name: EDAW, Inc.
Descr1: 1420 Kettner Blvd., Ste. 620
Descr2: San Diego, CA 92101
Setup: 1M-1S.ssa
Setup Descr: SLM & RTA 1min-1Sec
Location:
Note 1:
Note 2:

Weighting: A
Peak Weighting: Flat
Detector: Slow
RTA Detector: Fast

Rec #	Date	Time	Duration	Leq	SEL	LMin	LMax	UwPk	Peak	L1.00	L5.00	L50.00	L90.00	L95.00	L99.00
1	5-Mar-09	13:37:01	01:00.0	42.7	60.5	38.9	47.3	96.3	76.1	46.248	45.6	42.092	39.842	39.381	39.014
2	5-Mar-09	13:38:01	01:00.0	45.3	63.1	39.8	58.6	94.8	86.2	55.998	47.779	42.662	41.053	40.537	40.053
3	5-Mar-09	13:39:01	01:00.0	51	68.8	37.7	64.3	92.6	90.8	62.998	57.748	42.662	39.389	38.842	37.709
4	5-Mar-09	13:40:01	01:00.0	39.4	57.1	35.6	48.9	86.4	82	47.334	42.959	38.162	35.787	35.631	35.631
5	5-Mar-09	13:41:01	01:00.0	39.1	56.9	35.6	44.2	85.6	68.7	42.998	41.607	38.709	36.764	36.209	35.576
6	5-Mar-09	13:42:01	01:00.0	39.2	57	36.9	41.6	93.8	57.3	41.615	41.584	38.795	37.279	37.131	37.014
7	5-Mar-09	13:43:01	01:00.0	42.4	60.2	37.1	51.2	94.8	78.9	50.201	47.396	40.834	38.139	37.748	37.154
8	5-Mar-09	13:44:01	01:00.0	50.1	67.8	40.2	58.4	98.5	85.3	57.842	56.201	47.037	42.435	41.834	40.553
9	5-Mar-09	13:45:01	01:00.0	52.1	69.9	43.4	60.4	95.8	75	59.748	57.935	49.193	44.514	44.115	43.365
10	5-Mar-09	13:46:01	01:00.0	44	61.8	36	53.5	89	76	52.428	50.107	38.998	36.396	36.193	36.029
11	5-Mar-09	13:47:01	01:00.0	44.3	62.1	35.8	59.9	102.9	85.7	57.498	47.998	38.545	36.225	36.037	35.818
12	5-Mar-09	13:48:01	01:00.0	36	53.8	34.7	42.1	90.2	55.2	40.498	37.834	35.701	35.1	35.021	34.717
13	5-Mar-09	13:49:01	01:00.0	38.8	56.5	35.5	42.4	93.7	59.2	42.443	41.748	38.154	35.771	35.498	35.498
14	5-Mar-09	13:50:01	01:00.0	49.9	67.7	36.3	59.3	93.2	84.6	58.896	57.287	46.1	37.389	36.998	36.295
15	5-Mar-09	13:51:01	01:00.0	58.7	76.5	42.3	66.6	89.2	82.4	66.162	65.537	47.139	43.615	42.889	42.256
16	5-Mar-09	13:52:01	01:00.0	53.9	71.7	34.5	66	86.8	80.3	64.873	62.568	39.303	34.685	34.506	34.506
17	5-Mar-09	13:53:01	01:00.0	36.2	54	34	40.6	85.6	53	40.553	39.693	34.842	34.154	34.068	33.998
18	5-Mar-09	13:54:01	01:00.0	37.3	55.1	34.7	40.9	89.6	55.6	40.685	39.803	36.928	35.225	34.998	34.693
19	5-Mar-09	13:55:01	01:00.0	38	55.7	35.8	43.1	94.8	70.7	41.896	40.56	37.451	36.217	36.068	35.795
20	5-Mar-09	13:56:01	01:00.0	36.8	54.6	35.1	39	88.8	54	38.912	38.568	36.685	35.326	35.162	35.076
21	5-Mar-09	13:57:01	01:00.0	38.9	56.6	35.7	44.3	84.1	58	43.779	42.607	37.826	36.326	36.107	35.67
22	5-Mar-09	13:58:01	01:00.0	44.3	62.1	38.5	49.9	90.1	65.7	49.701	48.779	43.092	39.842	39.232	38.506
23	5-Mar-09	13:59:01	01:00.0	46.1	63.8	35.2	58	91.3	75.8	57.162	53.498	40.701	36.232	35.889	35.24
24	5-Mar-09	14:00:01	01:00.0	42.7	60.5	40.2	47.9	87.6	69.5	46.896	45.631	42.06	40.748	40.373	40.248
25	5-Mar-09	14:01:01	01:00.0	51.4	69.2	41.3	57.2	89	70.6	56.928	55.787	49.803	42.42	41.998	41.264
26	5-Mar-09	14:02:01	01:00.0	44.9	62.7	40.6	53.2	91.9	78.8	51.834	47.998	43.435	41.123	40.631	40.623
27	5-Mar-09	14:03:01	01:00.0	51.8	69.6	45.5	61.5	86.5	75.9	60.6	57.529	49.795	46.881	46.326	45.545
28	5-Mar-09	14:04:01	01:00.0	62.7	80.4	46.1	70.6	90.3	84.9	70.607	69.553	57.951	48.225	47.42	46.498
29	5-Mar-09	14:05:01	01:00.0	40.3	58.1	36.4	46.1	94.6	57.9	45.725	44.592	38.873	36.568	36.357	36.357
30	5-Mar-09	14:06:01	01:00.0	38.5	56.3	35.3	42.8	93.8	60.6	41.959	41.256	37.912	35.771	35.389	35.303
31	5-Mar-09	14:07:01	00:00.5	37.7	34.7	37	37.5	77.2	58.6	999	999	37.498	37.006	37.006	37.006

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	17:45:00	60	46.6	2.74E+06	54.1	36.7	78.3	51.2	49	45.2	41	38.5	37.3
0	0	16Apr 09	17:46:00	60	56.3	2.56E+07	67.2	32.7	82.8	60.6	53.3	43	38.9	33.4	32.7
0	0	16Apr 09	17:47:00	60	37.5	3.37E+05	42.1	34.1	55.4	39.6	38.5	38	36.8	34.6	34.1
0	0	16Apr 09	17:48:00	60	49.7	5.60E+06	57.3	34.3	72.2	55.4	51.3	44.4	38.4	34.7	34.3
0	0	16Apr 09	17:49:00	60	51.5	8.48E+06	59.8	38.8	78.2	56.2	52.1	50.5	46.6	40.7	38.8
0	0	16Apr 09	17:50:00	60	43.7	1.41E+06	49.6	37.1	64.3	47.6	44.4	43.8	41.8	38.8	37.2
0	0	16Apr 09	17:51:00	60	39	4.77E+05	44.1	34.8	60.3	42.6	38.8	38.4	37.7	35.5	34.8
0	0	16Apr 09	17:52:00	60	55.6	2.18E+07	65.6	37.2	83.6	61	54.1	53.2	49.1	38.5	37.2
0	0	16Apr 09	17:53:00	60	44.9	1.85E+06	57	35.7	71.1	45.8	41.2	40.4	38.8	36.3	35.7
0	0	16Apr 09	17:54:00	60	54.6	1.73E+07	64	36.4	77.5	60.1	54.2	50.4	46.9	39.1	36.4
0	0	16Apr 09	17:55:00	60	52.1	9.73E+06	59.2	33.1	73.7	57.4	55.1	48.8	44.3	34.8	33.2
0	0	16Apr 09	17:56:00	60	55.8	2.28E+07	63.6	37.5	80.2	59.8	57.3	56.4	49.8	42.1	37.6
0	0	16Apr 09	17:57:00	60	41.8	9.08E+05	48.2	34.1	66.2	45.9	43	41.9	39.3	35	34.1
0	0	16Apr 09	17:58:00	60	59.5	5.35E+07	68.4	33.5	84.2	65.7	58.2	54.8	46.9	34.5	33.5
0	0	16Apr 09	17:59:00	60	58.7	4.45E+07	68.6	37.6	82.7	63.8	58.9	50.9	47.3	39.2	37.6
0	0	16Apr 09	18:00:00	60	44.1	1.54E+06	50.9	34.1	66.2	50.2	42.3	40.9	39.5	36.3	34.3
0	0	16Apr 09	18:01:00	60	44.7	1.77E+06	51	33.9	64.7	49.6	46.8	45.4	38.7	35.4	34
0	0	16Apr 09	18:02:00	60	48	3.79E+06	56.6	38.4	71.8	51.8	47.2	46.5	45.1	41.6	39.2
0	0	16Apr 09	18:03:00	60	45.7	2.23E+06	54.3	38.4	67.7	50.3	44.2	43.1	42.2	40.1	38.4
0	0	16Apr 09	18:04:00	60	48	3.79E+06	56.6	34.9	69.1	50.8	48.8	47.8	46.4	37.2	35.2
0	0	16Apr 09	18:05:00	60	38.9	4.66E+05	47.9	31.3	66.8	41.6	40.1	38.7	37.5	35	31.4
0	0	16Apr 09	18:06:00	60	38.9	4.66E+05	50.4	29.4	64.7	45.6	33.9	33.2	31.8	30.4	29.4
0	0	16Apr 09	18:07:00	60	58.7	4.45E+07	69.6	31.4	84.7	63.8	52.5	48.9	46.1	32.8	31.4
0	0	16Apr 09	18:08:00	60	42.6	1.09E+06	53.6	31.1	67.9	48.3	41	40.1	37.7	32.2	31.1
0	0	16Apr 09	18:09:00	60	45.5	2.13E+06	55.3	36.9	73.1	49.5	46.2	45	41.8	38	37.1
0	0	16Apr 09	18:10:00	60	39	4.77E+05	47.4	32.2	61	42	39.4	38.5	35.9	32.9	32.2
0	0	16Apr 09	18:11:00	60	68.9	4.66E+08	78.7	43.8	96.1	75.2	65.8	61.5	53.4	47.9	44.2
0	0	16Apr 09	18:12:00	60	56.1	2.44E+07	68.8	41.9	78.5	57.3	55	54.1	51.5	44.4	42.1
0	0	16Apr 09	18:13:00	60	65.9	2.33E+08	78.3	43.8	94.5	70.7	59.3	54.9	53.7	44.8	43.8
0	0	16Apr 09	18:14:00	60	62.6	1.09E+08	73.3	36.8	91.6	68.8	60.5	54.7	46.4	37.8	36.8
0	0	16Apr 09	18:15:00	60	40.3	6.43E+05	45.8	31	59.6	43.7	42.4	41.6	38.3	33.1	31.3
0	0	16Apr 09	18:16:00	60	45.7	2.23E+06	53.2	31.9	65.5	51.2	46.7	44.3	38.9	33.4	32.1
0	0	16Apr 09	18:17:00	60	44.7	1.77E+06	54.7	37.2	70	49.8	43.7	41.8	40.3	37.6	37.2
0	0	16Apr 09	18:18:00	60	59.5	5.35E+07	70.5	33.2	86	63.9	52.6	48.9	37.5	33.9	33.2
0	0	16Apr 09	18:19:00	60	36.6	2.74E+05	41.7	32.9	56.3	39.6	37.6	36.8	35.1	33.3	33
0	0	16Apr 09	18:20:00	60	66.1	2.44E+08	74.1	36.8	90	72.1	66.7	63.9	59.7	43.5	38.1
0	0	16Apr 09	18:21:00	60	35.1	1.94E+05	41.2	29.4	51.9	39.4	34.9	33.7	33.1	30.3	29.4
0	0	16Apr 09	18:22:00	60	42.5	1.07E+06	46.6	34.9	61	45.5	44.4	43.8	41.2	37	35.1
0	0	16Apr 09	18:23:00	60	35.8	2.28E+05	39.2	33.1	53.6	37.5	36.6	36.2	35.5	33.9	33.1
0	0	16Apr 09	18:24:00	60	43.8	1.44E+06	52.9	39.1	68.1	46.2	44.3	43.7	42.4	40.1	39.1
0	0	16Apr 09	18:25:00	60	50.5	6.73E+06	57.1	39.8	71.9	54.4	52.1	50.9	48.4	42.8	39.8
0	0	16Apr 09	18:26:00	60	43	1.20E+06	52.4	36.1	66.3	45.8	42.5	42	40.8	37.2	36.2
0	0	16Apr 09	18:27:00	60	57.6	3.45E+07	69.2	36.8	82.5	61.9	53.4	50.4	44	37.8	36.8
0	0	16Apr 09	18:28:00	60	60	6.00E+07	68.7	43.3	86.1	65.4	59.8	58.5	55.9	44.8	43.3
0	0	16Apr 09	18:29:00	60	49.7	5.60E+06	56.7	36.7	69.3	54.3	51.7	49.9	45.9	37.9	36.7

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	18:30:00	60	63.9	1.47E+08	75.4	40.8	91.3	68.3	62.1	58.3	52.8	41.9	41
0	0	16Apr 09	18:31:00	60	52.6	1.09E+07	63.7	34.4	80	57.3	47.8	47	41.1	36.9	34.4
0	0	16Apr 09	18:32:00	60	37.8	3.62E+05	43.2	31.3	64.5	40.9	38.9	38	37	32.3	31.3
0	0	16Apr 09	18:33:00	60	55	1.90E+07	66.3	40.8	80.6	59.1	54.1	51.4	47.8	42	41
0	0	16Apr 09	18:34:00	60	37.9	3.70E+05	43.3	32.8	57.1	41.1	39.1	38.4	36.6	33.9	32.8
0	0	16Apr 09	18:35:00	60	39.7	5.60E+05	42.8	34.1	70.5	42.2	40.6	40.2	39.6	34.9	34.1
0	0	16Apr 09	18:36:00	60	44	1.51E+06	47.4	39.3	62.3	46.3	44.7	44	43.5	40.9	39.3
0	0	16Apr 09	18:37:00	60	44	1.51E+06	48.1	37.2	63	46.7	45.7	45.2	43.6	38.7	37.4
0	0	16Apr 09	18:38:00	60	44	1.51E+06	49.7	34.2	63.4	48.2	46.1	44.5	41.3	36.6	34.5
0	0	16Apr 09	18:39:00	60	45	1.90E+06	51.1	34.1	64.4	49.5	46	44.4	42.5	36.4	34.3
0	0	16Apr 09	18:40:00	60	59.4	5.23E+07	68.4	42.7	86.2	64.9	58.9	56.6	52.4	44.9	43.3
0	0	16Apr 09	18:41:00	60	52.9	1.17E+07	59.8	45.7	72.5	55.7	54.4	53.7	51.5	47.7	45.8
0	0	16Apr 09	18:42:00	60	50.4	6.58E+06	58.1	39.5	68.8	55.2	50.8	50.2	46.9	40.8	39.5
0	0	16Apr 09	18:43:00	60	44.4	1.65E+06	49.3	38.7	63.7	46.9	45.6	44.8	43.8	39.8	38.9
0	0	16Apr 09	18:44:00	60	64.7	1.77E+08	75.3	37.9	92.8	69.9	60.8	58.2	49.9	40.5	38.2
0	0	16Apr 09	18:45:00	60	53.3	1.28E+07	68.8	37	73.4	53.3	41.9	41.3	40.4	37.9	37
0	0	16Apr 09	18:46:00	60	45.5	2.13E+06	52.9	38.2	63.9	50.4	45.5	44.6	42.7	39.3	38.2
0	0	16Apr 09	18:47:00	60	46.9	2.94E+06	54.3	32.7	70.3	51.4	48.6	47.4	42.5	33.4	32.7
0	0	16Apr 09	18:48:00	60	59.3	5.11E+07	68.8	38.4	85.9	65	57.8	54.7	50	41.4	39.1
0	0	16Apr 09	18:49:00	60	53.3	1.28E+07	62.1	37.7	73.5	59.4	52.2	50.4	46.5	38.7	37.7
0	0	16Apr 09	18:50:00	60	44.7	1.77E+06	52.5	38.8	69.3	48.1	44	43.3	42.4	40.2	39
0	0	16Apr 09	18:51:00	60	44.2	1.58E+06	46.3	42.5	60.5	45.4	44.8	44.6	44.2	42.7	42.5
0	0	16Apr 09	18:52:00	60	47.6	3.45E+06	52.8	44.3	68.4	50.4	47.7	47.4	46.6	45.2	44.3
0	0	16Apr 09	18:53:00	60	72.6	1.09E+09	83.7	44.3	103	76.8	72.2	68	58.9	47.1	44.6
0	0	16Apr 09	18:54:00	60	64	1.51E+08	73.2	46.7	92.9	68.9	64.1	61.4	57.7	49.2	47
0	0	16Apr 09	18:55:00	60	58.1	3.87E+07	62.1	56.5	77.5	59.8	58.7	58.3	57.7	56.5	56.5
0	0	16Apr 09	18:56:00	60	62.3	1.02E+08	71.3	56.8	91.5	66.2	62	60.6	59.3	58.1	56.8
0	0	16Apr 09	18:57:00	60	61.9	9.29E+07	70.3	47.8	88.8	66.9	62.9	62.2	57.5	50.4	48.1
0	0	16Apr 09	18:58:00	60	52.2	9.96E+06	60.6	41.9	73.5	56.9	51.4	50.2	47.7	42.6	41.9
0	0	16Apr 09	18:59:00	60	52.1	9.73E+06	59.2	43.9	83.5	56	53.5	52.5	49.6	45.7	44.2
0	0	16Apr 09	19:00:00	60	51.1	7.73E+06	60.1	36.3	77.9	55.5	52.4	50.3	47.4	37.7	36.3
0	0	16Apr 09	19:01:00	60	50.4	6.58E+06	56.7	35.4	75.9	54.8	52.8	51.7	44.9	39.6	36.2
0	0	16Apr 09	19:02:00	60	55.9	2.33E+07	64.3	39.6	79.5	62.3	53.9	52.4	48.5	42.3	40.1
0	0	16Apr 09	19:03:00	60	52.2	9.96E+06	58.1	42.1	81.5	55	53.5	52.8	51.4	45.5	42.6
0	0	16Apr 09	19:04:00	60	54.6	1.73E+07	63.1	46.7	85.3	58.6	55	53.7	52.3	47.7	46.7
0	0	16Apr 09	19:05:00	60	51.1	7.73E+06	57.3	43.3	76.9	53.8	52.5	52.1	49.7	45.2	43.4
0	0	16Apr 09	19:06:00	60	48.4	4.15E+06	54.6	39.1	75	52.4	49.8	48.7	45.9	41.2	39.3
0	0	16Apr 09	19:07:00	60	58.6	4.35E+07	68.6	42.4	86.6	64.5	57.6	55.3	49.8	44.7	42.5
0	0	16Apr 09	19:08:00	60	59.9	5.86E+07	67.8	44.6	84.6	64.6	60.7	59.5	56.7	49.6	45.8
0	0	16Apr 09	19:09:00	60	52.7	1.12E+07	60.7	43.8	73.8	54.7	53.4	52.8	50.9	46.3	44.2
0	0	16Apr 09	19:10:00	60	57.2	3.15E+07	62.7	51.9	79.1	60.4	58.7	57.8	55.9	52.7	52.1
0	0	16Apr 09	19:11:00	60	67.2	3.15E+08	75.9	53.4	94.5	71.9	67.4	65.1	62	55.4	53.4
0	0	16Apr 09	19:12:00	60	58.5	4.25E+07	65.3	53.3	79.6	61.4	59.6	58.8	57.5	54.3	53.3
0	0	16Apr 09	19:13:00	60	80.2	6.28E+09	92.3	47.3	112.6	86.1	77.3	73.1	66.5	51.8	47.5
0	0	16Apr 09	19:14:00	60	51.4	8.28E+06	57.6	45.8	75.9	54.7	52.5	51.7	50.2	47.1	46.1

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	19:15:00	60	53.1	1.23E+07	59.6	42.1	82	56.6	55	53.9	51.4	43.2	42.1
0	0	16Apr 09	19:16:00	60	57.7	3.53E+07	66.6	45.1	84	62.2	57.3	56.1	54.1	47.9	45.5
0	0	16Apr 09	19:17:00	60	52.4	1.04E+07	58.8	44.7	70.3	55.7	54.4	53.6	50.9	45.5	44.7
0	0	16Apr 09	19:18:00	60	43.2	1.25E+06	50.1	38.9	70.3	45.4	44	43.3	42.1	40.4	39.1
0	0	16Apr 09	19:19:00	60	53.9	1.47E+07	65.6	39.1	83.5	60.2	49.7	48.2	46.7	41.8	39.8
0	0	16Apr 09	19:20:00	60	74.5	1.69E+09	83.6	53.8	99.9	79.6	75.4	71.5	66.2	56.3	54.2
0	0	16Apr 09	19:21:00	60	48.6	4.35E+06	57.7	37.1	72.5	54.9	44.9	43.5	40.7	39.1	37.6
0	0	16Apr 09	19:22:00	60	41.2	7.91E+05	46.4	35.7	64.9	43.3	42	41.7	41	36.9	35.8
0	0	16Apr 09	19:23:00	60	49	4.77E+06	56.5	40.7	68	52.6	50.5	49	44.1	41.3	40.7
0	0	16Apr 09	19:24:00	60	54.2	1.58E+07	61.7	36.5	75.2	60.4	54.1	51.8	48.8	37.6	36.5
0	0	16Apr 09	19:25:00	60	39	4.77E+05	45.7	34.5	61.6	41.4	39.5	39.2	38.2	35.4	34.5
0	0	16Apr 09	19:26:00	60	35.5	2.13E+05	39.7	30.4	54.4	37.3	36.5	36.2	35.5	31.9	30.4
0	0	16Apr 09	19:27:00	60	40.7	7.05E+05	48.4	29.8	64.6	45.8	41.5	37.9	35.1	30.9	29.8
0	0	16Apr 09	19:28:00	60	40.2	6.28E+05	49.9	33.8	73.4	43.7	40.2	38.6	37	34.6	34
0	0	16Apr 09	19:29:00	60	36.7	2.81E+05	48.7	31.5	72	38.6	36.3	35.4	34.2	32.2	31.5
0	0	16Apr 09	19:30:00	60	36	2.39E+05	45.3	30.4	70.1	38.2	36.5	36.1	34.5	32.2	30.4
0	0	16Apr 09	19:31:00	60	31.3	8.09E+04	38	26	69.9	34.1	32.2	31.5	30.4	27.5	26.1
0	0	16Apr 09	19:32:00	60	59.1	4.88E+07	70	29.9	87.5	63.5	61.4	58.5	33.4	31.2	30
0	0	16Apr 09	19:33:00	60	70.2	6.28E+08	81.8	37.2	100.7	74.2	64.2	62.3	59.3	42.3	37.7
0	0	16Apr 09	19:34:00	60	42.4	1.04E+06	51.1	34.8	76.5	45.9	42.5	41.7	40.4	37	35
0	0	16Apr 09	19:35:00	60	38.5	4.25E+05	40.9	36.1	66.1	39.9	39.4	39.2	38.5	37.1	36.1
0	0	16Apr 09	19:36:00	60	44	1.51E+06	49.8	37	76.9	46.7	45.4	44.7	43.4	38.2	37.1
0	0	16Apr 09	19:37:00	60	76.2	2.50E+09	88.5	47.5	107.7	81.7	74.4	65	55.9	49.6	47.6
0	0	16Apr 09	19:38:00	60	62.1	9.73E+07	75.9	38.5	93	66.4	58.4	53.2	48.2	39.5	38.5
0	0	16Apr 09	19:39:00	60	40.5	6.73E+05	44.3	37.6	59.1	41.8	40.9	40.7	40.3	38.8	37.9
0	0	16Apr 09	19:40:00	60	41.4	8.28E+05	44.5	38.3	63	43.2	42	41.7	41.1	39.3	38.3
0	0	16Apr 09	19:41:00	60	41	7.55E+05	44.3	36	58.8	43.7	42.8	42.4	39.7	37.2	36.1
0	0	16Apr 09	19:42:00	60	42.3	1.02E+06	47.8	38.4	59.8	45.1	42.8	42.2	41.4	39.3	38.4
0	0	16Apr 09	19:43:00	60	39.2	4.99E+05	42.5	32.6	58.8	41.6	40.7	40.4	39.6	33.8	32.7
0	0	16Apr 09	19:44:00	60	34.4	1.65E+05	41	31.8	61.6	35.8	34.8	34.5	33.9	32.4	32
0	0	16Apr 09	19:45:00	60	36.6	2.74E+05	48.8	32.4	72.1	37.9	35.6	35	34.4	33.1	32.4
0	0	16Apr 09	19:46:00	60	38.7	4.45E+05	43.5	35.7	66.2	40.7	39	38.8	38.4	36.5	35.7
0	0	16Apr 09	19:47:00	60	41.2	7.91E+05	45.4	35	56.3	44.8	44	42.6	39.1	35.6	35.1
0	0	16Apr 09	19:48:00	60	42.9	1.17E+06	46.2	38.9	57.6	45.1	43.7	43.3	42.6	40.7	39
0	0	16Apr 09	19:49:00	60	60.3	6.43E+07	71.6	43.6	90.6	64.4	59.2	58.5	50	44.7	43.6
0	0	16Apr 09	19:50:00	60	41.2	7.91E+05	53.7	37.2	57.2	42.2	40	39.5	38.8	37.4	37.2
0	0	16Apr 09	19:51:00	60	42.7	1.12E+06	47.1	37.2	59.1	44.9	43.9	43.4	42.2	38.1	37.2
0	0	16Apr 09	19:52:00	60	44.1	1.54E+06	46.9	40.9	59.5	45.7	44.7	44.5	43.9	42.1	40.9
0	0	16Apr 09	19:53:00	60	45.4	2.08E+06	49.1	39.9	60.3	47.2	46.4	46.1	45.4	41.4	40
0	0	16Apr 09	19:54:00	60	40.4	6.58E+05	44.5	37.6	56.7	41.9	41.1	40.7	39.9	38.3	37.6
0	0	16Apr 09	19:55:00	60	43	1.20E+06	46.5	40.9	60.4	44.6	43.6	43.3	42.6	41.3	41
0	0	16Apr 09	19:56:00	60	46.3	2.56E+06	50	42.5	62.5	48.7	47.5	46.8	45.6	43.2	42.5
0	0	16Apr 09	19:57:00	60	45.5	2.13E+06	47.9	42.6	60.8	47	46.3	46	45.3	43.4	42.6
0	0	16Apr 09	19:58:00	60	42.3	1.02E+06	50.3	38.3	74.7	44	43	42.6	41.5	39	38.3
0	0	16Apr 09	19:59:00	60	44.4	1.65E+06	49.3	39.5	72.2	46	45.3	44.9	44.3	40.7	39.5

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)	
0	0	16Apr 09	20:00:00	60	44	1.51E+06		48	39.5	64.7	46.6	45	44.3	43.2	41.1	39.6
0	0	16Apr 09	20:01:00	60	46.7	2.81E+06	50.1	39.6	62.9	48.8	48.2	47.8	47.2	40.9	39.6	
0	0	16Apr 09	20:02:00	60	48.2	3.96E+06	54.3	41.1	66.7	51.5	48.8	48.1	47.1	42.1	41.1	
0	0	16Apr 09	20:03:00	60	49.3	5.11E+06	54.6	41.7	67.1	52.6	50.8	49.8	48	42.8	41.7	
0	0	16Apr 09	20:04:00	60	45.5	2.13E+06	49.5	41.7	62.3	46.9	46.3	46	45.4	43.2	42.1	
0	0	16Apr 09	20:05:00	60	47.4	3.30E+06	54	41	68.2	49	48.2	47.8	46.8	42.2	41	
0	0	16Apr 09	20:06:00	60	45.3	2.03E+06	53	38.6	65.1	50.1	43.6	42	40.7	39.2	38.6	
0	0	16Apr 09	20:07:00	60	41.9	9.29E+05	44.1	39.6	61.9	43.3	42.7	42.4	41.9	40.1	39.6	
0	0	16Apr 09	20:08:00	60	45.4	2.08E+06	49.3	41.7	61.9	47.8	45.9	45.4	44.7	43	41.7	
0	0	16Apr 09	20:09:00	60	45.3	2.03E+06	50.9	41.3	62.7	47.8	46.1	45.4	44.2	42.4	41.3	
0	0	16Apr 09	20:10:00	60	41.7	8.87E+05	43.9	38.1	56.4	43.5	42.8	42.3	41.4	39	38.1	
0	0	16Apr 09	20:11:00	60	38.1	3.87E+05	41.4	35.8	54.7	39.9	38.9	38.4	37.6	36.3	35.8	
0	0	16Apr 09	20:12:00	60	46.2	2.50E+06	54.8	38.7	66.1	48.4	46.8	46.3	45.3	39.6	38.7	
0	0	16Apr 09	20:13:00	60	44.5	1.69E+06	51.1	37.1	63.7	48.3	45.8	44.5	42.1	38.4	37.2	
0	0	16Apr 09	20:14:00	60	44	1.51E+06	48.3	41.2	59.5	45.5	44.6	44.3	43.7	42	41.2	
0	0	16Apr 09	20:15:00	60	48.2	3.96E+06	50.3	44.6	61.9	49.6	48.7	48.5	47.9	46.3	44.7	
0	0	16Apr 09	20:16:00	60	46.2	2.50E+06	52.9	40.8	64.2	49.7	46	45.6	44.7	42.3	40.9	
0	0	16Apr 09	20:17:00	60	40.2	6.28E+05	43.2	37.1	55.5	42.5	41.2	40.6	39.7	38.1	37.1	
0	0	16Apr 09	20:18:00	60	42.3	1.02E+06	48.1	35.2	60.2	46.3	43.2	42.4	40.6	36.8	35.3	
0	0	16Apr 09	20:19:00	60	36.5	2.68E+05	39.4	34.2	59.5	38.3	37.3	36.9	36.2	34.5	34.2	
0	0	16Apr 09	20:20:00	60	44.7	1.77E+06	50.4	34.6	62.8	47.6	45.6	44.8	44.2	37.6	34.7	
0	0	16Apr 09	20:21:00	60	41.7	8.87E+05	45.1	38.8	57.9	43.5	42.6	42.3	41.6	39.2	38.8	
0	0	16Apr 09	20:22:00	60	43.1	1.23E+06	44.9	40.8	59.3	44.5	43.8	43.6	43.1	41.6	40.8	
0	0	16Apr 09	20:23:00	60	43.2	1.25E+06	48	36.7	61	46	44.9	44.3	43	37.5	36.7	
0	0	16Apr 09	20:24:00	60	46.8	2.87E+06	48.9	42.8	61.7	48.3	47.6	47.3	46.8	44.3	43	
0	0	16Apr 09	20:25:00	60	48	3.79E+06	53.3	45.4	67.6	49.8	48	47.8	47.4	46.1	45.4	
0	0	16Apr 09	20:26:00	60	45.7	2.23E+06	48	43.3	62.7	46.9	46.5	46.3	45.7	44.2	43.3	
0	0	16Apr 09	20:27:00	60	45.9	2.33E+06	50.3	41.4	62.7	48.9	47.1	46	44.9	41.9	41.4	
0	0	16Apr 09	20:28:00	60	49.5	5.35E+06	54	43	65.4	52.9	51.8	50.7	47.6	44.1	43.1	
0	0	16Apr 09	20:29:00	60	42.2	9.96E+05	46.2	36.3	58	44.7	43.6	42.9	41.7	37.9	36.3	
0	0	16Apr 09	20:30:00	60	43.5	1.34E+06	46.2	40.7	60.2	45.3	44.3	43.8	43.2	41.9	40.8	
0	0	16Apr 09	20:31:00	60	42.9	1.17E+06	45.3	41.2	58.9	44.5	43.7	43.3	42.7	41.4	41.2	
0	0	16Apr 09	20:32:00	60	49.6	5.47E+06	56.4	44	68.4	54.1	49.6	48.7	47.2	45.4	44.3	
0	0	16Apr 09	20:33:00	60	47.4	3.30E+06	50.8	43.2	62.4	49.7	48.7	48.2	47	44.2	43.2	
0	0	16Apr 09	20:34:00	60	46.3	2.56E+06	49.2	43.8	61.5	47.7	46.9	46.7	46.3	44.6	43.8	
0	0	16Apr 09	20:35:00	60	46.3	2.56E+06	50	42.7	61.5	48.9	47.6	46.7	45.4	43.3	42.7	
0	0	16Apr 09	20:36:00	60	46.5	2.68E+06	54.7	39.6	68	49.9	47.4	46.7	43.9	40.7	39.6	
0	0	16Apr 09	20:37:00	60	42.9	1.17E+06	46.8	36.5	59.9	45.7	44.1	43.3	42.5	37.8	36.5	
0	0	16Apr 09	20:38:00	60	38.4	4.15E+05	43.9	34.2	58	40.9	39.7	38.7	37.2	35.2	34.2	
0	0	16Apr 09	20:39:00	60	40.2	6.28E+05	45.5	34.5	57.4	42.5	40.9	40.6	39.8	36.3	34.6	
0	0	16Apr 09	20:40:00	60	41.3	8.09E+05	43.3	39.6	56	42.7	42	41.7	41	40	39.6	
0	0	16Apr 09	20:41:00	60	41.9	9.29E+05	44.3	39.4	56.3	43.4	42.6	42.2	41.7	40.2	39.4	
0	0	16Apr 09	20:42:00	60	40.5	6.73E+05	44	38.3	56.4	42	40.9	40.7	40.3	39	38.3	
0	0	16Apr 09	20:43:00	60	38.5	4.25E+05	43.1	36	54.3	40.5	39.3	38.8	37.9	36.4	36	
0	0	16Apr 09	20:44:00	60	35.9	2.33E+05	37.6	34.4	50.3	37.2	36.6	36.3	35.7	34.4	34.4	

Meas

Site	Number	Date	Time	Duration	Leq	Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	20:45:00	60	39.2 4.99E+05	41.3	36.3	53.7	40.6	39.9	39.7	39.3	37.4	36.3
0	0	16Apr 09	20:46:00	60	39.9 5.86E+05	42	38	54.3	40.9	40.6	40.4	40	38.7	38.1
0	0	16Apr 09	20:47:00	60	39.1 4.88E+05	41.1	36.1	54.1	40.5	39.8	39.6	39.2	37.2	36.1
0	0	16Apr 09	20:48:00	60	38.1 3.87E+05	40.3	35.8	52.3	39.2	38.7	38.5	38.1	37.1	35.8
0	0	16Apr 09	20:49:00	60	41 7.55E+05	43.4	37	55.8	42.7	42.1	41.8	41.1	37.8	37.1
0	0	16Apr 09	20:50:00	60	37.7 3.53E+05	42	34.9	54.4	39.7	38.4	37.9	37.1	35.5	35
0	0	16Apr 09	20:51:00	60	40 6.00E+05	43.6	36.3	56.9	42.9	41.3	40.6	39.3	36.5	36.3
0	0	16Apr 09	20:52:00	60	41.6 8.67E+05	44	39	56	43.5	42.6	42.3	41.2	39.4	39
0	0	16Apr 09	20:53:00	60	44.2 1.58E+06	46.5	41.4	58.2	45.9	45.3	45	44	42.2	41.4
0	0	16Apr 09	20:54:00	60	43 1.20E+06	45.1	41.2	57.5	44.4	43.5	43	42.7	41.8	41.2
0	0	16Apr 09	20:55:00	60	42.2 9.96E+05	46	39.6	57.7	43.9	43.3	42.9	41.8	40.2	39.6
0	0	16Apr 09	20:56:00	60	40.9 7.38E+05	46.7	34.2	59	43.9	42.6	41.7	38.7	35.1	34.2
0	0	16Apr 09	20:57:00	60	37.4 3.30E+05	40.6	35	53.2	38.8	38.1	37.8	37.1	36	35.1
0	0	16Apr 09	20:58:00	60	39.1 4.88E+05	43	36.1	54.1	41	40.3	39.9	38.3	36.5	36.1
0	0	16Apr 09	20:59:00	60	40.1 6.14E+05	43.1	36.5	56.2	41.8	41	40.7	40.1	37.4	36.5
0	0	16Apr 09	21:00:00	60	33.2 1.25E+05	37.1	29.9	52.2	35.5	34.3	33.6	32.4	30.7	30
0	0	16Apr 09	21:01:00	60	39.7 5.60E+05	44.2	30.4	56.6	42.7	41.9	41.2	37.9	33.8	30.9
0	0	16Apr 09	21:02:00	60	40.6 6.89E+05	44.2	36.1	58	43.2	41.7	40.7	39.6	37.3	36.2
0	0	16Apr 09	21:03:00	60	40.9 7.38E+05	43.8	37.6	57.4	43	41.8	41.4	40.5	38.2	37.6
0	0	16Apr 09	21:04:00	60	39.8 5.73E+05	43.7	36.2	55.9	42	40.8	40.4	38.9	37.1	36.2
0	0	16Apr 09	21:05:00	60	42.4 1.04E+06	45.1	39.5	61.1	44.1	43.5	43.2	42.4	39.8	39.5
0	0	16Apr 09	21:06:00	60	41 7.55E+05	44	37	55.6	42.7	41.9	41.7	41.2	37.5	37
0	0	16Apr 09	21:07:00	60	40.4 6.58E+05	43.7	37.2	56.5	42.9	41.5	40.9	39.4	37.6	37.2
0	0	16Apr 09	21:08:00	60	38.8 4.55E+05	41.6	35.9	54	40.3	39.5	39.2	38.6	36.8	36.1
0	0	16Apr 09	21:09:00	60	39.2 4.99E+05	44.5	34.5	56.9	42.4	40	39.4	37.8	35.3	34.5
0	0	16Apr 09	21:10:00	60	39.2 4.99E+05	42.8	36.6	55	41	40	39.4	38.5	37.1	36.6
0	0	16Apr 09	21:11:00	60	38.4 4.15E+05	40.7	35.6	53.9	40.1	39.1	38.8	38.1	36.7	35.6
0	0	16Apr 09	21:12:00	60	40.8 7.21E+05	43.1	36.6	57	42.1	41.6	41.4	40.9	38.3	36.6
0	0	16Apr 09	21:13:00	60	36.7 2.81E+05	40.5	34.6	55.6	37.9	37	36.8	36.4	35.3	34.9
0	0	16Apr 09	21:14:00	60	35.6 2.18E+05	38.3	33	51.1	37.3	36.2	35.9	35.4	33.5	33
0	0	16Apr 09	21:15:00	60	35.4 2.08E+05	37.5	33.2	52.6	36.9	36.4	36.1	34.8	33.6	33.2
0	0	16Apr 09	21:16:00	60	38.3 4.06E+05	40.1	36.3	54.3	39.3	38.8	38.6	38.3	37.1	36.3
0	0	16Apr 09	21:17:00	60	39.7 5.60E+05	41.3	37.5	54.8	40.8	40.3	40.1	39.7	38.3	37.5
0	0	16Apr 09	21:18:00	60	39.5 5.35E+05	42.5	38.1	55.5	41.1	39.8	39.4	38.8	38.2	38.1
0	0	16Apr 09	21:19:00	60	48.5 4.25E+06	52.2	41.8	67.5	50.5	49.4	49	48.3	45.2	43.1
0	0	16Apr 09	21:20:00	60	42 9.51E+05	50.2	33.6	62.3	45.7	42.7	41.5	39.7	35.4	34.1
0	0	16Apr 09	21:21:00	60	34.7 1.77E+05	40.9	31.7	54	36.7	34.6	34.2	33.7	32.4	31.8
0	0	16Apr 09	21:22:00	60	36.1 2.44E+05	39.4	33.7	52.7	37.8	36.9	36.4	35.6	34.2	33.7
0	0	16Apr 09	21:23:00	60	37.7 3.53E+05	40.4	34.8	54.7	39.6	38.6	38.1	37.2	35.8	35
0	0	16Apr 09	21:24:00	60	33.6 1.37E+05	36.7	30.1	51.8	35.9	34.8	34.4	32.7	31	30.1
0	0	16Apr 09	21:25:00	60	34.8 1.81E+05	39.1	30.4	53.7	37.9	35.5	34.9	34.1	31.3	30.4
0	0	16Apr 09	21:26:00	60	42.8 1.14E+06	46.9	33.6	60.2	45.8	44.8	44.2	43	35.4	33.9
0	0	16Apr 09	21:27:00	60	43.9 1.47E+06	51.6	36.6	66.5	46.5	44.5	43.8	42.3	37.8	37
0	0	16Apr 09	21:28:00	60	52.6 1.09E+07	57.2	46.6	72.6	54.5	53.5	53.1	52.2	49.8	46.6
0	0	16Apr 09	21:29:00	60	44.3 1.61E+06	49.9	36.7	62.2	47.3	46.3	45.5	43	38.4	37

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	21:30:00	60	35.6	2.18E+05	38.1	33.2	52.6	37.1	36.5	36.2	35.2	33.6	33.2
0	0	16Apr 09	21:31:00	60	33.9	1.47E+05	36.2	31.9	51.2	35	34.4	34	33.7	32.8	32.1
0	0	16Apr 09	21:32:00	60	33.5	1.34E+05	36.7	31.1	50.7	34.9	34	33.8	33.3	32	31.1
0	0	16Apr 09	21:33:00	60	34.6	1.73E+05	37.4	31.2	51.7	36.3	35.4	35	34.3	32.5	31.3
0	0	16Apr 09	21:34:00	60	36.9	2.94E+05	41.7	31.6	54.9	39.6	38.1	37.5	36	32.7	31.6
0	0	16Apr 09	21:35:00	60	33.7	1.41E+05	37.7	31.2	52.4	35.1	33.9	33.7	33.2	32.1	31.2
0	0	16Apr 09	21:36:00	60	36.4	2.62E+05	40.1	32.6	53.4	38.3	37	36.7	36	34.5	32.8
0	0	16Apr 09	21:37:00	60	36	2.39E+05	39.2	33.7	52.7	37.8	37.1	36.6	35.6	34.2	33.7
0	0	16Apr 09	21:38:00	60	33.7	1.41E+05	39.6	28.2	64.4	35.5	34.4	34.1	33.4	30.1	28.3
0	0	16Apr 09	21:39:00	60	34.4	1.65E+05	43.9	29.7	71.6	35.9	34.8	34.1	32.9	30.9	30.1
0	0	16Apr 09	21:40:00	60	33.6	1.37E+05	36.8	30.9	50.1	35.4	34.3	33.8	32.9	31.7	31.1
0	0	16Apr 09	21:41:00	60	32.7	1.12E+05	35.4	30.4	52.8	34	33.4	33.1	32.6	31.2	30.4
0	0	16Apr 09	21:42:00	60	33.9	1.47E+05	36.4	31.8	50.3	35.1	34.5	34.2	33.7	32.4	32
0	0	16Apr 09	21:43:00	60	33.1	1.23E+05	37	29.9	50.6	35.1	33.8	33.5	33	30.4	30
0	0	16Apr 09	21:44:00	60	33.5	1.34E+05	36	31.2	50.1	35.2	33.9	33.7	33.2	31.8	31.2
0	0	16Apr 09	21:45:00	60	32.6	1.09E+05	35.8	29.9	49.9	34.8	33.2	32.8	32.1	30.8	30.1
0	0	16Apr 09	21:46:00	60	39.2	4.99E+05	44.5	34	56.2	41.7	40.2	39.8	38.7	34.7	34.1
0	0	16Apr 09	21:47:00	60	38.4	4.15E+05	43.8	33.5	55.4	40.8	39.3	38.9	38	34.4	33.5
0	0	16Apr 09	21:48:00	60	36.8	2.87E+05	39.8	34	53.6	38.7	37.6	36.9	36.5	34.7	34.1
0	0	16Apr 09	21:49:00	60	35.8	2.28E+05	36.9	34.4	51.4	36.7	36.3	36.1	35.7	35	34.4
0	0	16Apr 09	21:50:00	60	35	1.90E+05	38.2	33.2	51.9	36.7	35.6	35.2	34.7	33.6	33.2
0	0	16Apr 09	21:51:00	60	34.7	1.77E+05	38	30.7	60.4	36.6	35.4	35	34.5	33	30.8
0	0	16Apr 09	21:52:00	60	33.4	1.31E+05	44.7	29.3	67.8	34.6	33.3	32.8	31.8	30.2	29.3
0	0	16Apr 09	21:53:00	60	42.2	9.96E+05	53.3	32.9	69.3	45	41	39.2	36.9	33.9	33.1
0	0	16Apr 09	21:54:00	60	35.6	2.18E+05	40.8	31.7	53.3	38.6	36.5	34.9	34.3	33	32
0	0	16Apr 09	21:55:00	60	33.1	1.23E+05	34.8	31.4	49.6	34	33.6	33.4	33	32.1	31.4
0	0	16Apr 09	21:56:00	60	33.5	1.34E+05	47.7	29.3	76.1	34	33	32.6	31.9	30.2	29.4
0	0	16Apr 09	21:57:00	60	35.9	2.33E+05	42.3	32.4	52.2	37.7	36.6	36.3	35.4	33.5	32.4
0	0	16Apr 09	21:58:00	60	36.3	2.56E+05	39.3	32.7	52.6	38.3	37.5	37.3	35.7	33.6	32.7
0	0	16Apr 09	21:59:00	60	36.7	2.81E+05	39.3	34.4	53.3	38	37.4	37	36.5	35.2	34.4
0	0	16Apr 09	22:00:00	60	37.2	3.15E+05	40.4	34	53.7	39.5	38.6	38.2	36.4	34.4	34
0	0	16Apr 09	22:01:00	60	36	2.39E+05	39.2	31.9	52.9	38.3	36.9	36.5	35.7	33	32.1
0	0	16Apr 09	22:02:00	60	31.5	8.48E+04	33.7	29.7	49.4	32.7	32.1	31.9	31.5	30.3	29.7
0	0	16Apr 09	22:03:00	60	37.6	3.45E+05	42	31	58.8	40.7	39	38	36.3	34.1	31.3
0	0	16Apr 09	22:04:00	60	41.9	9.29E+05	48.5	35.9	75.6	44.9	43.4	42.7	40.5	37.1	36.1
0	0	16Apr 09	22:05:00	60	45.5	2.13E+06	52.1	33	62.7	49.8	46.7	46	44.1	35.4	33.2
0	0	16Apr 09	22:06:00	60	38.9	4.66E+05	46.1	32.8	70.8	41.1	39.9	39.5	38.7	35.1	33
0	0	16Apr 09	22:07:00	60	40.3	6.43E+05	47.6	33.8	74.9	43.4	41.9	41.1	38.6	35.1	34
0	0	16Apr 09	22:08:00	60	37	3.01E+05	38.9	34.1	63.4	38.4	37.8	37.5	36.9	35.1	34.1
0	0	16Apr 09	22:09:00	60	37.6	3.45E+05	44	33.8	68.3	39.8	38.7	38.2	37.3	34.4	33.8
0	0	16Apr 09	22:10:00	60	33	1.20E+05	35.6	30.4	47.9	34.6	33.7	33.4	32.9	30.7	30.4
0	0	16Apr 09	22:11:00	60	32.4	1.04E+05	35	29.8	50.5	33.9	33.3	33	32.4	31	30
0	0	16Apr 09	22:12:00	60	31.4	8.28E+04	34.3	28.1	47.4	33	32.3	32	31.4	29.1	28.1
0	0	16Apr 09	22:13:00	60	40.6	6.89E+05	48.6	29.4	62.2	44.4	40.7	38.9	37.6	31	29.4
0	0	16Apr 09	22:14:00	60	37.3	3.22E+05	43.1	32	54.4	40.5	39	37.4	35.7	33.3	32.1

Meas

Site	Number	Date	Time	Duration	Leq	Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	22:15:00	60	34.7 1.77E+05	39.5	30.6	52.4	38.3	35.2	34	33.2	31.4	30.8
0	0	16Apr 09	22:16:00	60	31.2 7.91E+04	38.3	27.6	50.8	34	31.6	30.7	29.5	28.2	27.6
0	0	16Apr 09	22:17:00	60	33.1 1.23E+05	41.4	27.6	56.4	37	33.8	32	30	28.3	27.6
0	0	16Apr 09	22:18:00	60	36 2.39E+05	40.8	30.3	52.9	38.7	37.3	36.7	35.5	31.1	30.3
0	0	16Apr 09	22:19:00	60	36.6 2.74E+05	42	32.4	53.4	40	37.5	36.5	35.1	33.2	32.4
0	0	16Apr 09	22:20:00	60	36.5 2.68E+05	39.3	32.6	52.7	38.7	37.4	36.8	35.9	34.1	32.6
0	0	16Apr 09	22:21:00	60	32.9 1.17E+05	38.5	27.5	51.8	36.6	34.2	32.7	31.1	28.7	27.5
0	0	16Apr 09	22:22:00	60	33.6 1.37E+05	40.1	28.7	52.9	37.5	33.3	32.8	31.9	30.4	29.3
0	0	16Apr 09	22:23:00	60	35.5 2.13E+05	40.2	30.4	52.9	38.8	36.1	35.6	34.7	31.7	30.4
0	0	16Apr 09	22:24:00	60	29.3 5.11E+04	32.2	26	46.8	31.5	30.6	30.1	29.2	26.4	26
0	0	16Apr 09	22:25:00	60	30.9 7.38E+04	35.9	26	49.3	34.4	31.4	30.2	29.4	27.4	26.2
0	0	16Apr 09	22:26:00	60	38.8 4.55E+05	44.6	30.5	56.4	41.7	40	38.9	38	33.3	30.5
0	0	16Apr 09	22:27:00	60	38.1 3.87E+05	43.6	31.1	56.8	41.7	40.3	38.9	35.7	32.2	31.1
0	0	16Apr 09	22:28:00	60	35.6 2.18E+05	37.4	32.1	49.7	36.9	36.1	35.9	35.5	34	32.2
0	0	16Apr 09	22:29:00	60	34.6 1.73E+05	37.7	32	50.8	36.4	35.4	34.9	34.2	32.7	32
0	0	16Apr 09	22:30:00	60	32.7 1.12E+05	38	29.9	71.1	34.2	33.2	32.8	32.3	30.7	29.9
0	0	16Apr 09	22:31:00	60	31.3 8.09E+04	35.7	26.2	48.6	33.6	31.9	31.6	31.1	27.8	26.3
0	0	16Apr 09	22:32:00	60	33.1 1.23E+05	35.7	28.1	48.8	34.9	34	33.7	33.2	29.3	28.1
0	0	16Apr 09	22:33:00	60	34 1.51E+05	37.1	31.5	49.9	35.5	34.6	34.3	33.7	32.1	31.5
0	0	16Apr 09	22:34:00	60	35.2 1.99E+05	38.1	30.7	50.3	37.4	36.5	36	35.1	31.7	30.7
0	0	16Apr 09	22:35:00	60	34.4 1.65E+05	37.9	30.9	50.3	36.5	35.3	34.8	34.1	31.4	30.9
0	0	16Apr 09	22:36:00	60	33.8 1.44E+05	36	31.6	49.5	35.4	34.4	34	33.5	32.3	31.6
0	0	16Apr 09	22:37:00	60	27.1 3.08E+04	33.4	22	44.5	30.6	28.9	27.1	24.8	22.4	22
0	0	16Apr 09	22:38:00	60	23.5 1.34E+04	26.7	21.7	44.5	26	24.2	23.6	22.8	21.7	21.7
0	0	16Apr 09	22:39:00	60	33.5 1.34E+05	38.9	26.1	50.9	37.1	34.3	33	32.1	28.9	26.2
0	0	16Apr 09	22:40:00	60	32.8 1.14E+05	37.9	28.5	50.9	35.4	33.5	32.8	31.8	29.6	28.5
0	0	16Apr 09	22:41:00	60	24.9 1.85E+04	32.5	21.7	42.9	28.4	25.1	23.7	22.7	21.7	21.7
0	0	16Apr 09	22:42:00	60	27.2 3.15E+04	31.8	22.1	46.1	30.6	29	27	25.7	22.4	22.1
0	0	16Apr 09	22:43:00	60	30.4 6.58E+04	32.8	28.2	47.6	31.8	31.2	30.9	30.1	28.6	28.2
0	0	16Apr 09	22:44:00	60	34.6 1.73E+05	37.1	30.5	49.9	35.9	35.4	35.1	34.7	32	30.5
0	0	16Apr 09	22:45:00	60	31.4 8.28E+04	36.8	26.2	50.1	34.5	32.2	31.6	30.5	27.4	26.2
0	0	16Apr 09	22:46:00	60	31.3 8.09E+04	37.3	28.1	51.8	33	32	31.7	31.1	28.8	28.1
0	0	16Apr 09	22:47:00	60	38.6 4.35E+05	43.5	34.2	55.3	40.2	39.2	38.8	38.3	36.1	34.2
0	0	16Apr 09	22:48:00	60	31.3 8.09E+04	35.8	25.5	47.4	33.5	31.9	31.6	30.9	28	25.5
0	0	16Apr 09	22:49:00	60	28.5 4.25E+04	33	25	46.1	30.9	29.2	28.5	27.5	25.7	25
0	0	16Apr 09	22:50:00	60	34.1 1.54E+05	37.5	30.3	51.1	36.7	35.8	35	33.1	30.7	30.3
0	0	16Apr 09	22:51:00	60	34 1.51E+05	37.7	28.5	51.1	36.5	35.4	34.8	33.7	29.6	28.5
0	0	16Apr 09	22:52:00	60	28 3.79E+04	31.6	24.5	43.8	30.4	28.8	28.4	27.4	25.1	24.5
0	0	16Apr 09	22:53:00	60	33 1.20E+05	36.6	29	48.6	35.2	34.1	33.5	32.6	29.9	29
0	0	16Apr 09	22:54:00	60	34.8 1.81E+05	38.1	32.1	49.9	37.3	35.2	34.7	34	32.7	32.1
0	0	16Apr 09	22:55:00	60	31.7 8.87E+04	35.1	28.8	49.1	33.7	32.4	31.9	31.1	29.8	29
0	0	16Apr 09	22:56:00	60	30.2 6.28E+04	33.3	27.7	48.6	31.6	30.7	30.5	30	28.3	27.7
0	0	16Apr 09	22:57:00	60	28 3.79E+04	30.5	25.3	46.9	29.7	28.9	28.6	27.8	26.2	25.3
0	0	16Apr 09	22:58:00	60	30.3 6.43E+04	34.3	25.7	48	32.5	31.2	30.7	29.9	27.2	25.7
0	0	16Apr 09	22:59:00	60	34.3 1.61E+05	37.5	30.3	50.2	36.5	35.2	34.8	33.9	31.7	30.3

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	23:00:00	60	33.7	1.41E+05	36.7	30.8	48.3	35.4	34.5	34.1	33.4	31.5	30.8
0	0	16Apr 09	23:01:00	60	35.4	2.08E+05	38.9	31.3	52.2	37.6	36.7	36.2	35.1	31.7	31.3
0	0	16Apr 09	23:02:00	60	38	3.79E+05	43.1	33.6	55.1	41.6	39.5	37.8	35.9	34.2	33.6
0	0	16Apr 09	23:03:00	60	37	3.01E+05	42.3	32.4	53.7	40.3	37.6	36.9	35.9	33.5	32.4
0	0	16Apr 09	23:04:00	60	32.5	1.07E+05	36.2	25	48.7	35	33.9	33.4	32.2	27.1	25.2
0	0	16Apr 09	23:05:00	60	25	1.90E+04	26.8	23.7	43.7	25.9	25.4	25.2	24.8	24	23.7
0	0	16Apr 09	23:06:00	60	27.6	3.45E+04	33.9	23.1	46.2	31.3	28.3	27.7	25	23.5	23.1
0	0	16Apr 09	23:07:00	60	29.3	5.11E+04	33.3	24.9	46.9	31.6	30.1	29.8	29.2	26	24.9
0	0	16Apr 09	23:08:00	60	26.1	2.44E+04	29.9	23.8	44.7	27.6	26.7	26.4	25.8	24.2	23.8
0	0	16Apr 09	23:09:00	60	26.7	2.81E+04	29.7	24.3	42.9	28.1	27.4	27.1	26.5	24.6	24.3
0	0	16Apr 09	23:10:00	60	28.9	4.66E+04	33.6	24.9	46.4	30.9	29.8	29.4	28.3	25.7	24.9
0	0	16Apr 09	23:11:00	60	29	4.77E+04	37.9	24.7	51.2	31.3	29.2	28.1	27.4	25.5	24.7
0	0	16Apr 09	23:12:00	60	30.3	6.43E+04	36.9	26.7	47.9	32.2	30.9	30.7	30.1	27.4	26.7
0	0	16Apr 09	23:13:00	60	33.1	1.23E+05	36.3	27.9	48.1	34.9	34.2	33.8	32.9	29.6	28.1
0	0	16Apr 09	23:14:00	60	34.5	1.69E+05	38.2	27.7	50.6	37.5	36.5	35.8	34.2	28.6	27.7
0	0	16Apr 09	23:15:00	60	32.5	1.07E+05	36.8	30.4	49.9	35.1	32.7	32.2	31.7	30.6	30.4
0	0	16Apr 09	23:16:00	60	33.9	1.47E+05	37.3	30.7	49.1	35.6	34.5	34.2	33.6	31.4	30.7
0	0	16Apr 09	23:17:00	60	32.3	1.02E+05	34.9	28.9	47.4	34.2	33.2	32.8	31.9	30	28.9
0	0	16Apr 09	23:18:00	60	33	1.20E+05	35.9	28.7	48.1	34.7	33.9	33.7	33.2	29.5	28.7
0	0	16Apr 09	23:19:00	60	32	9.51E+04	37.8	26.1	51.1	35.3	32.6	31.9	31.1	26.6	26.1
0	0	16Apr 09	23:20:00	60	28.6	4.35E+04	32.9	26.1	46.5	29.9	29.2	28.8	28.2	26.5	26.1
0	0	16Apr 09	23:21:00	60	28.1	3.87E+04	34.2	24.6	46.9	30.8	29	28.2	26.8	24.6	24.6
0	0	16Apr 09	23:22:00	60	34	1.51E+05	38.3	29.9	51.2	36.2	34.8	34.6	33.9	30.9	30.1
0	0	16Apr 09	23:23:00	60	36.6	2.74E+05	43.7	29.7	56.9	41.1	37.1	36.4	34.2	31.2	29.7
0	0	16Apr 09	23:24:00	60	36.1	2.44E+05	40.8	32.6	51.2	38.1	36.6	36	35.3	33.6	32.6
0	0	16Apr 09	23:25:00	60	31.9	9.29E+04	36.8	29.1	48.5	34.3	32.1	31.7	31	29.5	29.1
0	0	16Apr 09	23:26:00	60	29.7	5.60E+04	36.8	26.4	49.1	31.8	29.5	29.1	28.6	27.3	26.4
0	0	16Apr 09	23:27:00	60	31.5	8.48E+04	35.6	27.4	47.5	33	32.2	31.9	31.3	28.7	27.4
0	0	16Apr 09	23:28:00	60	33.1	1.23E+05	38.4	27.6	52	36.4	33.9	33.3	31.7	28.5	27.6
0	0	16Apr 09	23:29:00	60	34.9	1.85E+05	38.6	30.9	51	37.5	35.7	35.2	34.4	31.6	31
0	0	16Apr 09	23:30:00	60	27.5	3.37E+04	32.6	24.8	47	29.4	28	27.3	26.6	25.3	24.9
0	0	16Apr 09	23:31:00	60	30.5	6.73E+04	34.5	26.4	50	33.3	31.4	30.8	29.8	27.2	26.4
0	0	16Apr 09	23:32:00	60	38.4	4.15E+05	43.8	33.2	58.6	40.6	39	38.6	37.9	34.9	33.6
0	0	16Apr 09	23:33:00	60	40.7	7.05E+05	48.8	30	61.5	43.4	42.1	41.4	40	32.3	30.3
0	0	16Apr 09	23:34:00	60	36.3	2.56E+05	40.4	32.8	53	38.1	37.2	36.8	36	33.5	32.8
0	0	16Apr 09	23:35:00	60	35.7	2.23E+05	40.3	32	54.8	38.3	36.9	36	34.8	32.7	32.1
0	0	16Apr 09	23:36:00	60	33.2	1.25E+05	37.3	29.2	49.8	35.5	34.3	33.9	32.9	30.1	29.2
0	0	16Apr 09	23:37:00	60	37.3	3.22E+05	45.3	29.7	58.6	39.9	38.7	37.9	35.6	31.3	30.1
0	0	16Apr 09	23:38:00	60	36.1	2.44E+05	43.9	27.3	57.6	40.3	37.3	35.7	33.2	28.7	27.3
0	0	16Apr 09	23:39:00	60	27.7	3.53E+04	35.9	24	50.6	29.1	27.7	27.3	26.5	24.7	24.1
0	0	16Apr 09	23:40:00	60	33.3	1.28E+05	39.9	24.2	55.1	36.3	33.9	33.4	32.6	26.7	24.3
0	0	16Apr 09	23:41:00	60	33	1.20E+05	39	26.3	52.5	37.3	34.4	33	30	27.2	26.3
0	0	16Apr 09	23:42:00	60	28.2	3.96E+04	32.4	24.7	48	30.9	28.9	28.3	27.3	25.6	24.7
0	0	16Apr 09	23:43:00	60	27.1	3.08E+04	30.5	24.6	63.2	28.7	27.7	27.4	26.9	25.4	24.6
0	0	16Apr 09	23:44:00	60	32.6	1.09E+05	38.8	23.5	53.8	36.9	33.3	32.3	30.6	24.8	23.5

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	16Apr 09	23:45:00	60	24.8	1.81E+04	27.4	23	43.7	25.9	25.1	24.9	24.6	23.6	23.1
0	0	16Apr 09	23:46:00	60	25.1	1.94E+04	29.4	23	44.2	26.9	25.6	25.2	24.7	23.5	23
0	0	16Apr 09	23:47:00	60	33	1.20E+05	37.7	28.7	50.6	35.8	33.7	33.3	32.3	29.5	28.7
0	0	16Apr 09	23:48:00	60	35	1.90E+05	37.9	31.9	51.1	36.6	35.7	35.4	34.9	33	32.1
0	0	16Apr 09	23:49:00	60	36.9	2.94E+05	41.7	29.7	54.6	39.9	38.8	38.3	35.4	30.7	29.7
0	0	16Apr 09	23:50:00	60	40	6.00E+05	45.7	28.2	57.6	43.8	42.3	41.5	37.2	29.5	28.3
0	0	16Apr 09	23:51:00	60	32.9	1.17E+05	36.8	28.9	50.5	34.9	33.9	33.4	32.5	30.2	29.1
0	0	16Apr 09	23:52:00	60	33.8	1.44E+05	36.8	27.8	50.8	36	35.2	34.9	34.1	29.1	27.9
0	0	16Apr 09	23:53:00	60	34.8	1.81E+05	42.3	28.5	57.2	37.5	35.1	34.6	33.5	29.8	28.8
0	0	16Apr 09	23:54:00	60	32.7	1.12E+05	38.5	27.9	50.8	36.2	32.9	32.5	31.5	28.6	28.1
0	0	16Apr 09	23:55:00	60	31.9	9.29E+04	37.4	23.8	51.1	34.9	33.7	33.3	31.4	24.3	23.8
0	0	16Apr 09	23:56:00	60	25.7	2.23E+04	27.5	23.8	43.8	26.9	26.4	26.2	25.6	24.3	23.8
0	0	16Apr 09	23:57:00	60	29.9	5.86E+04	37.8	23.4	49.3	33	30.8	30.3	26.3	24.1	23.4
0	0	16Apr 09	23:58:00	60	33.3	1.28E+05	39.5	26.7	52.6	37.4	35.2	32.4	31.4	27.3	26.7
0	0	16Apr 09	23:59:00	60	38.6	4.35E+05	40.4	35.2	53.5	39.8	39.4	39.2	38.7	37	35.4
0	0	17Apr 09	0:00:00	60	35	1.90E+05	39.9	24.8	52.1	38.2	37	36.5	35.2	25.9	24.8
0	0	17Apr 09	0:01:00	60	25.7	2.23E+04	27.5	24.1	43.1	26.8	26.3	26	25.6	24.4	24.1
0	0	17Apr 09	0:02:00	60	27.4	3.30E+04	32.3	24.4	45.5	29.4	28.4	27.9	26.8	24.6	24.4
0	0	17Apr 09	0:03:00	60	35.1	1.94E+05	40.1	25.4	53.1	38.2	36.8	36.3	34.7	27.4	25.4
0	0	17Apr 09	0:04:00	60	32.3	1.02E+05	42.1	22.3	56.5	36.7	31.4	27.8	25.1	22.4	22.3
0	0	17Apr 09	0:05:00	60	36.9	2.94E+05	42.2	30.5	54.1	40.6	37.8	37.2	35.4	31.4	30.5
0	0	17Apr 09	0:06:00	60	38	3.79E+05	41.6	33.8	53.6	40.5	38.9	38.4	37.5	35.3	33.9
0	0	17Apr 09	0:07:00	60	37.9	3.70E+05	41.8	34.3	54.3	39.7	38.7	38.3	37.7	35.1	34.3
0	0	17Apr 09	0:08:00	60	40.4	6.58E+05	46.5	34.1	59.2	44.7	41.6	39.8	37.9	35.1	34.1
0	0	17Apr 09	0:09:00	60	41.2	7.91E+05	46.4	28.1	57	44.8	43.1	42	40.6	29.4	28.1
0	0	17Apr 09	0:10:00	60	44.7	1.77E+06	50.5	28.1	63.3	48.9	47.1	45.8	41.6	29.3	28.1
0	0	17Apr 09	0:11:00	60	37.5	3.37E+05	45	27.6	56.3	43.3	37.1	35	33.2	28.4	27.6
0	0	17Apr 09	0:12:00	60	33.3	1.28E+05	39.5	27.8	51.9	37.6	33.1	32.6	31.7	28.8	27.8
0	0	17Apr 09	0:13:00	60	33.6	1.37E+05	39.8	26.5	52.8	37.5	34.9	33.7	31.7	27.4	26.5
0	0	17Apr 09	0:14:00	60	33.9	1.47E+05	37.5	26.9	52.8	36.9	36	34.8	33	28.2	27.1
0	0	17Apr 09	0:15:00	60	29.2	4.99E+04	33.3	23.6	45.6	31.9	31.2	30.4	28.9	24.2	23.6
0	0	17Apr 09	0:16:00	60	27.2	3.15E+04	30.5	22.6	42.8	29.6	28.6	28.2	27.2	22.7	22.6
0	0	17Apr 09	0:17:00	60	23.9	1.47E+04	27.6	22.3	41.8	25.6	24.6	24	23.6	22.4	22.3
0	0	17Apr 09	0:18:00	60	31.2	7.91E+04	34.8	26.3	54.3	33.4	32.1	31.6	30.8	27.9	26.3
0	0	17Apr 09	0:19:00	60	29.7	5.60E+04	35.3	22.6	45.7	34.4	31	29.5	26.2	23.2	22.6
0	0	17Apr 09	0:20:00	60	26.6	2.74E+04	32.2	21.8	47.1	29.7	27.2	26.6	25.7	22.4	21.8
0	0	17Apr 09	0:21:00	60	25.6	2.18E+04	29.5	22.6	43.8	27.6	26.5	26.1	25.2	23.2	22.6
0	0	17Apr 09	0:22:00	60	23.1	1.23E+04	24.8	21.9	42.6	24	23.6	23.4	23	22.2	22
0	0	17Apr 09	0:23:00	60	22.2	9.96E+03	24.6	21.1	45.7	23.2	22.7	22.5	22.2	21.2	21.1
0	0	17Apr 09	0:24:00	60	22.6	1.09E+04	24	21.4	39.2	23.6	22.9	22.8	22.5	21.6	21.4
0	0	17Apr 09	0:25:00	60	22.7	1.12E+04	24	21.3	38.2	23.7	23.2	22.9	22.6	21.6	21.3
0	0	17Apr 09	0:26:00	60	25.2	1.99E+04	30.6	21.5	43.2	28.8	26.4	24.4	23	21.8	21.5
0	0	17Apr 09	0:27:00	60	28.6	4.35E+04	35.3	23.4	53.4	31.9	29.7	29.1	25.9	23.7	23.4
0	0	17Apr 09	0:28:00	60	23.6	1.37E+04	25.4	22.4	38.1	24.6	24	23.8	23.6	22.7	22.4
0	0	17Apr 09	0:29:00	60	23.1	1.23E+04	24.4	22.4	37.4	23.8	23.6	23.4	23.2	22.4	22.4

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	17Apr 09	0:30:00	60	25.4	2.08E+04	26.3	24.1	39.9	26.3	25.8	25.7	25.5	24.6	24.1
0	0	17Apr 09	0:31:00	60	25.4	2.08E+04	27.6	24.3	40.9	26.5	25.9	25.7	25.4	24.4	24.3
0	0	17Apr 09	0:32:00	60	25.2	1.99E+04	27.6	23.8	40.6	26.6	25.8	25.6	25.1	24.1	23.8
0	0	17Apr 09	0:33:00	60	25.4	2.08E+04	28.3	23.8	41.7	26.8	25.9	25.7	25.2	24.2	23.8
0	0	17Apr 09	0:34:00	60	29.7	5.60E+04	35.6	23.9	48	34.1	30.6	28.5	27.2	24.3	24
0	0	17Apr 09	0:35:00	60	33.8	1.44E+05	37.8	27.1	50.8	36.3	35.4	35	33.9	28.1	27.1
0	0	17Apr 09	0:36:00	60	30.7	7.05E+04	36.5	26.9	49.2	32.8	31.6	30.9	29.7	27.6	27.1
0	0	17Apr 09	0:37:00	60	26	2.39E+04	29.1	24	42.3	27.4	26.7	26.5	26	24.4	24
0	0	17Apr 09	0:38:00	60	26.3	2.56E+04	32.4	23.4	44.8	29.7	25.9	25.4	24.8	23.7	23.4
0	0	17Apr 09	0:39:00	60	30.1	6.14E+04	34.3	27.6	47.8	31.8	30.8	30.3	29.7	28.3	27.6
0	0	17Apr 09	0:40:00	60	26.2	2.50E+04	29.8	23.4	42.9	28.8	27.9	26.4	25	24	23.4
0	0	17Apr 09	0:41:00	60	23.8	1.44E+04	27.5	22.8	40.7	24.1	23.8	23.7	23.5	23.1	22.8
0	0	17Apr 09	0:42:00	60	24.1	1.54E+04	27.9	22.2	41.1	27	24	23.8	23.3	22.3	22.2
0	0	17Apr 09	0:43:00	60	24.2	1.58E+04	25.4	23.1	43.7	24.9	24.6	24.5	24.2	23.3	23.1
0	0	17Apr 09	0:44:00	60	24.3	1.61E+04	25.6	23.4	38.9	24.9	24.7	24.6	24.4	23.5	23.4
0	0	17Apr 09	0:45:00	60	24.2	1.58E+04	27.9	23	42.2	25.7	24.7	24.2	23.8	23.2	23
0	0	17Apr 09	0:46:00	60	33.3	1.28E+05	41.1	23.4	52.9	38	34.7	33.9	29.1	23.7	23.4
0	0	17Apr 09	0:47:00	60	31.8	9.08E+04	39.7	24.5	50.7	34.7	32.6	32.1	29.9	25.1	24.5
0	0	17Apr 09	0:48:00	60	23.9	1.47E+04	26.7	22.6	38.8	25.7	24	23.9	23.6	23	22.6
0	0	17Apr 09	0:49:00	60	23.5	1.34E+04	24.7	22.6	43.6	24.5	23.9	23.7	23.4	22.6	22.6
0	0	17Apr 09	0:50:00	60	23	1.20E+04	24.1	22.2	36.8	23.8	23.5	23.3	23	22.2	22.2
0	0	17Apr 09	0:51:00	60	23.3	1.28E+04	24.4	22.5	41.6	24	23.8	23.6	23.4	22.5	22.5
0	0	17Apr 09	0:52:00	60	23.7	1.41E+04	25.5	22.5	39.8	25.3	24.4	24.1	23.6	22.5	22.5
0	0	17Apr 09	0:53:00	60	23.3	1.28E+04	28.2	22	39.3	23.9	23.6	23.4	23.1	22.2	22
0	0	17Apr 09	0:54:00	60	22.8	1.14E+04	24.1	22.1	37.1	23.7	23.3	23	22.8	22.2	22.1
0	0	17Apr 09	0:55:00	60	22.6	1.09E+04	23.6	22	37.4	23	22.8	22.7	22.5	22.1	22
0	0	17Apr 09	0:56:00	60	23.5	1.34E+04	25.1	22.1	38.3	24.6	24	23.8	23.2	22.2	22.1
0	0	17Apr 09	0:57:00	60	23.6	1.37E+04	24.9	22.6	37.9	24.4	23.9	23.8	23.6	23	22.6
0	0	17Apr 09	0:58:00	60	29.4	5.23E+04	37.6	24.2	53.8	33.2	29	27.4	26	24.6	24.2
0	0	17Apr 09	0:59:00	60	24.7	1.77E+04	26.5	23.1	39.9	25.8	25.1	24.8	24.5	23.3	23.1
0	0	17Apr 09	1:00:00	60	24.5	1.69E+04	26	23.5	38.7	25.4	24.9	24.7	24.4	23.5	23.5
0	0	17Apr 09	1:01:00	60	24.7	1.77E+04	26	23.5	39.3	25.6	25	24.9	24.6	23.5	23.5
0	0	17Apr 09	1:02:00	60	24.7	1.77E+04	26.6	23.5	39.1	25.8	25.2	24.9	24.5	23.5	23.5
0	0	17Apr 09	1:03:00	60	26.5	2.68E+04	29.7	23.4	42.8	28.8	28.2	27.4	25.2	24	23.4
0	0	17Apr 09	1:04:00	60	28.2	3.96E+04	30.9	26.2	43.1	29.8	28.9	28.5	27.8	26.5	26.2
0	0	17Apr 09	1:05:00	60	26.2	2.50E+04	29.9	24.2	43.4	27.7	26.6	26.3	25.7	24.4	24.2
0	0	17Apr 09	1:06:00	60	25.1	1.94E+04	26.5	23.5	39.9	26.4	25.8	25.5	25	23.5	23.5
0	0	17Apr 09	1:07:00	60	25	1.90E+04	26.5	23.5	42.4	26.3	25.7	25.4	24.9	23.6	23.5
0	0	17Apr 09	1:08:00	60	24.1	1.54E+04	24.9	23.1	38.8	24.8	24.6	24.4	24.1	23.2	23.1
0	0	17Apr 09	1:09:00	60	24.2	1.58E+04	25.2	23.1	39.3	24.9	24.6	24.4	24.1	23.2	23.1
0	0	17Apr 09	1:10:00	60	25.9	2.33E+04	28.2	23.7	41.2	26.9	26.5	26.3	25.9	24.5	23.7
0	0	17Apr 09	1:11:00	60	24.7	1.77E+04	26.9	23.1	46.1	26.4	25.4	24.9	24.3	23.2	23.1
0	0	17Apr 09	1:12:00	60	25	1.90E+04	27	23.6	40.3	26.3	25.7	25.5	24.9	23.6	23.6
0	0	17Apr 09	1:13:00	60	27.6	3.45E+04	32.2	23.7	44.7	30.8	27.9	26.9	26.1	24.5	23.7
0	0	17Apr 09	1:14:00	60	29.7	5.60E+04	33.2	26.7	46.4	31.5	30.5	30.2	29.5	27.3	26.8

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	17Apr 09	1:15:00	60	25.4	2.08E+04	28.9	23.6	44	26.9	25.7	25.4	24.9	23.6	23.6
0	0	17Apr 09	1:16:00	60	27.9	3.70E+04	30.6	26.5	44	29.4	28.5	28.1	27.6	26.5	26.5
0	0	17Apr 09	1:17:00	60	27.2	3.15E+04	30.1	25.3	43.2	29	27.7	27.2	26.6	25.3	25.3
0	0	17Apr 09	1:18:00	60	29.4	5.23E+04	32.8	26.8	52	30.8	29.9	29.6	29.1	27.3	26.8
0	0	17Apr 09	1:19:00	60	27.9	3.70E+04	31.8	25	44.9	29.3	28.5	28.2	27.7	25.7	25.1
0	0	17Apr 09	1:20:00	60	26	2.39E+04	31.1	23.6	42.5	28.4	26	25.7	25.1	24.1	23.6
0	0	17Apr 09	1:21:00	60	24.8	1.81E+04	27.6	23	40.3	25.9	25.3	25	24.6	23.4	23
0	0	17Apr 09	1:22:00	60	24.3	1.61E+04	25.8	23.6	38.9	24.9	24.6	24.5	24.2	23.6	23.6
0	0	17Apr 09	1:23:00	60	23.5	1.34E+04	24.5	22.6	39.2	24.1	23.8	23.7	23.4	22.6	22.6
0	0	17Apr 09	1:24:00	60	22.7	1.12E+04	24.2	22	41.9	23.4	22.9	22.8	22.6	22.1	22
0	0	17Apr 09	1:25:00	60	25.2	1.99E+04	27.1	22.7	42.4	26.6	25.9	25.7	25.3	23.3	22.7
0	0	17Apr 09	1:26:00	60	23.8	1.44E+04	26.2	22.7	44.4	24.7	24	23.9	23.6	23	22.7
0	0	17Apr 09	1:27:00	60	25.4	2.08E+04	27.2	23.6	44	26.5	25.9	25.7	25.4	24.1	23.6
0	0	17Apr 09	1:28:00	60	24.1	1.54E+04	26.4	23	43.8	25	24.5	24.3	23.9	23.2	23
0	0	17Apr 09	1:29:00	60	23.5	1.34E+04	25	22.5	42.9	24.4	23.9	23.7	23.5	22.5	22.5
0	0	17Apr 09	1:30:00	60	23.6	1.37E+04	25.2	22.3	42.5	24.6	23.9	23.8	23.5	22.5	22.3
0	0	17Apr 09	1:31:00	60	23.5	1.34E+04	25.1	22.1	42.7	24.4	23.8	23.7	23.4	22.4	22.1
0	0	17Apr 09	1:32:00	60	23.4	1.31E+04	25	22.2	42.4	24.1	23.7	23.6	23.3	22.3	22.2
0	0	17Apr 09	1:33:00	60	23	1.20E+04	24.6	21.8	41.9	23.8	23.4	23.2	22.9	22.2	22
0	0	17Apr 09	1:34:00	60	23.1	1.23E+04	24.7	22.1	41.9	23.9	23.6	23.4	23.1	22.2	22.1
0	0	17Apr 09	1:35:00	60	24.9	1.85E+04	28	22.7	46	26.6	25.7	25.3	24.4	23.1	22.7
0	0	17Apr 09	1:36:00	60	28.7	4.45E+04	35.2	22.5	50.9	31.4	29	28.5	27.5	25	22.6
0	0	17Apr 09	1:37:00	60	31.3	8.09E+04	35.6	26.5	51.6	33.4	32.4	31.9	31	28.2	26.5
0	0	17Apr 09	1:38:00	60	31.3	8.09E+04	35.8	25.5	49.5	34.3	32.4	31.6	30.1	28	25.5
0	0	17Apr 09	1:39:00	60	26.3	2.56E+04	31.5	22.5	46	29.1	27.5	26.8	25.1	23.1	22.5
0	0	17Apr 09	1:40:00	60	23.8	1.44E+04	27.1	22.5	45.2	25.1	24	23.8	23.5	22.5	22.5
0	0	17Apr 09	1:41:00	60	22.8	1.14E+04	26.2	22	39.4	23.6	22.9	22.8	22.6	22.1	22
0	0	17Apr 09	1:42:00	60	24.9	1.85E+04	28.2	22.7	46.4	26.6	25.6	25.2	24.5	23.2	22.7
0	0	17Apr 09	1:43:00	60	24.3	1.61E+04	28.2	22.3	46.8	26.1	24.9	24.5	23.8	22.5	22.3
0	0	17Apr 09	1:44:00	60	23.8	1.44E+04	27.2	21.8	46.2	25.6	24.8	23.9	23	22.1	21.8
0	0	17Apr 09	1:45:00	60	24.5	1.69E+04	26	22.8	44.5	25	24.8	24.6	24.4	23.3	22.8
0	0	17Apr 09	1:46:00	60	23.5	1.34E+04	27.1	22.3	45	24.4	23.8	23.7	23.4	22.4	22.3
0	0	17Apr 09	1:47:00	60	24.6	1.73E+04	28.2	23.2	41.9	25.8	24.8	24.6	24.1	23.2	23.2
0	0	17Apr 09	1:48:00	60	24.3	1.61E+04	26.1	22.1	39.5	25.6	25	24.8	24.4	22.4	22.1
0	0	17Apr 09	1:49:00	60	22.9	1.17E+04	24.6	21.8	44.5	23.8	23.4	23.1	22.8	22.1	21.8
0	0	17Apr 09	1:50:00	60	23.1	1.23E+04	24.8	22.2	45.8	23.9	23.5	23.3	22.9	22.2	22.2
0	0	17Apr 09	1:51:00	60	23.3	1.28E+04	25.8	22.5	43.3	24	23.7	23.5	23.2	22.5	22.5
0	0	17Apr 09	1:52:00	60	24.8	1.81E+04	28.2	23	45.7	26.1	25.4	25.1	24.5	23.3	23
0	0	17Apr 09	1:53:00	60	33.8	1.44E+05	39.6	25.7	50.8	37.6	35.5	34.8	32.5	27	26
0	0	17Apr 09	1:54:00	60	31.8	9.08E+04	39.3	26.8	53.5	34.5	32.3	31.6	30.4	27.6	26.9
0	0	17Apr 09	1:55:00	60	30.1	6.14E+04	34	25.1	47.7	32.9	32.1	31.3	28.8	25.6	25.1
0	0	17Apr 09	1:56:00	60	25.1	1.94E+04	26.6	23.8	40.5	26.2	25.6	25.4	24.9	24.1	23.8
0	0	17Apr 09	1:57:00	60	27.3	3.22E+04	33	23.5	47.8	31.4	27.7	26.1	25	23.5	23.5
0	0	17Apr 09	1:58:00	60	28.5	4.25E+04	32.7	24.8	44	30.6	29.5	29.1	28	25.6	25
0	0	17Apr 09	1:59:00	60	25.9	2.33E+04	27.8	25.1	40.9	26.8	26.3	26	25.7	25.1	25.1

Meas

Site	Number	Date	Time	Duration	Leq	Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	17Apr 09	2:00:00	60	25.4 2.08E+04	28.1	24.2	41.2	27.1	25.7	25.4	24.9	24.2	24.2
0	0	17Apr 09	2:01:00	60	25.6 2.18E+04	27	24.1	40.5	26.4	25.9	25.7	25.5	24.6	24.1
0	0	17Apr 09	2:02:00	60	26 2.39E+04	28.7	24.6	41.9	27.3	26.4	26	25.6	24.6	24.6
0	0	17Apr 09	2:03:00	60	25.2 1.99E+04	27	23.8	42.9	26.2	25.7	25.6	25.2	24.2	23.8
0	0	17Apr 09	2:04:00	60	28.3 4.06E+04	32.7	25.2	46	30.7	29.1	28.3	27.5	25.9	25.2
0	0	17Apr 09	2:05:00	60	29.6 5.47E+04	33.3	26.6	46.7	31.7	30.4	29.8	28.9	27.3	26.6
0	0	17Apr 09	2:06:00	60	31.4 8.28E+04	38.3	27.5	52	34.1	31.9	31.2	29.8	28.2	27.5
0	0	17Apr 09	2:07:00	60	27.4 3.30E+04	29	25.5	45.5	28.5	27.9	27.7	27.3	26	25.5
0	0	17Apr 09	2:08:00	60	24.8 1.81E+04	25.7	23.7	39.3	25.6	25.1	24.9	24.7	24.1	23.7
0	0	17Apr 09	2:09:00	60	24.3 1.61E+04	25.2	23.4	38.2	24.9	24.7	24.6	24.3	23.4	23.4
0	0	17Apr 09	2:10:00	60	25.3 2.03E+04	26.6	24.3	39.3	25.9	25.7	25.6	25.3	24.3	24.3
0	0	17Apr 09	2:11:00	60	26.1 2.44E+04	29.3	24.6	43.3	28.3	26.2	25.9	25.4	24.6	24.6
0	0	17Apr 09	2:12:00	60	29.7 5.60E+04	40.3	23.9	56	31.9	29.2	27.9	26.9	24.2	23.9
0	0	17Apr 09	2:13:00	60	26.3 2.56E+04	29.4	22.9	42.8	28.1	27.3	26.9	26.3	23.5	23
0	0	17Apr 09	2:14:00	60	28 3.79E+04	34.3	24.8	47.5	29.8	28.6	28.2	27.5	25.2	24.8
0	0	17Apr 09	2:15:00	60	32.4 1.04E+05	40.3	25.2	56	37.3	32	30.3	28.8	26.1	25.2
0	0	17Apr 09	2:16:00	60	41.9 9.29E+05	47.3	32.8	59.9	45.1	43.5	42.7	41.2	34.9	33.1
0	0	17Apr 09	2:17:00	60	28.5 4.25E+04	35.7	24.6	46.8	32.6	28	27.3	26.5	24.9	24.6
0	0	17Apr 09	2:18:00	60	28.4 4.15E+04	35.3	24.7	48.6	30.8	28.8	28.3	27.3	25.5	24.7
0	0	17Apr 09	2:19:00	60	35 1.90E+05	43.2	25.3	55.3	39	36.4	35.4	32.2	25.7	25.3
0	0	17Apr 09	2:20:00	60	25.2 1.99E+04	26.9	23.8	40.8	26.2	25.7	25.5	25.1	24.2	23.8
0	0	17Apr 09	2:21:00	60	28.1 3.87E+04	34.9	24.6	50.6	30.7	28.8	28.3	26.8	24.7	24.6
0	0	17Apr 09	2:22:00	60	26.2 2.50E+04	30.3	23.6	44	28.9	26.8	26	25.3	23.6	23.6
0	0	17Apr 09	2:23:00	60	24.4 1.65E+04	26.1	23.7	39.6	24.9	24.7	24.6	24.4	23.8	23.7
0	0	17Apr 09	2:24:00	60	26 2.39E+04	27.8	24.3	44.8	26.9	26.6	26.4	26.1	24.5	24.3
0	0	17Apr 09	2:25:00	60	24.5 1.69E+04	25.9	23.4	40.3	25.5	24.9	24.8	24.5	23.5	23.4
0	0	17Apr 09	2:26:00	60	27.6 3.45E+04	33.3	24.2	45.3	29.7	28	27.7	26.9	25.1	24.2
0	0	17Apr 09	2:27:00	60	25.9 2.33E+04	28.4	24.8	43.1	26.8	26.4	26.2	25.8	25.1	24.8
0	0	17Apr 09	2:28:00	60	26.3 2.56E+04	28.7	24.7	41.1	27.7	26.9	26.7	26.2	25.1	24.7
0	0	17Apr 09	2:29:00	60	33.9 1.47E+05	39.6	27.2	51	37.1	35.4	34.6	33.2	27.9	27.2
0	0	17Apr 09	2:30:00	60	32.5 1.07E+05	37.9	27.2	50.4	36	34.1	32	30.4	27.9	27.2
0	0	17Apr 09	2:31:00	60	30.3 6.43E+04	34.4	26.6	46.3	32.7	31.7	31.2	29.1	27.1	26.6
0	0	17Apr 09	2:32:00	60	28.2 3.96E+04	30.2	26.7	45	29.6	29.1	28.7	28	26.8	26.7
0	0	17Apr 09	2:33:00	60	30.2 6.28E+04	35.2	26.4	49.4	32.1	30.8	30.4	29.7	27.5	26.4
0	0	17Apr 09	2:34:00	60	28.6 4.35E+04	31.6	26.4	47.1	29.9	29.2	28.9	28.5	26.7	26.4
0	0	17Apr 09	2:35:00	60	27 3.01E+04	28.9	25.7	44.5	28.2	27.6	27.3	26.8	26.1	25.7
0	0	17Apr 09	2:36:00	60	27 3.01E+04	28.1	26.1	43.9	27.8	27.5	27.3	27	26.2	26.1
0	0	17Apr 09	2:37:00	60	27.8 3.62E+04	30.2	25.9	45.1	29.3	28.4	28	27.6	26.5	26
0	0	17Apr 09	2:38:00	60	27.7 3.53E+04	29.2	26.3	45.4	28.7	28.3	28.1	27.7	27	26.3
0	0	17Apr 09	2:39:00	60	33.2 1.25E+05	38.1	27.9	51	36.4	34.8	34.1	31.9	28.8	28
0	0	17Apr 09	2:40:00	60	30.2 6.28E+04	35.7	26.6	48.1	33.5	31.4	29.6	28.5	27.1	26.6
0	0	17Apr 09	2:41:00	60	34.2 1.58E+05	41.2	26.4	55.4	39.2	34.8	33.8	29.9	27.3	26.4
0	0	17Apr 09	2:42:00	60	38 3.79E+05	42.6	27.3	57.1	41.8	41.2	40.3	35.1	28.2	27.3
0	0	17Apr 09	2:43:00	60	29.5 5.35E+04	36.8	26.6	48.3	31.1	30.1	29.7	28.4	26.8	26.6
0	0	17Apr 09	2:44:00	60	44.1 1.54E+06	48.8	32.3	61.6	47.4	45.7	45	42.8	37.2	32.4

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	17Apr 09	2:45:00	60	37.2	3.15E+05	45.8	30.9	61.9	41.4	37.2	35.3	33.6	31.3	31
0	0	17Apr 09	2:46:00	60	31.4	8.28E+04	35.6	29.6	48.8	32.8	32	31.6	30.9	30.1	29.6
0	0	17Apr 09	2:47:00	60	32.9	1.17E+05	38.9	26.7	53.3	35.8	34.7	34	32.2	27.4	26.7
0	0	17Apr 09	2:48:00	60	36.6	2.74E+05	44.4	26.6	60.3	39.7	37.2	36.6	35	28	26.6
0	0	17Apr 09	2:49:00	60	28.4	4.15E+04	32.1	26.8	45.4	29.8	28.9	28.6	28.1	27.2	26.8
0	0	17Apr 09	2:50:00	60	26.8	2.87E+04	28.4	25.3	44.5	27.8	27.3	27.1	26.7	25.8	25.3
0	0	17Apr 09	2:51:00	60	33.3	1.28E+05	43.1	25.3	58.5	39	30.5	29.3	27.6	26.2	25.3
0	0	17Apr 09	2:52:00	60	34	1.51E+05	44.6	24.7	60.4	39.3	33.3	31.7	27.8	25.5	24.7
0	0	17Apr 09	2:53:00	60	26.3	2.56E+04	28.4	24.6	47	27.3	26.8	26.6	26.3	25.2	24.6
0	0	17Apr 09	2:54:00	60	34.4	1.65E+05	43.6	26.3	56.5	38.9	33.4	31.8	29.9	27.5	26.3
0	0	17Apr 09	2:55:00	60	39.9	5.86E+05	44.4	32.6	59.6	43.3	41.6	40.9	38.8	34.4	33
0	0	17Apr 09	2:56:00	60	42.2	9.96E+05	49.4	26.9	66.4	46.1	44.8	44.1	38.5	29.4	27.3
0	0	17Apr 09	2:57:00	60	26.3	2.56E+04	28.2	24.2	47.3	27.5	26.9	26.7	26.3	25	24.2
0	0	17Apr 09	2:58:00	60	26	2.39E+04	29.4	24.2	47.5	27.5	26.4	26	25.7	25	24.2
0	0	17Apr 09	2:59:00	60	26.1	2.44E+04	28.4	24.7	41	27.1	26.5	26.2	25.8	25	24.7
0	0	17Apr 09	3:00:00	60	25.3	2.03E+04	26.1	24.7	39.1	25.9	25.7	25.6	25.3	24.7	24.7
0	0	17Apr 09	3:01:00	60	42.7	1.12E+06	51.1	25.9	63.6	47.2	44.8	42.1	37.4	29.3	26.3
0	0	17Apr 09	3:02:00	60	43	1.20E+06	47.9	37.3	61	45.6	44.1	43.6	42.6	38.8	37.3
0	0	17Apr 09	3:03:00	60	36.4	2.62E+05	44.6	26.6	59	41.3	35.7	33.8	32.8	28.4	27
0	0	17Apr 09	3:04:00	60	27.6	3.45E+04	29.9	25.8	47.5	28.8	28.1	27.8	27.4	26.3	26
0	0	17Apr 09	3:05:00	60	28.2	3.96E+04	30.6	26.4	47.9	29.4	28.7	28.5	28.1	27.1	26.4
0	0	17Apr 09	3:06:00	60	29.6	5.47E+04	32.6	26.4	48.5	31.6	30.5	29.9	29.1	27.4	26.4
0	0	17Apr 09	3:07:00	60	35.2	1.99E+05	43.6	28.4	55.8	40	33.7	32.7	31.3	29.2	28.4
0	0	17Apr 09	3:08:00	60	35.9	2.33E+05	41.4	31.3	54.1	39.2	36.7	36	34.4	32.2	31.3
0	0	17Apr 09	3:09:00	60	44.4	1.65E+06	51.7	34.6	63.8	49.1	45.6	42.9	40.3	36.3	34.6
0	0	17Apr 09	3:10:00	60	40.1	6.14E+05	45.2	34.7	59.4	43.4	41.3	40.7	38.9	35.7	34.9
0	0	17Apr 09	3:11:00	60	34.8	1.81E+05	42.1	27.8	54.5	39.9	33.6	32.6	31.4	28.8	28
0	0	17Apr 09	3:12:00	60	29.7	5.60E+04	33.6	26.8	55.5	31.2	30.4	30.1	29.5	27.7	26.8
0	0	17Apr 09	3:13:00	60	33.2	1.25E+05	38.7	27.8	53.3	35.9	35	34.1	31.6	28.6	27.8
0	0	17Apr 09	3:14:00	60	38	3.79E+05	44.6	31.6	60.3	41.3	39.9	38.2	35.7	33.3	31.7
0	0	17Apr 09	3:15:00	60	35.7	2.23E+05	43.2	26.7	56.5	41	36	33.1	30.9	28.4	27.1
0	0	17Apr 09	3:16:00	60	37.4	3.30E+05	41.1	31.7	55.9	39.8	39	38.1	36.9	33.8	31.9
0	0	17Apr 09	3:17:00	60	30.8	7.21E+04	32.9	28.1	49.3	32.2	31.5	31.3	30.7	29.2	28.2
0	0	17Apr 09	3:18:00	60	37.6	3.45E+05	43.2	31.3	55.6	41.4	39	38.3	34.9	32.4	31.3
0	0	17Apr 09	3:19:00	60	32.1	9.73E+04	35.9	28.7	49.5	34	32.7	32.4	31.7	30	28.7
0	0	17Apr 09	3:20:00	60	36	2.39E+05	40.2	30.3	54.5	38.7	37.5	36.7	35.4	31.3	30.3
0	0	17Apr 09	3:21:00	60	37.3	3.22E+05	42.2	29.6	58.7	40.2	38.7	38.2	36.7	30.4	29.6
0	0	17Apr 09	3:22:00	60	40.6	6.89E+05	48.8	33.6	61.9	42.8	41.2	40.7	39.6	34.5	33.6
0	0	17Apr 09	3:23:00	60	37.4	3.30E+05	44.2	33.4	59.4	38.7	37.2	36.8	36.4	35	33.4
0	0	17Apr 09	3:24:00	60	37.3	3.22E+05	43.4	32.4	56.8	41.2	37.4	36.4	35.4	33.5	32.4
0	0	17Apr 09	3:25:00	60	36.3	2.56E+05	40.7	31.9	54.5	38.8	37.5	36.8	35.4	33.3	32.2
0	0	17Apr 09	3:26:00	60	34.3	1.61E+05	38.4	30.6	52.8	37.4	36.2	34.4	32.7	31.2	30.6
0	0	17Apr 09	3:27:00	60	38.7	4.45E+05	43.4	27.6	57.8	41.9	40.3	39.7	38.8	28.7	27.6
0	0	17Apr 09	3:28:00	60	29.3	5.11E+04	32.1	27.3	47.6	30.6	29.9	29.7	29.2	28.1	27.3
0	0	17Apr 09	3:29:00	60	38.1	3.87E+05	44.3	30.4	58.4	42.4	40.1	39	34	31.1	30.4

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)	
0	0	17Apr 09	3:30:00	60	45.5	2.13E+06	49.1	41.1	61.9	61.9	47.9	46.9	46.3	45.2	41.8	41.1
0	0	17Apr 09	3:31:00	60	42	9.51E+05	47.2	37.2	61.4	45	42.8	42.2	41.2	37.9	37.2	
0	0	17Apr 09	3:32:00	60	42.6	1.09E+06	49	28	60.9	47.3	45.2	43.3	37.7	29.7	28.1	
0	0	17Apr 09	3:33:00	60	30	6.00E+04	31.5	28	48.5	30.9	30.5	30.3	29.9	28.9	28.1	
0	0	17Apr 09	3:34:00	60	30.5	6.73E+04	35.2	28	48.6	31.8	30.8	30.5	29.9	28.6	28.1	
0	0	17Apr 09	3:35:00	60	36.5	2.68E+05	40.9	31.4	55.2	38.7	37.5	37	36.3	32.6	31.4	
0	0	17Apr 09	3:36:00	60	40.7	7.05E+05	45.7	32.4	60.1	42.7	41.6	41.2	40.5	36.4	33.1	
0	0	17Apr 09	3:37:00	60	32.9	1.17E+05	38.4	28	51	36.3	33.8	32.6	31.5	29.2	28.1	
0	0	17Apr 09	3:38:00	60	38.4	4.15E+05	43.8	32.3	60.4	42.2	38.6	37.9	36.8	34.7	32.4	
0	0	17Apr 09	3:39:00	60	33.7	1.41E+05	38.2	28	52.2	36.3	35.5	35.2	32.5	29	28.1	
0	0	17Apr 09	3:40:00	60	43.3	1.28E+06	47.8	37.9	61.5	45.4	44.3	43.8	42.8	40.2	38.2	
0	0	17Apr 09	3:41:00	60	39.8	5.73E+05	45.3	33.2	59.4	43.8	41.8	40	36.9	33.9	33.2	
0	0	17Apr 09	3:42:00	60	40.2	6.28E+05	45.2	34.2	58.1	44.1	40.6	39.6	38.7	35.6	34.2	
0	0	17Apr 09	3:43:00	60	30.7	7.05E+04	36.1	25.9	49.6	34.2	30.9	30.3	29.3	26.7	26.1	
0	0	17Apr 09	3:44:00	60	26.2	2.50E+04	27.5	25	40.5	26.9	26.7	26.5	26.2	25.3	25	
0	0	17Apr 09	3:45:00	60	35.4	2.08E+05	41	25.9	56.5	39.2	36.9	35.8	34.3	26.7	26	
0	0	17Apr 09	3:46:00	60	42.3	1.02E+06	45.7	36.7	59.2	44.5	43.4	43	42.2	38.1	36.7	
0	0	17Apr 09	3:47:00	60	39.2	4.99E+05	45.2	34.2	61.2	41.6	39.9	39.5	38.6	35.7	34.2	
0	0	17Apr 09	3:48:00	60	38.1	3.87E+05	43.8	33.8	57	40.4	38.8	38.2	37.2	35.2	33.8	
0	0	17Apr 09	3:49:00	60	41.6	8.67E+05	46.5	34.9	59.5	44.2	42.8	42.5	41.4	36.5	35.1	
0	0	17Apr 09	3:50:00	60	37.3	3.22E+05	44.4	30.3	59.5	41.8	38.5	37.6	33.8	30.9	30.3	
0	0	17Apr 09	3:51:00	60	37.9	3.70E+05	42.7	30.9	55.7	40.6	39.7	39.3	37.9	32.1	31	
0	0	17Apr 09	3:52:00	60	44.3	1.61E+06	48.9	34.2	62.4	47.2	45.7	45.1	43.8	37.4	34.7	
0	0	17Apr 09	3:53:00	60	34.1	1.54E+05	38.4	31.2	50.6	36	34.7	34.4	33.8	31.7	31.2	
0	0	17Apr 09	3:54:00	60	38.7	4.45E+05	45.3	31	59.7	42.6	40.7	39	36.9	31.6	31.1	
0	0	17Apr 09	3:55:00	60	34.6	1.73E+05	40.2	26.3	54.1	38.3	36.9	36.2	31.4	26.6	26.3	
0	0	17Apr 09	3:56:00	60	29	4.77E+04	33.3	26	46.6	32	30.2	29.2	27.3	26.2	26	
0	0	17Apr 09	3:57:00	60	29.2	4.99E+04	35.4	26	48.5	31.3	28.9	28.7	28.2	26.6	26.1	
0	0	17Apr 09	3:58:00	60	37.8	3.62E+05	41	31	54.4	40.3	39.5	39.2	37.8	32.3	31.1	
0	0	17Apr 09	3:59:00	60	38.4	4.15E+05	41.8	31.3	55.4	41.1	40.3	39.8	38.5	32.5	31.3	
0	0	17Apr 09	4:00:00	60	35.9	2.33E+05	42	27.9	56.4	38.8	37.4	36.8	35.7	28.3	27.9	
0	0	17Apr 09	4:01:00	60	31.9	9.29E+04	36.3	27.9	51.1	35.2	32.7	32.2	30.9	28.5	27.9	
0	0	17Apr 09	4:02:00	60	36.6	2.74E+05	40.9	28.8	54.2	38.6	37.6	37.3	36.5	30.8	29.1	
0	0	17Apr 09	4:03:00	60	34.2	1.58E+05	38.9	27	50.6	36.8	35.5	34.9	34.1	28.3	27.1	
0	0	17Apr 09	4:04:00	60	41.2	7.91E+05	44	37.8	57.2	43	41.9	41.7	41.1	38.6	37.8	
0	0	17Apr 09	4:05:00	60	36.4	2.62E+05	41.5	31.8	52.8	39.4	37.3	36.5	35.5	32.5	31.8	
0	0	17Apr 09	4:06:00	60	38.4	4.15E+05	42.2	33.5	54.9	41	39.8	39.2	37.8	35.1	33.5	
0	0	17Apr 09	4:07:00	60	41.1	7.73E+05	45.8	36	57.7	44	41.8	41.1	40.2	38.1	36.4	
0	0	17Apr 09	4:08:00	60	45.2	1.99E+06	51.5	39.2	63.6	48.6	45.8	45.1	43.6	40.7	39.2	
0	0	17Apr 09	4:09:00	60	46.1	2.44E+06	50.2	40.9	62.6	48.8	47.8	47.3	45.6	42	40.9	
0	0	17Apr 09	4:10:00	60	40.5	6.73E+05	43.5	36.7	57.2	42.5	41.4	40.9	40.1	38.3	36.7	
0	0	17Apr 09	4:11:00	60	39.3	5.11E+05	44.3	33.5	59.5	42.1	40.6	39.9	38.7	34.9	33.5	
0	0	17Apr 09	4:12:00	60	39	4.77E+05	44.4	33	58	41.6	40	39.5	38.4	34.5	33.2	
0	0	17Apr 09	4:13:00	60	44.4	1.65E+06	47.9	40.8	74.2	45.8	45.3	45	44.3	42	41	
0	0	17Apr 09	4:14:00	60	47	3.01E+06	50.4	43.3	63.9	49	48.2	47.7	46.8	44.2	43.3	

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	17Apr 09	4:15:00	60	38.6	4.35E+05	43.3	34.3	56	41.6	40.3	39.1	37	35.1	34.3
0	0	17Apr 09	4:16:00	60	40.5	6.73E+05	47.4	35.2	60.4	43.1	41.4	41	39.5	36.3	35.2
0	0	17Apr 09	4:17:00	60	43.5	1.34E+06	50.5	36.7	63.2	47.7	44.4	43.4	41.5	37.7	36.7
0	0	17Apr 09	4:18:00	60	46	2.39E+06	53.9	37.5	69.6	51.5	46.1	43.5	40.6	38.2	37.5
0	0	17Apr 09	4:19:00	60	33.6	1.37E+05	41.8	29.7	52.1	37.2	32.7	31.9	31.3	30.2	29.7
0	0	17Apr 09	4:20:00	60	40.6	6.89E+05	50.2	29.3	63.2	45.7	38.4	36.5	35.1	30.4	29.3
0	0	17Apr 09	4:21:00	60	42.3	1.02E+06	48.6	32.8	62.6	45.8	43.7	42.6	40.1	36.7	33.4
0	0	17Apr 09	4:22:00	60	40.4	6.58E+05	50.1	29.6	63.6	45.4	41.6	39.3	32.2	30.1	29.6
0	0	17Apr 09	4:23:00	60	45.9	2.33E+06	52.4	38.4	66	49.2	47.3	46.5	43.8	39.5	38.4
0	0	17Apr 09	4:24:00	60	48.4	4.15E+06	54.8	36.5	68.6	52.1	50.7	50	46.9	38.4	36.5
0	0	17Apr 09	4:25:00	60	48.6	4.35E+06	55.4	35.5	66.5	52.4	50.3	48.9	46.4	37.8	35.9
0	0	17Apr 09	4:26:00	60	49.2	4.99E+06	55.8	33.6	69.2	53.3	51.7	51.2	41.4	34.7	33.6
0	0	17Apr 09	4:27:00	60	47.5	3.37E+06	52.1	41.4	64.9	51	49.1	47.6	45.9	42.2	41.4
0	0	17Apr 09	4:28:00	60	47.6	3.45E+06	55	40.6	68	51.1	48.7	48	45.6	41.5	40.6
0	0	17Apr 09	4:29:00	60	50.3	6.43E+06	54.6	38.9	67.1	53.6	52.7	51.9	49.3	42.2	39.9
0	0	17Apr 09	4:30:00	60	37.2	3.15E+05	44.4	29.4	58.2	41.5	38.1	36.9	34.3	30	29.4
0	0	17Apr 09	4:31:00	60	44	1.51E+06	48.8	35.5	62.1	47	45.5	45.1	43.1	38.3	35.6
0	0	17Apr 09	4:32:00	60	50.9	7.38E+06	55.5	43.5	67.6	53.9	52.7	52	49.8	44.3	43.5
0	0	17Apr 09	4:33:00	60	46.7	2.81E+06	57.1	31	68.1	50.7	44.1	42.8	39.8	32.7	31.9
0	0	17Apr 09	4:34:00	60	29.3	5.11E+04	33.6	25	46.7	31.5	30.5	30	29.1	25.7	25.1
0	0	17Apr 09	4:35:00	60	29.8	5.73E+04	34.5	25.5	47.2	33.4	31.1	29.9	28.1	26.2	25.5
0	0	17Apr 09	4:36:00	60	36.6	2.74E+05	39.3	33.1	51.2	38.5	37.6	37.3	36.5	34.2	33.2
0	0	17Apr 09	4:37:00	60	37.1	3.08E+05	44	32.5	57.5	39.1	38	37.6	36.4	33.4	32.5
0	0	17Apr 09	4:38:00	60	47	3.01E+06	54.4	37	66.4	51.1	47.7	47	45.6	40.4	37.4
0	0	17Apr 09	4:39:00	60	43.5	1.34E+06	51.8	39.8	64.5	45.7	43.6	43.1	42.1	40.7	40
0	0	17Apr 09	4:40:00	60	47.4	3.30E+06	51.6	43.1	64.9	50	48.8	47.9	46.7	43.9	43.1
0	0	17Apr 09	4:41:00	60	40.5	6.73E+05	46.4	35.8	60.5	44	41.4	40.6	39.2	36.4	35.8
0	0	17Apr 09	4:42:00	60	50.4	6.58E+06	56.1	42.8	68.5	54.4	51	50.5	49.1	44.6	43.1
0	0	17Apr 09	4:43:00	60	42.2	9.96E+05	47.4	36.1	60.6	45.3	43.8	42.8	41.2	37.2	36.1
0	0	17Apr 09	4:44:00	60	50.1	6.14E+06	55.5	39.1	66.6	53.5	52.1	51.3	49.2	41.4	40
0	0	17Apr 09	4:45:00	60	47.3	3.22E+06	53.8	39.8	65	52	48.7	48.1	43.8	40.7	39.8
0	0	17Apr 09	4:46:00	60	41.5	8.48E+05	44.1	38.1	57.1	43.6	42.7	42.2	41.2	39.2	38.2
0	0	17Apr 09	4:47:00	60	40.4	6.58E+05	46.9	34.9	61	43.6	41.3	40.7	39.3	36.2	35.1
0	0	17Apr 09	4:48:00	60	42.9	1.17E+06	47.5	38.3	60.8	44.8	43.9	43.4	42.5	40	38.6
0	0	17Apr 09	4:49:00	60	36	2.39E+05	41.6	29.8	56.3	40.2	36.7	36	34.3	31.1	29.8
0	0	17Apr 09	4:50:00	60	41.9	9.29E+05	45.3	35.9	58.7	44	43.2	42.7	41.7	37.5	36.1
0	0	17Apr 09	4:51:00	60	46.7	2.81E+06	52.5	39.4	65.5	49.7	48.5	47.7	45.5	41.1	39.4
0	0	17Apr 09	4:52:00	60	42.9	1.17E+06	48.9	39.4	62.8	45.6	43.8	42.7	41.7	39.9	39.4
0	0	17Apr 09	4:53:00	60	39.7	5.60E+05	46.8	29.3	60.2	44.3	40.2	39.1	36.5	30.8	29.3
0	0	17Apr 09	4:54:00	60	49.7	5.60E+06	53.9	42.6	65.7	52.5	51.2	50.6	49.4	44.5	43.1
0	0	17Apr 09	4:55:00	60	50.3	6.43E+06	55.9	43.8	68.3	54.3	52.5	50.7	46.9	44.6	43.8
0	0	17Apr 09	4:56:00	60	48.4	4.15E+06	55.1	41.8	68.8	52.4	49.9	48.4	45.7	42.6	41.8
0	0	17Apr 09	4:57:00	60	51.2	7.91E+06	55.3	45.5	69	53.7	52.3	51.8	51	47.4	45.6
0	0	17Apr 09	4:58:00	60	45.2	1.99E+06	50.3	37.6	63	47.7	46.6	46	44.7	39.5	37.6
0	0	17Apr 09	4:59:00	60	40.2	6.28E+05	48.6	33	60.3	44.4	40.6	38.9	36.7	34.1	33.1

Meas																
Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)	
0	0	17Apr 09	5:00:00	60	40.6	6.89E+05	47.1	32.9	61.5	45.6	40.9	40.4	38.4	34.1	33.1	
0	0	17Apr 09	5:01:00	60	39.4	5.23E+05	45	35	58.5	42.1	39.9	39.5	38.6	36.3	35.2	
0	0	17Apr 09	5:02:00	60	40.5	6.73E+05	43.5	36.4	57	42.7	41.9	41.4	40.1	37.9	36.4	
0	0	17Apr 09	5:03:00	60	39.5	5.35E+05	45.1	33.1	58.8	42.8	41.3	40.1	38.2	34.3	33.2	
0	0	17Apr 09	5:04:00	60	36.4	2.62E+05	42.8	28.6	55.3	40.7	38.3	37.1	33.4	29.6	28.6	
0	0	17Apr 09	5:05:00	60	37.1	3.08E+05	43.4	30.6	56.3	40.4	38.2	37.4	35.6	32.4	30.7	
0	0	17Apr 09	5:06:00	60	41	7.55E+05	44.6	35	57.8	42.8	41.8	41.5	40.9	37.3	35.2	
0	0	17Apr 09	5:07:00	60	39.1	4.88E+05	42.6	34.6	56.3	41.4	40.1	39.6	38.7	36.3	34.8	
0	0	17Apr 09	5:08:00	60	41.2	7.91E+05	46.8	38.5	61.2	42.9	41.7	41.4	40.8	39.1	38.5	
0	0	17Apr 09	5:09:00	60	43.9	1.47E+06	48.3	39	61	46.9	44.9	44.2	42.8	40.5	39.2	
0	0	17Apr 09	5:10:00	60	49.8	5.73E+06	59.3	38.5	72.5	53.6	50.4	46.7	43.2	40.8	38.6	
0	0	17Apr 09	5:11:00	60	45.1	1.94E+06	51.5	40.1	63.3	48.3	45.8	45.2	43.4	40.9	40.1	
0	0	17Apr 09	5:12:00	60	41.7	8.87E+05	44.4	37.1	59.7	43.9	42.8	42.5	41.8	38.1	37.1	
0	0	17Apr 09	5:13:00	60	41.4	8.28E+05	45.1	39.3	59.2	43.2	42	41.7	41.1	39.5	39.3	
0	0	17Apr 09	5:14:00	60	43.5	1.34E+06	47.8	39.4	62	45.8	44.6	44.1	42.8	40.2	39.4	
			sum	4.14E+04		1.59E+10	92.3	21.1	112.6	61.2	54.3	50.6	45.9	39.7	38.3 Average	
			min/ave	690	55.8		23.0	22.7	22.5	22.2	22.2	22.2	21.2	21.1 Min		
			Hours	11.5			86.1	77.3	73.1	66.5	66.5	66.5	58.1	56.8 Max		

Meas

Site	Number	Date	Time	Duration	Leq	Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)	
0	0	17Apr 09	15:46:10	829.6	47.6	4.77E+07	67.7	30.1	98.3	49.8	42.7	40.2	37.2	32.2	30.8
0	0	17Apr 09	16:00:00	900	44.9	2.78E+07	65.6	30.7	86.3	43.9	36.9	35.9	34.5	32	31
0	0	17Apr 09	16:15:00	900	43.8	2.16E+07	58.4	29.5	73.3	47.9	44.2	41.7	38.3	32.3	30.1
0	0	17Apr 09	16:30:00	900	55	2.85E+08	74.3	30.1	88.6	53.5	48.5	46.1	41.5	33	30.9
0	0	17Apr 09	16:45:00	900	35.3	3.05E+06	45.6	28.9	70.2	38.2	35.6	34.8	33.6	30.6	29.2
0	0	17Apr 09	17:00:00	900	45.3	3.05E+07	61.8	29.3	77.2	45	40.8	39.1	36.9	32.6	30.4
0	0	17Apr 09	17:15:00	900	39	7.15E+06	50	28.4	68.2	42.5	39.6	38.8	36.5	30.8	28.7
0	0	17Apr 09	17:30:00	900	54	2.26E+08	78.3	26.7	99.6	41.5	38.3	37.3	35.6	30.4	27.5
0	0	17Apr 09	17:45:00	900	58.2	5.95E+08	76.3	30.8	93.5	51.6	45.4	42.8	40.3	35.2	33
0	0	17Apr 09	18:00:00	900	44	2.26E+07	59.5	29	79.5	48.3	41.5	39.9	37.5	32.6	29.5
0	0	17Apr 09	18:15:00	900	50.8	1.08E+08	69.9	28.5	84.5	46.5	42	39.9	35.6	30.7	29
0	0	17Apr 09	18:30:00	900	48.3	6.08E+07	65.4	29.3	82.9	46.5	36.6	35.6	34.2	31.2	29.6
0	0	17Apr 09	18:45:00	900	52	1.43E+08	70.9	30.3	86.8	49.6	41.8	40	37.2	32.9	31
0	0	17Apr 09	19:00:00	900	52.6	1.64E+08	71.5	31.3	85.5	51.6	45.6	44.2	40.9	34.9	32.3
0	0	17Apr 09	19:15:00	900	59.5	8.02E+08	77.1	35.7	92.2	57.4	50.9	48.7	45.8	39.8	37.4
0	0	17Apr 09	19:30:00	900	54.4	2.48E+08	72.5	39.4	83.4	52.6	48.6	47.8	46.4	43	40.1
0	0	17Apr 09	19:45:00	900	47.3	4.83E+07	63.1	35.1	77.5	49.4	45.5	44.5	43	38.1	36.1
0	0	17Apr 09	20:00:00	900	49.4	7.84E+07	66.2	37.9	81.3	51.5	48.9	48	45.8	41.4	38.8
0	0	17Apr 09	20:15:00	900	47.7	5.30E+07	58.9	38.7	71	50.7	48.5	47.6	45.6	42.3	40.2
0	0	17Apr 09	20:30:00	900	44.8	2.72E+07	50.7	33.2	67.7	47.8	46.3	45.6	44.1	38.9	35.8
0	0	17Apr 09	20:45:00	900	46.6	4.11E+07	54	37	66.1	49.3	47.4	46.7	45.6	41.8	38.8
0	0	17Apr 09	21:00:00	900	47.3	4.83E+07	55.1	39.4	67.1	50.3	48.2	47.3	46.1	43.2	41.1
0	0	17Apr 09	21:15:00	900	49	7.15E+07	56.5	37.8	69.4	52.8	50.3	49.2	47.2	41.9	38.9
0	0	17Apr 09	21:30:00	900	48.9	6.99E+07	59.5	31.8	73	52.5	50	48.7	46.6	39.7	33.3
0	0	17Apr 09	21:45:00	900	47.3	4.83E+07	55.5	34.6	69.1	50.7	48.4	47.7	46.3	39.5	35.4
0	0	17Apr 09	22:00:00	900	46.8	4.31E+07	60.7	33.4	74.6	50.1	46.7	45.5	42.8	37.3	34.5
0	0	17Apr 09	22:15:00	900	44.5	2.54E+07	53.8	35.7	67	47.4	45.6	45	43.3	38.8	36.3
0	0	17Apr 09	22:30:00	900	43.7	2.11E+07	54.3	31.7	67.4	47.3	44.6	43.6	41.5	35	32.6
0	0	17Apr 09	22:45:00	900	43.1	1.84E+07	55.3	30.8	68.8	46.6	43.9	42.7	40.5	34.4	31.4
0	0	17Apr 09	23:00:00	900	42.8	1.71E+07	53.3	28.4	64.9	46.7	43.6	42.6	40.3	33.1	29.3
0	0	17Apr 09	23:15:00	900	43.5	2.01E+07	52.5	29.5	64.9	47.5	44.3	43.2	40.7	34.2	30.2
0	0	17Apr 09	23:30:00	900	44.4	2.48E+07	59	27	71.9	48.4	44.7	43.4	40.4	32.3	27.6
0	0	17Apr 09	23:45:00	900	44.8	2.72E+07	57.6	28.4	91.7	48.6	45.1	44	41.6	32.8	29.5
0	0	18Apr 09	0:00:00	900	43.1	1.84E+07	51.5	26.6	68.4	47.4	44.7	43.1	40.2	32.1	27.4
0	0	18Apr 09	0:15:00	900	35.3	3.05E+06	50.6	24.3	63.7	38.6	33.5	31.7	29.5	26.4	25.1
0	0	18Apr 09	0:30:00	900	40.9	1.11E+07	54.6	25.4	67.2	45.4	40.9	38.6	34.2	28.4	26.5
0	0	18Apr 09	0:45:00	900	26.6	4.11E+05	31.2	22.3	61	28.5	27.4	27	26.3	24	22.6
0	0	18Apr 09	1:00:00	900	37.9	5.55E+06	52.6	23.8	65.4	41.7	37.2	35.9	33.7	28.1	25.1
0	0	18Apr 09	1:15:00	900	37.8	5.42E+06	54.1	25.9	68.9	41.7	37.9	36.1	32.8	29.1	27.2
0	0	18Apr 09	1:30:00	900	36.3	3.84E+06	49.5	25.2	62.6	40.3	37.1	35.8	32.6	27.2	25.7
0	0	18Apr 09	1:45:00	900	32.8	1.71E+06	43.2	24.2	56.8	36.8	33.1	31.5	29.6	25.5	24.2
0	0	18Apr 09	2:00:00	900	33.6	2.06E+06	44.9	24.4	59.2	37.9	33.9	32.7	29.4	25.5	24.5
0	0	18Apr 09	2:15:00	900	38.2	5.95E+06	52.4	25.5	76	42.1	36.7	34.6	31.4	26.4	25.5
0	0	18Apr 09	2:30:00	900	38.2	5.95E+06	49.7	27	61.5	41.7	38.8	37.3	34.3	30.6	28.1
0	0	18Apr 09	2:45:00	900	37.2	4.72E+06	51.2	28.1	64.5	41.7	33.9	33.4	32.5	30.4	28.5

Meas

Site	Number	Date	Time	Duration	Leq	Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)	
0	0	18Apr 09	3:00:00	900	33.7	2.11E+06	43.5	27.5	58.8	36.3	33.8	33.2	31.7	29.3	28.2
0	0	18Apr 09	3:15:00	900	37.4	4.95E+06	51	28.1	63.5	40.5	33.7	32.7	31.6	29.4	28.3
0	0	18Apr 09	3:30:00	900	35.5	3.19E+06	46.5	27.5	68.7	39.7	33.1	31.7	30.6	28.6	27.5
0	0	18Apr 09	3:45:00	900	39.8	8.59E+06	55.3	26.7	70	42.6	33.2	31.1	30.2	28.5	27.2
0	0	18Apr 09	4:00:00	900	35.2	2.98E+06	47.2	26.4	60.4	38	35.1	34	32.1	28.5	26.5
0	0	18Apr 09	4:15:00	900	36.1	3.67E+06	53.2	26.7	68	36.5	32.9	31.9	30.8	28.1	27.1
0	0	18Apr 09	4:30:00	900	35.8	3.42E+06	48.9	25.4	62.7	39.5	34.5	32.8	30.9	27.6	26
0	0	18Apr 09	4:45:00	900	30	9.00E+05	36.8	25.4	52.1	32.9	30.7	29.9	28.9	27.1	26
0	0	18Apr 09	5:00:00	900	34.4	2.48E+06	44.8	25.5	58	39.1	34.1	32.1	30.5	27.4	26
0	0	18Apr 09	5:15:00	900	34.2	2.37E+06	44.2	25.4	57.6	37.9	34.4	33	31	27.5	25.6
0	0	18Apr 09	5:30:00	900	34.9	2.78E+06	44.1	25.8	63.6	38.5	36.1	35.1	32.9	28.4	26.4
0	0	18Apr 09	5:45:00	900	38.7	6.67E+06	48.1	29.1	70.9	42.2	39.8	38.5	36.9	33.1	30.1
0	0	18Apr 09	6:00:00	900	37.5	5.06E+06	45.8	29.4	67.6	40.4	38.7	37.9	36.5	33	30.5
0	0	18Apr 09	6:15:00	900	38.3	6.08E+06	46	32.1	72.7	41	39.1	38.5	37.4	34.7	33.1
0	0	18Apr 09	6:30:00	900	42.6	1.64E+07	60	32	74.2	43.8	40.8	39.6	38.1	35.6	32.8
0	0	18Apr 09	6:45:00	900	41.7	1.33E+07	49.4	34.7	73.7	44.5	42.8	42	40.8	37.4	36.1
0	0	18Apr 09	7:00:00	900	43.1	1.84E+07	59.4	36.4	75.9	45	42.8	42	40.9	38.2	37.1
0	0	18Apr 09	7:15:00	900	42.4	1.56E+07	49.7	35.4	63.1	44.8	43.2	42.5	41.4	38.7	36.6
0	0	18Apr 09	7:30:00	900	43.6	2.06E+07	54.1	35.5	67.6	45.7	43.8	43.1	41.9	38.7	36.5
0	0	18Apr 09	7:45:00	900	61.4	1.24E+09	86.5	37.4	101	49.9	46.9	45.7	43.6	40	38.1
0	0	18Apr 09	8:00:00	900	48.5	6.37E+07	62.4	35.8	79.7	51.8	45.7	44.6	42.3	38.4	36.8
0	0	18Apr 09	8:15:00	900	44.2	2.37E+07	56.8	34.2	71.7	47.4	45.4	44.6	42.5	37.1	34.8
0	0	18Apr 09	8:30:00	900	44	2.26E+07	57.2	32.6	80.1	47.2	44.5	43.4	41.6	36.1	33.4
0	0	18Apr 09	8:45:00	900	60	9.00E+08	80.8	33.4	100.8	60.2	54.4	50.9	45.8	35.7	34
0	0	18Apr 09	9:00:00	900	66.9	4.41E+09	87.2	34	102.9	56.9	46.7	45.4	43.1	37.2	34.5
0	0	18Apr 09	9:15:00	900	41.7	1.33E+07	52.6	34.7	65.6	44.7	43	42.2	40.6	37.3	35.3
0	0	18Apr 09	9:30:00	900	49.2	7.49E+07	66	33.6	86.4	51.9	50.3	49.1	41.6	35.8	34.2
0	0	18Apr 09	9:45:00	900	61.1	1.16E+09	78.9	31.2	105.3	59.6	48.3	44.9	38.6	33.3	32
0	0	18Apr 09	10:00:00	900	67.7	5.30E+09	86.3	31.5	110.1	68	57.4	53.2	45.8	34.1	32.1
0	0	18Apr 09	10:15:00	900	63.6	2.06E+09	82.9	29.2	105.7	60.7	50	46.3	43.2	32.7	30.6
0	0	18Apr 09	10:30:00	900	58.9	6.99E+08	81	31.4	102.4	56.1	49.3	46.4	40.7	34.2	32.3
0	0	18Apr 09	10:45:00	900	57.9	5.55E+08	78.9	31.1	102	52.6	46.5	44.9	41.1	34.3	32.1
0	0	18Apr 09	11:00:00	900	62.7	1.68E+09	84.9	27.9	105.7	51.1	40.7	37.4	34.9	30	28.3
0	0	18Apr 09	11:15:00	900	62.5	1.60E+09	84	29.4	105.5	52.2	44	37.9	34.8	30.7	29.4
0	0	18Apr 09	11:30:00	900	40.3	9.64E+06	55.8	27.9	68.6	43.5	39.1	36.8	34.1	29.7	28.4
0	0	18Apr 09	11:45:00	900	66	3.58E+09	89.1	29.1	108.2	57.9	48.9	45.7	41.5	32	29.7
0	0	18Apr 09	12:00:00	900	68.2	5.95E+09	92.8	28	117.1	53.2	41.4	38.5	34.7	29.9	28.4
0	0	18Apr 09	12:15:00	900	58.6	6.52E+08	81.6	27.8	101.8	48.1	43.9	42.4	39.1	30.3	28.3
0	0	18Apr 09	12:30:00	900	52.7	1.68E+08	74.8	29.4	90.3	52.5	45.6	43.4	39.2	32.5	30.2
0	0	18Apr 09	12:45:00	900	52.4	1.56E+08	73.7	28.9	90.7	51.5	41.4	39.4	35.9	31	29.4
0	0	18Apr 09	13:00:00	900	60.1	9.21E+08	83.6	29.9	103.3	52.4	44.1	39.3	36.1	32.3	30.3
0	0	18Apr 09	13:15:00	900	48.4	6.23E+07	65.9	26.6	80.7	48	40.5	38.6	35.8	30.5	27.8
0	0	18Apr 09	13:30:00	900	57.7	5.30E+08	79.3	26.7	95.9	49.8	39.5	38	35	29.5	27.9
0	0	18Apr 09	13:45:00	900	49.4	7.84E+07	68.2	27.9	81.9	45.8	39.2	38.1	36	31.6	29.1
0	0	18Apr 09	14:00:00	900	61	1.13E+09	82.1	29.8	101.6	57.2	47.1	43.6	40.6	32.9	30.4

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	18Apr 09	14:15:00	900	58.9	6.99E+08	80.8	28	95.3	55.8	49.1	47.1	42.5	33.1	29.1
0	0	18Apr 09	14:30:00	900	47.8	5.42E+07	65.1	29.4	83.7	50.5	46	44.1	39.5	32.5	30.5
0	0	18Apr 09	14:45:00	900	64.5	2.54E+09	87.3	29.9	108.7	63.1	55.7	53.9	49.3	37.1	31.4
0	0	18Apr 09	15:00:00	900	45.4	3.12E+07	60.6	29.5	77.3	49.9	43.3	41.4	38.3	32.4	30.2
0	0	18Apr 09	15:15:00	900	59	7.15E+08	78.9	31.8	94.5	59.3	50.6	48	43.2	35.3	32.5
0	0	18Apr 09	15:30:00	900	48.6	6.52E+07	65.9	30	78.4	51.4	47.6	45.8	42.9	35.1	31.1
0	0	18Apr 09	15:45:00	900	60.2	9.42E+08	80.4	31	98.6	60.1	53.8	52.2	48.9	37.8	32
0	0	18Apr 09	16:00:00	900	48.9	6.99E+07	65.7	31.5	79.7	52.5	47	44.1	39.2	33.7	32.1
0	0	18Apr 09	16:15:00	900	49.6	8.21E+07	66	30.9	85.3	53.7	47.8	45.1	38.4	33.2	31.2
0	0	18Apr 09	16:30:00	900	50.6	1.03E+08	71.2	29.7	85.2	52	42.4	40.1	37	32.2	30.4
0	0	18Apr 09	16:45:00	900	43.3	1.92E+07	56.8	29.8	70.8	45.7	41.9	40.9	39.1	33.2	31
0	0	18Apr 09	17:00:00	900	59.2	7.49E+08	84.3	30.4	105.8	49.6	43.7	41.6	37.8	33.1	31.2
0	0	18Apr 09	17:15:00	900	52.7	1.68E+08	73.5	29.9	87.3	52.7	44.8	42.3	38.7	32.9	30.7
0	0	18Apr 09	17:30:00	900	50.8	1.08E+08	74.7	29.7	88.9	50.6	42.8	39.8	37.4	32.6	30.5
0	0	18Apr 09	17:45:00	900	56.4	3.93E+08	77.7	27.4	92.3	52.2	44.6	41.8	39	32.6	29.3
0	0	18Apr 09	18:00:00	900	52.4	1.56E+08	71.3	30.2	85.3	49.2	42.6	40.7	37.9	33	30.6
0	0	18Apr 09	18:15:00	900	42.5	1.60E+07	57.9	27.3	76.9	45.5	41.7	40.8	37.6	30.4	28.1
0	0	18Apr 09	18:30:00	900	46.3	3.84E+07	61.8	32.2	82.2	49.6	45	43.1	40.1	35.5	33.6
0	0	18Apr 09	18:45:00	900	61.9	1.39E+09	82	33.2	103.4	58.5	50.1	46.4	43.7	37.5	35.1
0	0	18Apr 09	19:00:00	900	57.5	5.06E+08	79.4	35.1	96.1	50	45.5	44.2	42.1	38.3	35.8
0	0	18Apr 09	19:15:00	900	44.5	2.54E+07	58.6	32.9	75.9	46.1	42.8	42	40.8	37.5	34.5
0	0	18Apr 09	19:30:00	900	56	3.58E+08	79.7	33.9	99	49.8	46.7	45.7	43.7	37.2	34.6
0	0	18Apr 09	19:45:00	900	47.4	4.95E+07	62	34.4	81.3	50.3	46.4	45.1	42.4	37.3	35.2
0	0	18Apr 09	20:00:00	900	49.6	8.21E+07	64.2	37.5	81.1	53.4	48.8	47.6	45.6	41.4	38.7
0	0	18Apr 09	20:15:00	900	47.7	5.30E+07	64.3	35.2	79.1	46.9	42.9	42.1	40.4	38	36.1
0	0	18Apr 09	20:30:00	900	39.7	8.40E+06	53.1	35.3	64.5	41.5	40.3	39.8	39	36.8	35.4
0	0	18Apr 09	20:45:00	900	38.7	6.67E+06	44.2	33.6	57.4	40.5	39.5	39.1	38.2	36.2	35.1
0	0	18Apr 09	21:00:00	900	37.7	5.30E+06	47.5	34.3	74.7	39.1	38.4	38	37.4	35.8	34.7
0	0	18Apr 09	21:15:00	900	39.8	8.59E+06	44.1	35.7	58.4	41	40.4	40.1	39.6	38	36.2
0	0	18Apr 09	21:30:00	900	39.3	7.66E+06	50	29.8	64.2	41.8	39.9	38.9	37.9	34.3	30.3
0	0	18Apr 09	21:45:00	900	37.4	4.95E+06	43.5	31.3	56.7	39.7	38	37.6	36.8	33.6	32
0	0	18Apr 09	22:00:00	900	38.5	6.37E+06	51	30.1	65.6	41.2	39	38.1	36.5	32.9	31
0	0	18Apr 09	22:15:00	900	47.7	5.30E+07	63.5	34.7	99.7	46.4	42.3	41.5	40.3	37.4	35.7
0	0	18Apr 09	22:30:00	900	43.3	1.92E+07	51.8	34.3	72.1	46.4	44.2	43.6	42.2	37.4	35.3
0	0	18Apr 09	22:45:00	900	47.4	4.95E+07	67.6	35.8	86.5	45.6	43.4	42.7	41.3	38.1	36.3
0	0	18Apr 09	23:00:00	900	46	3.58E+07	64.4	34.6	82	45.4	43.5	42.9	41.7	38.2	35.3
0	0	18Apr 09	23:15:00	900	45.5	3.19E+07	62.7	33.4	76.7	46.7	44.5	43.9	42.5	36.4	34
0	0	18Apr 09	23:30:00	900	38.2	5.95E+06	52.3	28.9	67.4	41.9	37.9	36.6	34.9	31.8	29.4
0	0	18Apr 09	23:45:00	900	39.5	8.02E+06	57.9	29.4	72	37.8	35	34.5	33	30.5	29.4
0	0	19Apr 09	0:00:00	900	39.4	7.84E+06	55.7	29.6	73.9	42.8	38.7	37	34.4	30.8	30
0	0	19Apr 09	0:15:00	900	34.1	2.31E+06	42.3	29.1	56.1	36.3	34.5	33.9	33	31.4	30.1
0	0	19Apr 09	0:30:00	900	35.8	3.42E+06	53.4	26.5	79.3	38	35.8	35.1	34	31.3	27.4
0	0	19Apr 09	0:45:00	900	35	2.85E+06	48.7	27.3	64	36.7	34.8	34.2	33.4	31.2	28.8
0	0	19Apr 09	1:00:00	900	31.5	1.27E+06	44.7	25.7	56.9	33.3	31.4	30.9	29.9	27.2	26.1
0	0	19Apr 09	1:15:00	900	31.5	1.27E+06	48.5	27	63.2	33	30.7	30	29.5	28.2	27.3

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	19Apr 09	1:30:00	900	32.9	1.75E+06	46.3	23.3	59.8	36.3	32.2	31.1	29.5	26.3	23.9
0	0	19Apr 09	1:45:00	900	41.7	1.33E+07	55.2	24.7	67.8	46.3	41.2	39.2	32.7	27.4	25.1
0	0	19Apr 09	2:00:00	900	30.7	1.06E+06	44	23	60.1	33.9	31.6	29.4	26.4	24.6	24
0	0	19Apr 09	2:15:00	900	30.6	1.03E+06	45.3	22.9	60.6	32.4	29.7	28.6	26.9	24.7	23.2
0	0	19Apr 09	2:30:00	900	30.7	1.06E+06	45.5	22.5	71.9	33	29.4	28.3	26	23.4	22.5
0	0	19Apr 09	2:45:00	900	34.7	2.66E+06	62.4	24	98.3	33.9	32.2	31.3	29.2	25.6	24.5
0	0	19Apr 09	3:00:00	900	32.1	1.46E+06	44	28.1	57.7	33.8	32.1	31.7	31.1	29.6	28.5
0	0	19Apr 09	3:15:00	900	31.1	1.16E+06	39.5	27.4	51.3	32.5	31.6	31.3	30.8	29.2	27.8
0	0	19Apr 09	3:30:00	900	31.4	1.24E+06	44.9	26.7	58.9	33.2	31	30.6	29.8	28	27
0	0	19Apr 09	3:45:00	900	30.4	9.87E+05	41.7	24.1	53.1	32.9	30.4	29.8	29	25.6	24.2
0	0	19Apr 09	4:00:00	900	28.2	5.95E+05	41.2	24	54.3	28.8	27.8	27.5	26.7	24.5	24
0	0	19Apr 09	4:15:00	900	30.3	9.64E+05	42.7	23.9	57.5	33.9	30.7	29.1	27	25.1	24.1
0	0	19Apr 09	4:30:00	900	32	1.43E+06	41.4	24.2	55.1	35.5	32.8	31.7	29.9	26.2	24.9
0	0	19Apr 09	4:45:00	900	28.5	6.37E+05	40	23.4	55.1	30.5	26.6	25.9	25.3	24.1	23.4
0	0	19Apr 09	5:00:00	900	29.6	8.21E+05	41.2	23.4	53.9	33.3	28.7	27.7	26.7	24.7	23.6
0	0	19Apr 09	5:15:00	900	34.3	2.42E+06	48.2	25.2	62.3	38.3	30.9	29.4	27.8	26.2	25.2
0	0	19Apr 09	5:30:00	900	36.5	4.02E+06	51.1	25.1	72.9	39.8	34.3	32.8	30.2	26.6	25.3
0	0	19Apr 09	5:45:00	900	39.5	8.02E+06	50.5	28.2	65.3	43.3	39.7	38.7	36.9	31.6	28.8
0	0	19Apr 09	6:00:00	900	38.1	5.81E+06	49.3	28.2	65.3	41.4	38.9	37.9	35.8	30.5	28.7
0	0	19Apr 09	6:15:00	900	39.5	8.02E+06	51.7	28.3	72.3	42.5	39.9	38.9	36.9	31.3	29.1
0	0	19Apr 09	6:30:00	900	38.2	5.95E+06	49.2	28.2	65.4	42.1	38.8	37.7	35.8	31.4	29.1
0	0	19Apr 09	6:45:00	900	43.5	2.01E+07	55.8	29.5	72.1	47.8	44.7	42.3	38.3	32.7	30
0	0	19Apr 09	7:00:00	900	46.4	3.93E+07	59.5	32.3	78.3	49.8	47.4	46.3	42.3	35.4	33.5
0	0	19Apr 09	7:15:00	900	42.2	1.49E+07	53.5	31.8	69.3	45.6	42.8	41.7	39.7	35.4	32.6
0	0	19Apr 09	7:30:00	900	45.5	3.19E+07	57	36.9	71	48.3	46	45.2	43.9	40.5	38.2
0	0	19Apr 09	7:45:00	900	42.7	1.68E+07	50.5	37.2	65	44.9	43.5	42.9	42	39.6	38.1
0	0	19Apr 09	8:00:00	900	44.1	2.31E+07	55.4	37.3	70.6	46.5	44.5	43.7	42.5	39.5	38
0	0	19Apr 09	8:15:00	900	42.3	1.53E+07	49.9	34.3	80.3	45	43.5	42.7	41.4	38.2	36
0	0	19Apr 09	8:30:00	900	42.4	1.56E+07	52.4	34.4	70.2	45.3	43.4	42.6	40.9	37.5	35.5
0	0	19Apr 09	8:45:00	900	42.4	1.56E+07	53	33.8	79.9	45.5	43.2	42.3	40.5	36.4	34.3
0	0	19Apr 09	9:00:00	900	40.8	1.08E+07	52	31	73.6	44	41.3	40.2	38.5	34.7	32.2
0	0	19Apr 09	9:15:00	900	40.2	9.42E+06	49.9	32.1	64.4	42.8	40.7	39.9	38.8	35.1	32.9
0	0	19Apr 09	9:30:00	900	37.6	5.18E+06	47.4	31.8	67.2	40.2	38.1	37.5	36.5	34.2	32.8
0	0	19Apr 09	9:45:00	900	39.1	7.32E+06	47.7	32.6	73.5	41.9	40.2	39.4	38	35.1	33
0	0	19Apr 09	10:00:00	900	40.7	1.06E+07	53.4	30.9	72.9	44.7	40.8	39	36.4	33.2	31.7
0	0	19Apr 09	10:15:00	900	38.9	6.99E+06	53.2	29.4	71.6	42.6	37.9	35.5	33.8	31.6	30.3
0	0	19Apr 09	10:30:00	900	40.7	1.06E+07	51.7	28.8	71.6	45.8	40.5	38.8	36	31.5	29.5
0	0	19Apr 09	10:45:00	900	37.6	5.18E+06	54.9	27.8	66.1	38.5	34.9	33.9	32.5	30	28.3
0	0	19Apr 09	11:00:00	900	37	4.51E+06	49	28.5	65.8	40.7	36.6	35.2	32.9	30.2	28.6
0	0	19Apr 09	11:15:00	900	38.3	6.08E+06	53.2	28.7	68.4	41.4	36.6	35.2	33.5	30.3	29
0	0	19Apr 09	11:30:00	900	44.8	2.72E+07	64.6	29.6	79.4	46.6	42.2	41	38.8	32.6	30.2
0	0	19Apr 09	11:45:00	900	42.5	1.60E+07	54	32.3	71.1	45.5	43.1	42.2	40.1	36.1	33.3
0	0	19Apr 09	12:00:00	900	54	2.26E+08	77.1	33.1	95	50.5	44.7	43.3	40.6	36	33.8
0	0	19Apr 09	12:15:00	900	43.4	1.97E+07	64.5	31.6	92.3	45.6	42.9	41.8	40.3	35.8	33
0	0	19Apr 09	12:30:00	900	51	1.13E+08	69.1	33.2	84.8	51.7	47.3	46.1	43.8	38.2	35.1

Meas

Site	Number	Date	Time	Duration	Leq	Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	19Apr 09	12:45:00	900	62.6 1.64E+09	81.9	32.4	102.1	57.1	48.1	46	43.4	37.6	33.7
0	0	19Apr 09	13:00:00	900	58 5.68E+08	77.9	32.7	94.1	52.1	47	45.6	43.3	38.2	35
0	0	19Apr 09	13:15:00	900	48.6 6.52E+07	65.4	30.6	78.8	48.4	45.7	44.5	42.3	36.1	32.8
0	0	19Apr 09	13:30:00	900	48.9 6.99E+07	66.6	42.1	84.6	50.3	46.8	46.2	45.5	43.7	42.9
0	0	19Apr 09	13:45:00	900	61.4 1.24E+09	84.9	26.8	101.5	55.4	49.3	47.5	44.6	36.4	27.5
0	0	19Apr 09	14:00:00	900	46.8 4.31E+07	65.2	32.4	98.6	48.8	45	43.7	41.1	35.7	33.6
0	0	19Apr 09	14:15:00	900	47.1 4.62E+07	62	35.9	82.1	50.9	46.8	45.6	43.1	39	37.1
0	0	19Apr 09	14:30:00	900	51.1 1.16E+08	68.1	32.9	81.7	52.5	44.9	43.4	41	37	34.5
0	0	19Apr 09	14:45:00	900	59.8 8.59E+08	77	32.5	92.9	60.8	52.3	50.1	45.6	38.8	35.5
0	0	19Apr 09	15:00:00	900	54.9 2.78E+08	76.8	31.6	96.9	53.7	47.9	45.7	42	35.4	33
0	0	19Apr 09	15:15:00	900	58.6 6.52E+08	82.1	34.1	101.7	52.1	44	42.6	40.5	35.7	34.2
0	0	19Apr 09	15:30:00	900	63.1 1.84E+09	86.8	35.8	104.2	58.5	48.4	46.6	44	38.1	36.3
0	0	19Apr 09	15:45:00	900	65 2.85E+09	86.2	35.1	105.7	64.1	54	51.8	48.5	40.2	36.7
0	0	19Apr 09	16:00:00	900	56.3 3.84E+08	79.3	33	101.1	49.1	43.8	42.4	40.3	36.8	35.1
0	0	19Apr 09	16:15:00	900	48.2 5.95E+07	63.8	32.7	86.9	51.6	46.3	44.4	41.6	37.8	35.6
0	0	19Apr 09	16:30:00	900	52.3 1.53E+08	75.1	33.3	88.3	50.7	46.2	45.1	43.6	37.4	34.4
0	0	19Apr 09	16:45:00	900	51.6 1.30E+08	67.9	34.9	85	55.7	47.9	45.8	42.7	37.2	35.3
0	0	19Apr 09	17:00:00	900	50.6 1.03E+08	66.1	31.6	82.8	53.2	49.8	48.6	46.3	37.3	32.9
0	0	19Apr 09	17:15:00	900	55.8 3.42E+08	74.2	33.9	92	57.9	52.7	51.6	50	38.6	34.8
0	0	19Apr 09	17:30:00	900	64.1 2.31E+09	89.8	29.9	105.5	51.2	46	44.2	41.6	34.6	30.8
0	0	19Apr 09	17:45:00	900	53.4 1.97E+08	71.4	33.2	87.7	57.4	51.4	48.5	43.7	36.6	34.1
0	0	19Apr 09	18:00:00	900	52.3 1.53E+08	71.3	35.6	84.4	51.4	46.2	44.9	42.3	38.4	36.7
0	0	19Apr 09	18:15:00	900	63.5 2.01E+09	87.1	35.9	109.1	58.9	54.2	52.4	49	41	37.1
0	0	19Apr 09	18:30:00	900	64.3 2.42E+09	83.3	39.2	102.3	66.8	57.2	54.8	52.1	44.3	40.1
0	0	19Apr 09	18:45:00	900	61.6 1.30E+09	74.7	40.6	98.7	66.3	59.5	57.5	54.2	46.5	42.9
0	0	19Apr 09	19:00:00	900	73.6 2.06E+10	98.6	37	119.8	65.8	58.7	56.8	53.6	43.1	38.4
0	0	19Apr 09	19:15:00	900	51.8 1.36E+08	70.9	38.3	94.3	53.5	49.6	48.5	46.8	42.5	39.9
0	0	19Apr 09	19:30:00	900	64.2 2.37E+09	85	40.2	102.9	61.9	56.4	54.7	51.8	44.8	41.7
0	0	19Apr 09	19:45:00	900	65.1 2.91E+09	89.4	40.2	106.5	55.1	50.4	49.4	46.8	42.8	41.2
0	0	19Apr 09	20:00:00	900	45.7 3.34E+07	60.9	39.4	81.2	47	44.9	44.4	43.6	41.2	40
0	0	19Apr 09	20:15:00	900	43.8 2.16E+07	51.9	38.6	66.8	46.1	44.5	43.9	42.8	40.5	39.2
0	0	19Apr 09	20:30:00	900	42.9 1.75E+07	51.1	36.8	69.9	45.2	43.4	42.8	41.9	39.9	38.1
0	0	19Apr 09	20:45:00	900	41.5 1.27E+07	48.9	37.9	63.3	43.3	42.4	42	41.2	39.1	38.1
0	0	19Apr 09	21:00:00	900	42.6 1.64E+07	47	36.1	62.8	44.1	43.5	43.2	42.5	40.2	38.9
0	0	19Apr 09	21:15:00	900	40.6 1.03E+07	44.6	37.1	59.8	42.3	41.4	40.9	40.2	38.5	37.8
0	0	19Apr 09	21:30:00	900	41.5 1.27E+07	48.1	37.3	61.9	42.9	42.2	41.9	41.4	39.3	37.4
0	0	19Apr 09	21:45:00	900	41.6 1.30E+07	46.2	33	61	43.7	42.7	42.4	41.7	37.3	33.8
0	0	19Apr 09	22:00:00	900	41.5 1.27E+07	65.6	34.3	101.7	41.9	41	40.8	40.3	37.6	34.7
0	0	19Apr 09	22:15:00	900	43.1 1.84E+07	50.5	35.8	63.8	44.7	43.8	43.5	42.9	41	38.6
0	0	19Apr 09	22:30:00	900	41.8 1.36E+07	50	37	62.6	43.4	42.6	42.3	41.6	39.1	37.7
0	0	19Apr 09	22:45:00	900	41 1.13E+07	47.8	36.5	61.1	42.8	41.8	41.5	40.8	38.8	37.2
0	0	19Apr 09	23:00:00	900	42.4 1.56E+07	51.7	36.3	74.8	44.5	42.7	42	41.3	39.5	38.1
0	0	19Apr 09	23:15:00	900	41.2 1.19E+07	57.7	37.9	91.7	42.6	41.6	41.1	40.6	39.2	38.2
0	0	19Apr 09	23:30:00	900	41.2 1.19E+07	50.8	36.7	62.4	42.8	41.6	41	40.4	39	37.2
0	0	19Apr 09	23:45:00	900	42.8 1.71E+07	45.3	36.9	60.6	44	43.6	43.4	43	41.1	37.8

Meas

Site	Number	Date	Time	Duration	Leq		Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)
0	0	20Apr 09	0:00:00	900	42.5	1.60E+07	45.8	39.5	59.6	43.6	42.9	42.8	42.5	41.3	40.3
0	0	20Apr 09	0:15:00	900	41.3	1.21E+07	43.9	35.9	57.5	42.2	41.8	41.7	41.4	40.3	38.2
0	0	20Apr 09	0:30:00	900	39.7	8.40E+06	43.1	31	57.5	41.4	40.7	40.4	39.9	35.3	32.2
0	0	20Apr 09	0:45:00	900	37.6	5.18E+06	42	28.7	57.5	39	38.5	38.3	37.6	34.1	30.7
0	0	20Apr 09	1:00:00	900	38.2	5.95E+06	44.6	29.6	60	39.5	38.8	38.6	38.2	35.4	31
0	0	20Apr 09	1:15:00	900	38.6	6.52E+06	54.9	28.4	67.1	39.5	38.5	38.1	37.3	30.4	29.1
0	0	20Apr 09	1:30:00	900	39.2	7.49E+06	52	32.2	65.2	39.9	39.5	39.2	38.8	37.3	35.2
0	0	20Apr 09	1:45:00	900	36.1	3.67E+06	42.2	27.2	58.5	38.8	38	37.5	35.7	29	28
0	0	20Apr 09	2:00:00	900	33.6	2.06E+06	48.5	25.9	61.7	34.4	33.1	32.5	31.2	27.7	26.4
0	0	20Apr 09	2:15:00	900	34.6	2.60E+06	48.6	25.3	61.9	35.4	33.2	32.6	31.4	29	27
0	0	20Apr 09	2:30:00	900	35.9	3.50E+06	43.5	27.6	57.7	38.5	36.5	35.8	34.9	33.1	29.5
0	0	20Apr 09	2:45:00	900	38.5	6.37E+06	48.1	31.1	62.6	41.2	38.3	37.8	37.2	34.1	32.4
0	0	20Apr 09	3:00:00	900	36	3.58E+06	41.5	30.7	59	37.3	36.5	36.2	35.7	34.1	32.3
0	0	20Apr 09	3:15:00	900	36.1	3.67E+06	46.8	28.3	62.8	38.9	36.7	35.9	34.7	32	29.6
0	0	20Apr 09	3:30:00	900	36.9	4.41E+06	48.8	26.3	61.8	40.3	36.7	35.9	34.6	31	27.5
0	0	20Apr 09	3:45:00	900	35.5	3.19E+06	44.8	26.2	58.8	38.3	36.1	35.5	34.3	31	28.5
0	0	20Apr 09	4:00:00	900	34.5	2.54E+06	41.7	27.8	57.1	36.9	35.5	34.9	33.9	30.8	29
0	0	20Apr 09	4:15:00	900	35.4	3.12E+06	44.1	29.1	59.9	38.1	36.1	35.4	34	31.5	30.1
0	0	20Apr 09	4:30:00	900	34.6	2.60E+06	41.9	29.4	55.8	36.8	35.2	34.6	33.7	31.7	30.5
0	0	20Apr 09	4:45:00	900	36.1	3.67E+06	43.2	30.4	57.3	38.2	36.8	36.4	35.5	32.9	31.4
0	0	20Apr 09	5:00:00	900	36.2	3.75E+06	41.2	32.4	55.8	37.9	36.8	36.5	35.8	34.2	33.1
0	0	20Apr 09	5:15:00	900	37.2	4.72E+06	43.7	31.8	70.4	39.5	38	37.5	36.6	34	32.1
0	0	20Apr 09	5:30:00	900	38.9	6.99E+06	45.1	31.7	57.8	41.4	40.1	39.5	38.2	34.7	32.5
0	0	20Apr 09	5:45:00	900	39.3	7.66E+06	47.8	32.2	70.1	42.3	40.3	39.3	37.8	33.8	32.4
0	0	20Apr 09	6:00:00	900	39.8	8.59E+06	47.2	33.7	64.6	42.5	40.7	40.1	39.1	35.6	34.1
0	0	20Apr 09	6:15:00	900	43.6	2.06E+07	49.2	36.8	71.6	46.4	44.5	43.8	42.7	40.3	38
0	0	20Apr 09	6:30:00	900	45.1	2.91E+07	53.8	38.2	76.9	48.2	46.5	45.5	43.8	40.9	38.8
0	0	20Apr 09	6:45:00	900	41.2	1.19E+07	47.8	35.4	73.2	43.5	42.2	41.7	40.7	37.6	36.1
0	0	20Apr 09	7:00:00	900	43.7	2.11E+07	50.9	36.5	71.8	46.8	44.5	43.7	42.4	39.8	37.2
0	0	20Apr 09	7:15:00	900	46.7	4.21E+07	56.4	37.6	69.8	50.3	47	45.6	43.9	40.6	38.5
0	0	20Apr 09	7:30:00	900	44.7	2.66E+07	56	38.8	78.2	47	45	44.4	43.4	40.8	39.4
0	0	20Apr 09	7:45:00	900	45.8	3.42E+07	55.3	39.7	76.2	48.1	46.6	46	45	42.5	40.3
0	0	20Apr 09	8:00:00	900	44.2	2.37E+07	51.6	37.7	73.6	46.8	45.1	44.6	43.5	40.7	38.5
0	0	20Apr 09	8:15:00	900	44.5	2.54E+07	54.7	35.2	75.7	47.8	45.5	44.5	42.5	38.3	36.1
0	0	20Apr 09	8:30:00	900	44.5	2.54E+07	53.2	36.2	68.9	48.5	44.7	43.8	41.9	38.3	36.6
0	0	20Apr 09	8:45:00	900	62.5	1.60E+09	85.5	36.7	103.7	47.6	44.3	43.6	42.1	38.8	37.3
0	0	20Apr 09	9:00:00	900	54.6	2.60E+08	73.9	34.3	91.1	53.5	43.1	41.8	40.1	36.5	35.1
0	0	20Apr 09	9:15:00	900	54.7	2.66E+08	73.3	32	99.9	55.4	43.2	41	38.4	34.2	33
0	0	20Apr 09	9:30:00	900	34.8	2.72E+06	45.2	30.6	63.4	36.5	35.3	34.9	34.3	32.3	31.1
0	0	20Apr 09	9:45:00	900	36.3	3.84E+06	45.4	29.4	66.1	39	37	36.2	34.9	31.8	30.1
0	0	20Apr 09	10:00:00	900	35.9	3.50E+06	46.9	28.7	63	38.9	37	36.3	34.9	30.9	29.1
0	0	20Apr 09	10:15:00	900	36.7	4.21E+06	64.9	28.7	100.2	35.2	33.5	32.9	31.9	30.2	29.2
0	0	20Apr 09	10:30:00	900	37.5	5.06E+06	50.2	28.1	63.1	40.9	36.3	35.4	33.9	30.5	28.5
0	0	20Apr 09	10:45:00	900	35.3	3.05E+06	47.4	28.2	68.2	37.5	35.6	34.9	34.2	30.3	28.8
0	0	20Apr 09	11:00:00	900	41.7	1.33E+07	66.8	28.9	102	42.8	36.5	35.4	33.1	30.3	29.2

Meas															
Site	Number	Date	Time	Duration	Leq	Lmax	Lmin	Peak	L(10)	L(25)	L(33)	L(50)	L(90)	L(99)	
0	0	20Apr 09	11:15:00	900	37.8	5.42E+06	56.1	28.6	61.5	40.6	37.6	36.4	35.2	31.2	29.5
0	0	20Apr 09	11:30:00	900	33.3	1.92E+06	40.4	29.5	62.1	35.6	34.2	33.5	32.5	30.8	29.8
0	0	20Apr 09	11:45:00	863.2	47.3	4.64E+07	73.2	28.8	100.2	42.8	37.1	36.5	35.6	30.7	29.3
0	0	20Apr 09	11:59:23	0.8	32.6	1.46E+03	32.7	32.4	44.3	32.7	32.7	32.7	32.5	32.4	32.4
			sum	2.46E+05		9.59E+10	98.6	22.3	119.8	52.9	46.2	44.4	41.8	36.6	34.3 Average
			min/ave	4093	55.9					28.5	26.6	25.9	25.3	23.4	22.5 Min
			Hours	68.2						68.0	59.5	57.5	54.2	46.5	42.9 Max

TRAFFIC NOISE MODELING

Traffic Noise Prediction Model, (FHWA RD-77-108)
Model Input Sheet

Project Name : Heber Dunes
Project Number : 7080197.1
Modeling Condition : Existing Peak Hour WE
Ground Type : Soft
Metric (L_{eq}, L_{dn}, CNEL) : Leq

K Factor : 0
Traffic Desc. (Peak or ADT) : Peak



Segment	Roadway	Segment		Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
		From	To										
1	SR7	North of Heber Ro	Heber Road	303	65	100	95	3	2	65	10	25	
2		Heber Road	South of Heber Rc	285	65	100	95	3	2	65	10	25	
3	Heber Road	East of SR-7	SR-7	20	40	50	98	1	1	85	5	10	
4		SR-7	Heber Dunes Stat	30	40	50	98	1	1	85	5	10	
5		Heber Dunes Stat	Mets Road	56	40	50	98	1	1	85	5	10	
6		Mets Road	West of Mets Roa	52	40	50	98	1	1	85	5	10	
7	Mets Road			5	40	50	98	1	1	85	5	10	

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Heber Dunes
Project Number : 7080197.1
Modeling Condition : Existing Peak Hour WE
Metric (Leq, Ldn, CNEL) : Leq



Segment	Roadway	Segment		Noise Levels, dB Leq				Distance to Traffic Noise Contours, Feet				
		From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	SR7	North of Heber Ro	Heber Road	60.9	52.0	53.7	62.1	30	64	138	298	642
2		Heber Road	South of Heber Rc	60.6	51.8	53.5	61.8	29	62	133	286	616
3	Heber Road	East of SR-7	SR-7	47.7	36.7	41.5	48.9	2	4	9	20	42
4		SR-7	Heber Dunes Stati	49.4	38.4	43.3	50.6	3	6	12	26	55
5		Heber Dunes Stati	Mets Road	52.1	41.2	46.0	53.4	4	8	18	39	84
6		Mets Road	West of Mets Roa	51.8	40.8	45.7	53.0	4	8	17	37	80
7	Mets Road			41.6	30.7	35.5	42.9	1	2	4	8	17

Traffic Noise Prediction Model, (FHWA RD-77-108)
Model Input Sheet

Project Name : Heber Dunes
Project Number : 7080197.1
Modeling Condition : Future No Project Peak Hour WE
Ground Type : Soft
Metric (L_{eq}, L_{dn}, CNEL) : Leq

K Factor : 0

Traffic Desc. (Peak or ADT) : Peak



Segment	Roadway	Segment		Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
		From	To										
1	SR7	North of Heber Ro	Heber Road	450	65	100	95	3	2	65	10	25	
2		Heber Road	South of Heber Rc	420	65	100	95	3	2	65	10	25	
3	Heber Road	East of SR-7	SR-7	35	40	50	98	1	1	85	5	10	
4		SR-7	Heber Dunes Stat	45	40	50	98	1	1	85	5	10	
5		Heber Dunes Stat	Mets Road	80	40	50	98	1	1	85	5	10	
6		Mets Road	West of Mets Roa	75	40	50	98	1	1	85	5	10	
7	Mets Road			10	40	50	98	1	1	85	5	10	

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Heber Dunes
Project Number : 7080197.1
Modeling Condition : Future No Project Peak Hour WE
Metric (Leq, Ldn, CNEL) : Leq



Segment	Roadway	Segment		Noise Levels, dB Leq				Distance to Traffic Noise Contours, Feet				
		From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	SR7	North of Heber Ro	Heber Road	62.6	53.7	55.5	63.8	39	84	180	388	835
2		Heber Road	South of Heber Rc	62.3	53.4	55.2	63.5	37	80	172	370	798
3	Heber Road	East of SR-7	SR-7	50.1	39.1	43.9	51.3	3	6	13	28	61
4		SR-7	Heber Dunes Stati	51.2	40.2	45.0	52.4	3	7	16	34	72
5		Heber Dunes Stati	Mets Road	53.7	42.7	47.5	54.9	5	11	23	49	106
6		Mets Road	West of Mets Roa	53.4	42.4	47.2	54.6	5	10	22	47	102
7	Mets Road			44.7	33.7	38.5	45.9	1	3	6	12	27

Traffic Noise Prediction Model, (FHWA RD-77-108)
Model Input Sheet

Project Name : Heber Dunes
Project Number : 7080197.1
Modeling Condition : Future With Project Peak Hour WE
Ground Type : Soft
Metric (L_{eq}, L_{dn}, CNEL) : Leq

K Factor : 0

Traffic Desc. (Peak or ADT) : Peak



Segment	Roadway	Segment		Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
		From	To										
1	SR7	North of Heber Ro	Heber Road	482	65	100	95	3	2	65	10	25	
2		Heber Road	South of Heber Rc	437	65	100	95	3	2	65	10	25	
3	Heber Road	East of SR-7	SR-7	41	40	50	98	1	1	85	5	10	
4		SR-7	Heber Dunes Stat	100	40	50	98	1	1	85	5	10	
5		Heber Dunes Stat	Mets Road	176	40	50	98	1	1	85	5	10	
6		Mets Road	West of Mets Roa	164	40	50	98	1	1	85	5	10	
7	Mets Road			17	40	50	98	1	1	85	5	10	

Traffic Noise Prediction Model, (FHWA RD-77-108)
Predicted Noise Levels

Project Name : Heber Dunes
Project Number : 7080197.1
Modeling Condition : Future With Project Peak Hour WE
Metric (Leq, Ldn, CNEL) : Leq



Segment	Roadway	Segment		Noise Levels, dB Leq				Distance to Traffic Noise Contours, Feet				
		From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	SR7	North of Heber Ro	Heber Road	62.9	54.0	55.8	64.1	41	87	188	406	874
2		Heber Road	South of Heber Rc	62.5	53.6	55.3	63.7	38	82	176	380	819
3	Heber Road	East of SR-7	SR-7	50.8	39.8	44.6	52.0	3	7	15	32	68
4		SR-7	Heber Dunes Stati	54.7	43.7	48.5	55.9	6	12	27	57	123
5		Heber Dunes Stati	Mets Road	57.1	46.1	51.0	58.3	8	18	39	83	179
6		Mets Road	West of Mets Roa	56.8	45.8	50.6	58.0	8	17	37	79	171
7	Mets Road			47.0	36.0	40.8	48.2	2	4	8	18	38

TRAFFIC DATA USED FOR MODELING

Existing Conditions

Year 2009
Location Heber Dunes, CA

Intersection 1							
SR-7 and Heber Road							
	AM	PM	WE		AM	PM	WE
SBR	8	19	5	Southbound Approach	164	310	92
SBT	148	281	75	Southbound Departure	165	312	76
SBL	8	10	12	Westbound Approach	22	20	4
WBR	15	17	3	Westbound Departure	32	40	11
WBT	7	1	1	Eastbound Approach	34	43	9
WBL	0	2	0	Eastbound Departure	18	16	16
EBL	9	8	6	Northbound Approach	204	188	209
EBT	8	6	2	Northbound Departure	209	193	211
EBR	17	29	1				
NBL	17	20	5	Total AM Volume	424		
NBT	185	168	202	Total PM Volume	561		
NBR	2	0	2	Total Weekend Volume	628		

Intersection 2							
Heber Road and Heber Dunes State Park Entrance							
	AM	PM	WE		AM	PM	WE
SBR	0	0	0	Southbound Approach	0	0	0
SBT	0	0	0	Southbound Departure	1	14	8
SBL	0	0	0	Westbound Approach	31	64	21
WBR	0	0	0	Westbound Departure	30	66	36
WBT	30	62	18	Eastbound Approach	38	56	20
WBL	1	2	3	Eastbound Departure	39	47	26
EBL	0	0	0	Northbound Approach	1	7	29
EBT	38	44	15	Northbound Departure	0	0	0
EBR	0	12	5				
NBL	0	4	18	Total AM Volume	70		
NBT	0	0	0	Total PM Volume	127		
NBR	1	3	11	Total Weekend Volume	140		

Intersection 3							
Heber Road and Mets Road							
	AM	PM	WE		AM	PM	WE
SBR	1	19	0	Southbound Approach	5	19	2
SBT	0	0	0	Southbound Departure	0	0	0
SBL	4	0	2	Westbound Approach	31	31	36
WBR	0	2	2	Westbound Departure	32	48	34
WBT	31	29	34	Eastbound Approach	37	58	18
WBL	0	0	0	Eastbound Departure	38	52	19
EBL	3	6	1	Northbound Approach	0	0	0
EBT	34	52	17	Northbound Departure	3	8	3
EBR	0	0	0				
NBL	0	0	0	Total AM Volume	73		
NBT	0	0	0	Total PM Volume	108		
NBR	0	0	0	Total Weekend Volume	112		

Intersection 4							
	AM	PM	WE		AM	PM	WE
SBR				Southbound Approach	0	0	0
SBT				Southbound Departure	0	0	0
SBL				Westbound Approach	0	0	0
WBR				Westbound Departure	0	0	0
WBT				Eastbound Approach	0	0	0
WBL				Eastbound Departure	0	0	0
EBL				Northbound Approach	0	0	0
EBT				Northbound Departure	0	0	0
EBR							
NBL				Total AM Volume	0		
NBT				Total PM Volume	0		
NBR				Total Weekend Volume	0		

Intersection 5							
	AM	PM	WE		AM	PM	WE
SBR				Southbound Approach	0	0	0
SBT				Southbound Departure	0	0	0
SBL				Westbound Approach	0	0	0
WBR				Westbound Departure	0	0	0
WBT				Eastbound Approach	0	0	0
WBL				Eastbound Departure	0	0	0
EBL				Northbound Approach	0	0	0
EBT				Northbound Departure	0	0	0
EBR							
NBL				Total AM Volume	0		
NBT				Total PM Volume	0		
NBR				Total Weekend Volume	0		

Future without Plan Implementation

Year 2030

Location Heber Dunes, CA

Intersection 1							
SR-7 and Heber Road							
	AM	PM	WE		AM	PM	WE
SBR	10	30	5	Southbound Approach	240	445	135
SBT	220	400	110	Southbound Departure	245	450	110
SBL	10	15	20	Westbound Approach	30	40	5
WBR	20	25	5	Westbound Departure	45	70	10
WBT	10	10	0	Eastbound Approach	50	65	15
WBL	0	5	0	Eastbound Departure	25	25	30
EBL	15	10	10	Northbound Approach	305	280	310
EBT	10	10	5	Northbound Departure	310	285	315
EBR	25	45	0				
NBL	25	30	5	Total AM Volume	625		
NBT	275	250	300	Total PM Volume	830		
NBR	5	0	5	Total Weekend Volume	930		

Intersection 2							
Heber Road and Heber Dunes State Park Entrance							
	AM	PM	WE		AM	PM	WE
SBR	0	0	0	Southbound Approach	0	0	0
SBT	0	0	0	Southbound Departure	0	25	10
SBL	0	0	0	Westbound Approach	45	95	30
WBR	0	0	0	Westbound Departure	45	95	50
WBT	45	90	25	Eastbound Approach	55	85	25
WBL	0	5	5	Eastbound Departure	55	70	35
EBL	0	0	0	Northbound Approach	0	10	40
EBT	55	65	20	Northbound Departure	0	0	0
EBR	0	20	5				
NBL	0	5	25	Total AM Volume	100		
NBT	0	0	0	Total PM Volume	190		
NBR	0	5	15	Total Weekend Volume	190		

Intersection 3				Heber Road and Mets Road			
	AM	PM	WE		AM	PM	WE
SBR	0	30	0	Southbound Approach	5	30	5
SBT	0	0	0	Southbound Departure	0	0	0
SBL	5	0	5	Westbound Approach	45	90	55
WBR	0	5	5	Westbound Departure	45	115	50
WBT	45	85	50	Eastbound Approach	55	85	25
WBL	0	0	0	Eastbound Departure	55	75	30
EBL	5	10	0	Northbound Approach	0	0	0
EBT	50	75	25	Northbound Departure	5	15	5
EBR	0	0	0				
NBL	0	0	0	Total AM Volume	105		
NBT	0	0	0	Total PM Volume	205		
NBR	0	0	0	Total Weekend Volume	170		

Intersection 4							
	AM	PM	WE		AM	PM	WE
SBR				Southbound Approach	0	0	0
SBT				Southbound Departure	0	0	0
SBL				Westbound Approach	0	0	0
WBR				Westbound Departure	0	0	0
WBT				Eastbound Approach	0	0	0
WBL				Eastbound Departure	0	0	0
EBL				Northbound Approach	0	0	0
EBT				Northbound Departure	0	0	0
EBR							
NBL				Total AM Volume	0		
NBT				Total PM Volume	0		
NBR				Total Weekend Volume	0		

Intersection 5							
	AM	PM	WE		AM	PM	WE
SBR				Southbound Approach	0	0	0
SBT				Southbound Departure	0	0	0
SBL				Westbound Approach	0	0	0
WBR				Westbound Departure	0	0	0
WBT				Eastbound Approach	0	0	0
WBL				Eastbound Departure	0	0	0
EBL				Northbound Approach	0	0	0
EBT				Northbound Departure	0	0	0
EBR							
NBL				Total AM Volume	0		
NBT				Total PM Volume	0		
NBR				Total Weekend Volume	0		

Future with Plan Implementation

Year 2030

Location Heber Dunes, CA

Intersection 1							
SR-7 and Heber Road							
	AM	PM	WE		AM	PM	WE
SBR	14	11	13	Southbound Approach	244	241	143
SBT	220	220	110	Southbound Departure	248	253	120
SBL	10	10	20	Westbound Approach	33	31	7
WBR	20	20	5	Westbound Departure	57	49	27
WBT	13	11	2	Eastbound Approach	55	64	53
WBL	0	0	0	Eastbound Departure	26	26	34
EBL	16	20	34	Northbound Approach	310	307	317
EBT	11	11	9	Northbound Departure	311	315	339
EBR	28	33	10				
NBL	30	27	12	Total AM Volume	642		
NBT	275	275	300	Total PM Volume	643		
NBR	5	5	5	Total Weekend Volume	1,040		

Intersection 2							
Heber Road and Heber Dunes State Park Entrance							
	AM	PM	WE		AM	PM	WE
SBR	0	0	0	Southbound Approach	0	0	0
SBT	0	0	0	Southbound Departure	15	32	65
SBL	0	0	0	Westbound Approach	57	49	47
WBR	0	0	0	Westbound Departure	45	61	108
WBT	45	45	25	Eastbound Approach	58	83	63
WBL	12	4	22	Eastbound Departure	60	69	73
EBL	0	0	0	Northbound Approach	5	30	136
EBT	55	55	20	Northbound Departure	0	0	0
EBR	3	28	43				
NBL	0	16	83	Total AM Volume	120		
NBT	0	0	0	Total PM Volume	162		
NBR	5	14	53	Total Weekend Volume	492		

Intersection 3							
Heber Road and Mets Road							
	AM	PM	WE		AM	PM	WE
SBR	0	0	0	Southbound Approach	6	8	10
SBT	0	0	0	Southbound Departure	0	0	0
SBL	6	8	10	Westbound Approach	45	61	113
WBR	0	1	7	Westbound Departure	45	60	106
WBT	45	60	106	Eastbound Approach	57	80	58
WBL	0	0	0	Eastbound Departure	58	83	68
EBL	5	5	0	Northbound Approach	0	0	0
EBT	52	75	58	Northbound Departure	5	6	7
EBR	0	0	0				
NBL	0	0	0	Total AM Volume	108		
NBT	0	0	0	Total PM Volume	149		
NBR	0	0	0	Total Weekend Volume	362		

Intersection 4							
	AM	PM	WE		AM	PM	WE
SBR				Southbound Approach	0	0	0
SBT				Southbound Departure	0	0	0
SBL				Westbound Approach	0	0	0
WBR				Westbound Departure	0	0	0
WBT				Eastbound Approach	0	0	0
WBL				Eastbound Departure	0	0	0
EBL				Northbound Approach	0	0	0
EBT				Northbound Departure	0	0	0
EBR							
NBL				Total AM Volume	0		
NBT				Total PM Volume	0		
NBR				Total Weekend Volume	0		

Intersection 5							
	AM	PM	WE		AM	PM	WE
SBR				Southbound Approach	0	0	0
SBT				Southbound Departure	0	0	0
SBL				Westbound Approach	0	0	0
WBR				Westbound Departure	0	0	0
WBT				Eastbound Approach	0	0	0
WBL				Eastbound Departure	0	0	0
EBL				Northbound Approach	0	0	0
EBT				Northbound Departure	0	0	0
EBR							
NBL				Total AM Volume	0		
NBT				Total PM Volume	0		
NBR				Total Weekend Volume	0		

Appendix F
Cultural Resources Report

**CULTURAL RESOURCES INVENTORY FOR THE
HEBER DUNES SVRA
IMPERIAL COUNTY, CALIFORNIA**

Prepared for:

Off-Highway Motor Vehicle Recreation Division
California Department of Parks and Recreation
Ocotillo Wells District
5172 Highway 78
Borrego Springs, California 92004

Prepared by:

EDAW AECOM
1420 Kettner Boulevard, Suite 500
San Diego, California 92101
(619) 233-1454

Authors:

Stacey C. Jordan, Ph.D., RPA
and
Cheryl Bowden-Renna

Acres: Approximately 343 acres

U.S.G.S. Quadrangle: 7.5' Calexico

Restricted Distribution

May 2009

Key Words: Intensive pedestrian survey, South Alamo Canal, CA-IMP-7364H (P-13-007364), Heber Dunes, historic scatter, HD-1

National Archaeological Data Base Information

Authors: Stacey C. Jordan, Ph.D. and Cheryl Bowden-Renna

Firm: EDAW AECOM

Client/Project Proponent: California Department of Parks and Recreation

Report Date: May 2009

Report Title: Cultural Resources Inventory for the Heber Dunes SVRA, Imperial County, California

Type of Study: Intensive Pedestrian Survey

New Sites: Temporary Number HD-1

Updated Sites: South Alamo Canal, CA-IMP-7364H (P-13-007364)

USGS Quad: Calexico 1980

Acreage: Approximately 343 acres

Contract Number: 07080197.10

Key Words: Intensive pedestrian survey, South Alamo Canal, CA-IMP-7364H (P-13-007364), Heber Dunes, historic scatter, HD-1

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MANAGEMENT SUMMARY

This report presents the results of an intensive pedestrian archaeological survey and cultural resources inventory of the approximately 343-acre Heber Dunes State Vehicular Recreation Area (SVRA) in Imperial County, California in support of a General Plan and Environmental Impact Report for the property. Heber Dunes is part of the Off-Highway Motor Vehicle Recreation (OHMVR) Division/Ocotillo Wells District of the California DPR system. This study was conducted in compliance with the California Environmental Quality Act (CEQA) with the California Department of Parks and Recreation (DPR) as lead agency.

As part of this study, EDAW AECOM conducted a records search of the California Historical Resources Inventory System's South Coastal Information Center at San Diego State University. In addition, EDAW AECOM archaeologists consulted with the Imperial Valley Pioneers Museum and with local residents Bill and Susan Claverie and Mike Claverie in an attempt to obtain further information on the Heber Dunes area. The Native American Heritage Commission (NAHC) was contacted by DPR archaeologist Jennifer Parker in order to request a Sacred Lands file search and receive a list of Native American contacts for government-to-government consultation purposes.

Field surveys were conducted by EDAW AECOM archaeologists Stacey Jordan, Matt Tennyson, Nick Doose, and Brian Spelts between March 31 and April 2, 2009. Constraints on field survey included dense impassable vegetation in areas of the park, particularly on dune tops and in the southern area of the property. Trail cuts and areas of exposed dune stratigraphy were examined in detail for evidence of subsurface deposits. One new resource was identified, temporary site number HD-1. This resource consists of a disturbed scatter of household ceramics, glass, and barbed wire dating to the first half of the twentieth century; the material lacks association with any particular residence or occupation. While located outside of the project area proper, the previously recorded South Alamo Canal (CA-IMP-7364H/P-13-007364) was examined and updated. DPR 523 forms were completed for both resources. Field notes and photographs are on file at the EDAW AECOM San Diego office.

Newly identified resource HD-1 appears to consist of dredger/drag line deposits that were likely created during the lining of the existing South Alamo Canal in 1989. The artifactual material is typical of household refuse deposits found throughout the Imperial Valley. No subsurface testing was undertaken. However, based on historical research, the site is not associated with events or persons significant in regional or state history and not eligible for the CRHR of Historic Resources (CRHR) under criterion A or B. As a disturbed archaeological site, it is not eligible to the CRHR under criterion C. Documentation and analysis of diagnostic artifacts and recording of the site has exhausted its potential to yield information important in local or state history. As such, it is no longer eligible under criterion D, and the level of any future impacts as a result of the proposed project would be less than significant.

Should any unanticipated resources be discovered during construction or maintenance activities in the project area, they must be evaluated by a qualified archaeologist to determine their

eligibility to the CRHR and significance under CEQA. The preferred mitigation for cultural resources under CEQA is avoidance of the resource. Should significant resources be discovered during construction or maintenance activities, data recovery efforts would be required to gather sufficient information from the site to reduce the impact to less than significant.

If buried human remains are encountered during any activity in the project area, work must be halted and the DPR archaeologist must be notified. If the remains are determined to be Native American, the NAHC will be notified within 24 hours as required by Public Resources Code 5097. The NAHC will notify designated Most Likely Descendants who would provide recommendations for the treatment of the remains to DPR within 24 hours.

UNDERTAKING INFORMATION/INTRODUCTION

This report presents the results of archaeological survey and inventory of the approximately 343-acre Heber Dunes State Vehicular Recreation Area (SVRA) in Imperial County, California (Figure 1). The SVRA provides managed off-highway vehicle (OHV) riding opportunities and other day-use recreation activities such as picnicking. Intensive pedestrian survey was conducted to identify and record prehistoric and historical resources in support of a General Plan and Environmental Impact Report for the property. Heber Dunes is part of the Off-Highway Motor Vehicle Recreation (OHMVR) Division/Ocotillo Wells District of the California State Parks system. This study was conducted in compliance with the California Environmental Quality Act (CEQA) with the California Department of Parks and Recreation (DPR) as lead agency.

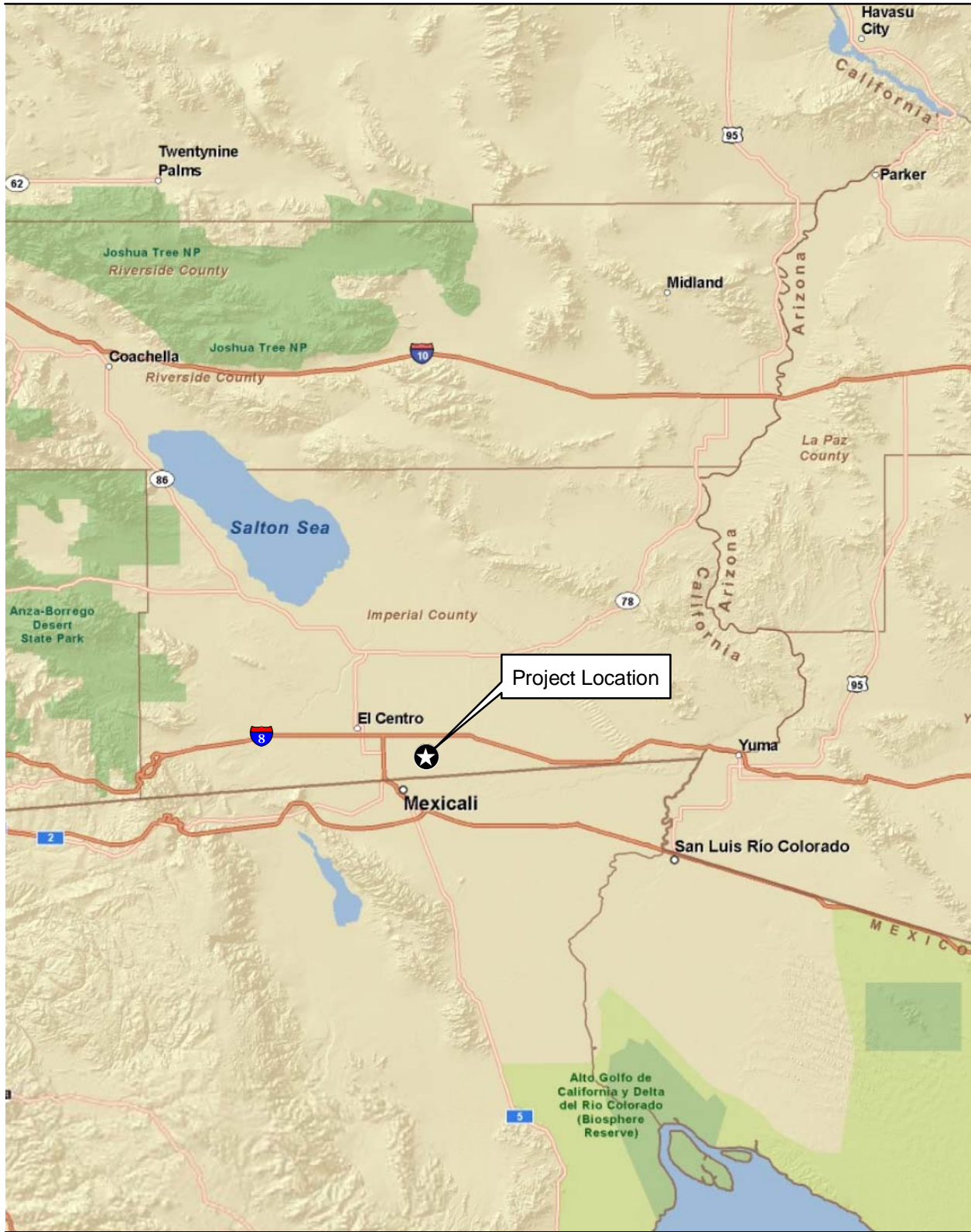
PROJECT DESCRIPTION

The DPR OHMVR Division requires a General Plan and Environmental Impact Report (EIR) to meet Public Resources Code Section 5002.2 and Section 21000 et seq. of CEQA for the Heber Dunes SVRA. The current study comprises the cultural resources technical study in support of the EIR. As part of this cultural resources inventory, EDAW AECOM conducted research to provide a context for the SVRA and obtained a records search from the South Coastal Information Center (SCIC) at San Diego State University to determine previously identified resources and surveys conducted within the project area and a surrounding one-mile radius. DPR archaeologist Jennifer Parker contacted the Native American Heritage Commission to solicit a Sacred Lands File Search and request a list of contacts in order to conduct consultation.

The inventory involved intensive pedestrian survey of the 343-acre property located approximately 10 miles southeast of El Centro, California (Figure 2). The property is bounded by Heber Road to the north, the South Alamo canal to the east and south, and an undeveloped Caltrans-owned parcel to the west. Agricultural uses surround the property. Transects were spaced at 15 meter intervals when feasible and were rerouted around some impassable heavily vegetated areas. Handheld GPS units were used to record resource locations. All identified resources were documented on DPR 523 forms.

PERSONNEL

The EDAW AECOM project team meets federal qualifications and standards. EDAW AECOM Senior Archaeologist Stacey Jordan, Ph.D., RPA served as principal investigator. Matt Tennyson served as field director and co-author for the report. Nick Doose and Brian Spelts served as field crew members. Resumes of key project personnel are contained in Appendix A.



Source: ESRI World Street Map 2009

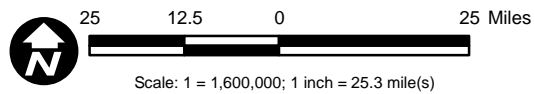
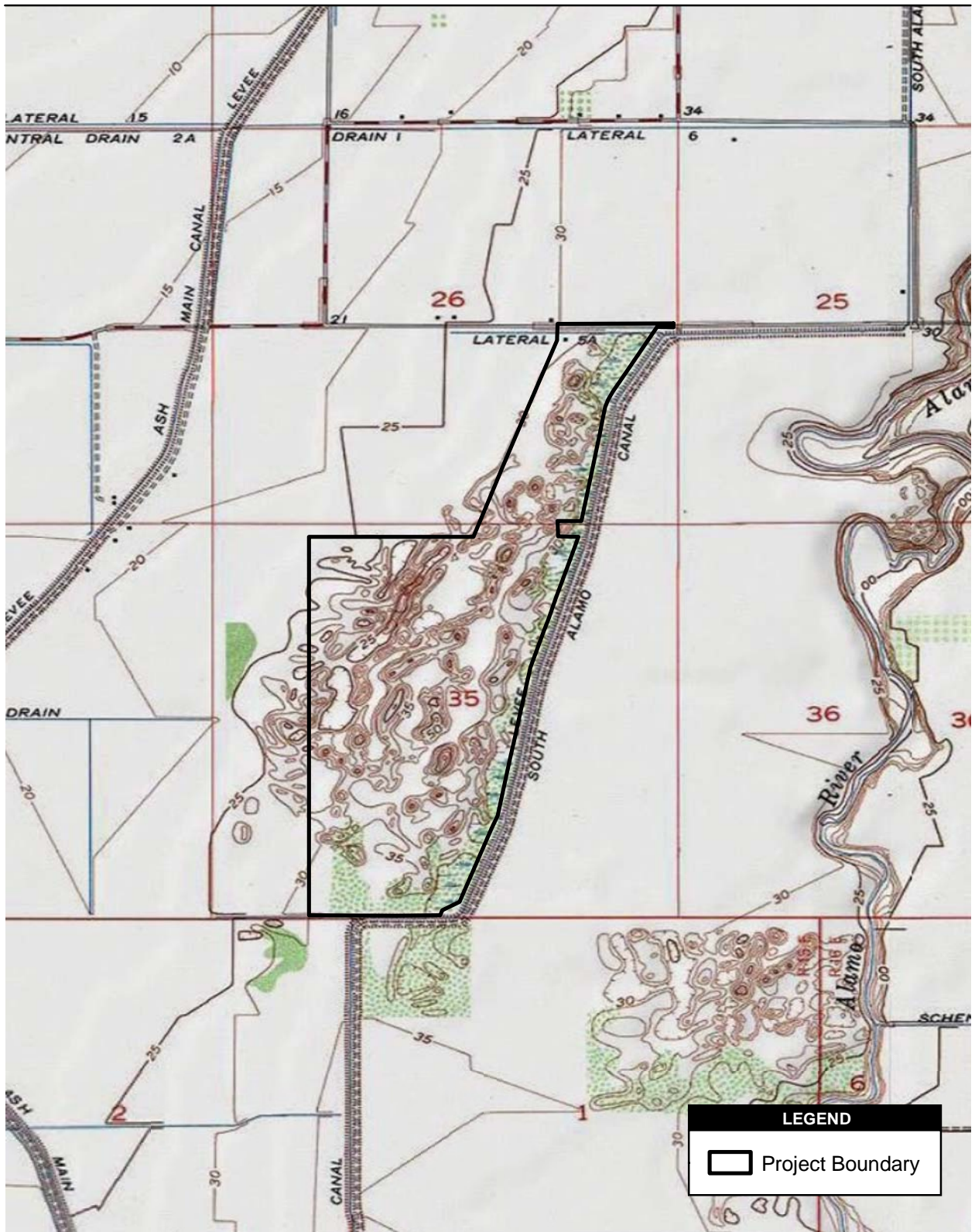


Figure 1
Vicinity Map



Source: USGS 7.5' Quadrangle, Calexico, 1980

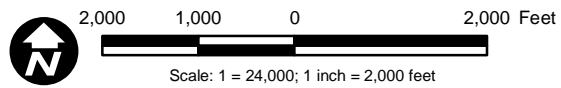


Figure 2
Location Map

ENVIRONMENTAL AND CULTURAL SETTING

ENVIRONMENTAL SETTING

Introduction

Heber Dunes SVRA is located in the Colorado Desert, south and west of the Chocolate Mountains in the Imperial Valley of the Salton Trough. The trough is a deep sedimentary basin filled primarily with Colorado River alluvium, which can be more than four miles deep in places (Morris 2000). The area comprises the northern extension of the Gulf of California and remains geologically active. The San Andreas Fault forms the northeast boundary of the Salton Trough, which was formed by subsidence caused by plate tectonics which have led to much of the trough below sea level. Below the existing sedimentation lie Precambrian gneisses, anorthosites, and schists, intruded by Paleozoic and Cenozoic plutonic rocks (California Department of Water Resources and California Department of Fish and Game 2006). The rift first appeared in late Cenozoic times, filling with sediments dating from the Miocene and Holocene.

Prehistorically, the nearest source of perennial water to the project was the Colorado River. Native American populations in the region had their main settlements along the Colorado where permanent water was available. The area once contained a freshwater lake known as Lake Cahuilla formed by the Colorado River's meandering flow. While it previously supported the multiple incarnations of Lake Cahuilla, the Colorado River now passes approximately 50 miles east of the project area, entering into a delta and forming a series of braided channels leading to the head of the Gulf of California to the south.

Prior to the mid-Pleistocene, the region was connected to the Sea of Cortez. At some time prior to 37,000 years ago, the Colorado River's course led to siltation closing off the trough from the gulf and directing the flow north to form Lake Cahuilla. Multiple cycles of dessication and replenishing took place, with the Colorado River discharging flood waters into the valley through western riverbed arms. This is thought to have continued through the early and middle Holocene, with potential final filling of the lake occurring during the historic period (Apple et al. 1997; Laylander 1994; Schaefer 1986, 1994; Waters 1980, 1983 in Kirkish et al. 2000). Following evaporation of the prehistoric lake, "smaller lakes continued to fill small depressions along river channels that dissected and meandered across the old lake bed. Deltas formed in these small lakes where streams discharged into them" (Holzer and Bennett 2007). The area of the park is located within one of these small delta areas formed by the old river courses of the sediment-carrying Alamo River (Figure 3; California DPR 2008, Moss et al. 2004).



Figure 3. Old Alamo River, near Holtville, Imperial County. Magic Lantern Slides - Berkeley Geography Collection (<http://geomages.berkeley.edu/GeoImages/LanternSlides/Deserts/Nc-X-71.html>).

Today, the lowest elevations of the trough hold the Salton Sea. Prior to 1905 the area had been a dry playa but flooding of the Colorado River between 1905 and 1907 refilled the trough through the relic river channels of the New and Alamo Rivers (Planert and Williams 1995). Today, agricultural runoff carried through inflows of the Whitewater, Alamo, and New rivers sustain the sea (Salton Sea Authority 2000, Planert and Williams 1995). The Heber Dunes SVRA project area now sits nestled among irrigated farmland fed by water from the Colorado River via the Imperial Irrigation District.

Climate

Heber Dunes is situated approximately 10 miles southeast of the City of El Centro in an arid desert region. Average annual precipitation in El Centro is less than three inches, with most rain falling between August and March. Summer temperatures commonly exceed 104 degrees, and winter temperatures generally reach highs between 70 and 80 degrees (Western Regional Climate Center 2009).

Flora and Fauna

Native vegetation in the desert areas of the region was dominated by huge cottonwood (*Populus fremontii*) and sycamore (*Platanus racemosa*) trees. Another species of plant that was an important component of the drier parts of the floodplain was mesquite (*Prosopis glandulosa*). The two varieties of mesquite (screwbean and honey) were key food sources for the inhabitants along the Colorado River (Kirkish et al. 2000).

Within the project area today are six primary vegetation communities. These consist of suda, creosote scrub, arrowweed/baccharis, arrowweed/saltbush, saltbush, and tamarisk/sand dune (Soil Ecology Restoration Group 1999). The suda (*Suedamoquinii*) community dominates the northeast corner of the park, where OHV activity is limited. The creosote community, dominated by the creosote bush (*Larrea tridentate*) is located in the southwest and central west areas of the park, with the arrowweed (*Pluchea sericea*)/baccharis (*Baccharis emoryi*) community present in a narrow strip along the eastern edge of the park. The arrowweed/saltbush community is located in the southwest corner and along the western edge of the park. The saltbush (*Atriplex lentiformis*) community can be found in three areas – the southwestern corner and two smaller stands to the north. The tamarisk (*Tamarix ramosissima*)/sand dune community is located in the central area of the park, with many herbaceous species in its dense understory. Because of the concentration of OHV activity in this central area, few native or exotic annuals are present. The invasive tamarisk is also found scattered throughout the other plant communities, and introduced palm trees are present along the northeastern edge of the park (Soil Ecology Restoration Group 1999). The invasive tamarisk and salt cedar may have been introduced as windrows by adjacent farmers. Today, they appear to be displacing native habitat and long-term control has been difficult to achieve (Herrick 2007).

Biologically, Heber Dunes is a habitat island spatially isolated from the Colorado Desert environment by surrounding agricultural lands, limiting the species diversity expected in a desert environment. Red-winged blackbirds, mourning doves, black-headed cowbirds, and rough-winged swallows have been observed at Heber Dunes with transient species like cattle egret and white-faced ibis taking advantage of the irrigation waters surrounding the property (Soil Ecology Restoration Group 1999). Migrant raptors including Swainson's hawk and turkey vulture have also been noted, as have burrowing owl and road runner. Ravens, Horned owls, Red tailed hawks, kestrels, and Gambel's quail, are also common (Herrick 2007). Numerous reptiles are present in the park, including sidewinders (*Crotalus cerastes*), gopher snakes (*Pituophis melanoleucus*), long-nosed snakes (*Rhinocheilus lecontei*), western whiptails (*Cnemidophorus tigris*), Western diamondback rattlesnakes, California common kingsnakes, side-blotched lizards

(*Uta stansburiana*), long-tailed brush lizards (*Urosaurus graciosus*), desert spiny lizards, banded geckos, and occasionally desert iguanas (Soil Ecology Restoration Group 1999, Herrick 2007). Rodents and leporids are the predominant mammal species found at Heber Dunes. Specific species present include the desert pocket mouse (*Chaetodipus penicillatus*), the deer mouse (*Peromyscus maniculatus*), the cactus mouse (*Peromyscus eremicus*), Audobon's cottontail (*Sylvilagus audubonii*), the black-tailed jackrabbit (*Lepus californicus*), the roundtailed ground squirrel (*Spermophilus tereticaudus*), coyote (*Canis latrans*), and spotted skunk (*Spilogale putoris*) (Soil Ecology Restoration Group 1999). Bobcats have also been observed, though are rare (Herrick 2007).

CULTURAL SETTING

Regional Prehistory

Paleoindian

The prehistory of the desert region of Imperial County is generally divided into three major periods of occupation: Paleoindian, Archaic, and Late Prehistoric. An earlier preprojectile point (pre-Paleoindian) culture was proposed by Malcolm Rogers who used the term Malpais – later reclassified as San Dieguito I – to refer to very early materials (Rogers 1939). Malpais materials consist of very heavily varnished choppers, scrapers, and other core-based tools typically found on old desert pavement areas. Many scholars are skeptical of these posited early occupations (e.g., Schaefer 1994).

The first well-documented cultural tradition in southern California is the San Dieguito complex (12,000 to 7000 years before present [B.P.]). The type site is on the San Dieguito River in north-coastal San Diego County, though materials have also been found around dry inland lakes, on desert terraces and outside of Tucson, Arizona (Kirkish et al. 2000). Related materials have been found in the Mojave Desert and in the Great Basin, sometimes called the Lake Mojave complex (e.g., Campbell et al. 1937). Diagnostic artifact types and categories associated with the San Dieguito complex include percussion-flaked core tools and flake-based tools such as scraper planes; choppers; scrapers; crescentics; elongated bifacial knives; and diagnostic Silver Lake, Lake Mojave, and leaf shaped projectile points (Rogers 1939; Warren 1967).

In areas adjacent to the coast, many Paleoindian period sites are believed to have been covered by the rise in sea levels that began at the end of the Pleistocene. In more inland regions, alluvial sedimentation in valley areas may have covered these materials. Few San Dieguito-Lake Mojave sites in the desert contain subsurface deposits, temporally diagnostic artifacts, or datable material (Hayden 1976; Rogers 1939). Temporal placement of desert sites is based primarily on degree of weathering and patination, and absolute dating has been problematic (Underwood and Gregory 2006).

Archaic

Desert and coastal Archaic period sites have generally been dealt with separately, although there are clear similarities between the two. In the desert, the Archaic can be divided into the Pinto

complex (7000 to 4000 B.P.) and the Amargosa or Gypsum complex (4000 to 1500 B.P.). The Pinto complex shows evidence of a shift from big game exploitation to a broader-based economy with increased emphasis on the exploitation of plant resources, and is thought to be an adaptation to erratic climatic drying of the Altithermal (Grayson 1993, Warren 1984, Warren and Crabtree 1986). Groundstone artifacts are rare; these are typically thin slabs with smooth, highly polished surfaces which “may be platforms upon which fibrous leaves or skins were scraped. They are invariably associated with pulping planes” (Rogers 1939). Projectile points are distinctive crude, percussion-flaked Pinto series atlatl points. Other lithics include percussion-flaked scrapers, knives, scraper planes, and choppers (Underwood and Gregory 2006).

The subsequent Amargosa or Gypsum complex is characterized by the presence of fine, pressure-flaked Elko, Humboldt, and Gypsum-series projectile points; leaf-shaped points; rectangular-based knives; flake scrapers; T-shaped drills; and occasional large scraper planes, choppers, and hammerstones (Underwood and Gregory 2006). Manos and basin metates became relatively common, and the mortar and pestle were introduced late in this period (Warren 1984). The florescence of tool types and the addition of groundstone hard seed-processing equipment suggest an attempt to adapt to drier desert conditions in the greater Southwest. Most examples of this complex have been found in the southern Great Basin-Mojave Desert.

Archaic period sites are more commonly found in coastal areas, and are generally recognized as the La Jollan complex in coastal San Diego County. Coastal and desert Archaic sites are so similar that some have suggested that the Altithermal (ca. 8000 B.P. - 5000 B.P.) made the deserts largely uninhabitable, inducing people to migrate to the coast where their subsistence strategies became oriented toward shellfish and other seashore resources.

Late Prehistoric

The incursion of Yuman-speaking people via the Gila/Colorado River drainages of western Arizona is apparent by approximately 2,000 years ago, and subsequent movements westward had great impact on the people of Southern California (Moriarty 1966). This Late Prehistoric period (1500 B.P. to 450 B.P.) is similarly characterized by two geographic expressions, the transmontane in the desert east of the mountains and the cismontane in the coast and foothill area west of the mountains. Both patterns indicate higher population densities and elaborations in social, political, and technological systems. Culture traits generally associated with this period include increasingly elaborate kinship systems and rock art, including ground figures or geoglyphs (McGuire 1982). Extensive trail systems also indicate connections between the coast and desert for trade, religious activities, and other interactions, peaceful or otherwise (Davis 1961).

The desert manifestation of the Late Prehistoric is broadly referred to as the Patayan pattern (e.g., Waters 1982). Paddle and anvil pottery first appears, likely via the Yuman-speaking Hokan culture of the middle Gila River area (Rogers 1945; Schroeder 1975, 1979). Cottonwood Triangular series projectile points and Desert side-notched series projectile points, used in bow and arrow hunting, appear at approximately A.D. 800 (1200 B.P.). Cremation rather than inhumation also became the burial norm. Artifactual material is characterized by the presence of arrow shaft straighteners, pendants, comales (heating stones), Tizon Brownware pottery, ceramic

figurines, ceramic “Yuman bow pipes,” ceramic rattles, miniature pottery, various cobble-based tools (e.g., scrapers, choppers, hammerstones), bone awls, manos and metates, and mortars and pestles.

Subsistence in desert areas is thought to have focused on acorns and grass seeds, with small game serving as a primary protein resource and big game as a secondary resource. Vegetation resources included honey mesquite and screwbean mesquite with smaller amounts of palo verde, ironwood, and native grasses (Underwood and Gregory 2006). Settlement in the Patayan consisted of seasonal settlements of small mobile groups concentrated along the Colorado River floodplain (Kirkish et al. 2000).

Ethnohistory

This area of the Salton Trough is in the traditional territory of the Kamia. Also known as Kumeyaay, Ipai, Tipai, and Diegueño, the Kamia in this area settled primarily along the New and Alamo Rivers (Kirkish et al. 2000). The Kamia spoke a Yuman language belonging to the Hokan language family, which includes the lower Colorado River tribes and Arizona groups to whom they are closely related. South of the Kumeyaay, in the vicinity of modern-day Ensenada, are the closely related Paipai. The Kamia or Desert Kumeyaay ranged over the Imperial Valley and northeastern Baja California (Underwood and Gregory 2006). As noted in Cooley (2006), it was the early chronicler Gifford (1931) who designated the Kumeyaay in the Jacumba and eastward as the Kamia. They were:

distinguished by a desert orientation with contacts and travel most frequently between Jacumba and the Imperial Valley. This term has generally been replaced with the designation of eastern Kumeyaay or Tipai, or sometimes Jacumeño (Chace 1980, Cook et al. 1997, Hedges 1975; Langdon 1975; Gifford 1931:2; Luomala 1978). The Jacumeño or Kamia were closely connected to the Quechan on the Colorado River and served as trading partners between the coastal and desert groups using a travel route through the Mountain Springs Grade.

The Kamia or Desert Kumeyaay relied on gathering, supplementing that subsistence base with floodplain horticulture along the New and Alamo rivers and at various springs (Underwood and Gregory 2006). Domesticated plants include maize, tepary beans, squash, pumpkin and gourds, with grasses intentionally planted for harvesting of their seeds. Large game hunting is thought to have been only a minor part of Kamia subsistence. Small game like lagomorphs were netted, and fish and aquatic birds formed a large component of the animal protein (Bee 1983, Castetter and Bell 1951, Forde 1931, Stewart 1983 in Kirkish et al. 2000).

The predominant determining factor for placement of villages and campsites was the ready availability of water, preferably on a year-round basis, with seasonal movements to exploit available food resources. Inland bands could travel to the coast to fish and gather salt, then shift to desert areas in the spring to gather agave (*Agave deserti*), moving to higher altitudes later in the year to gather seasonally available acorns and pine nuts (Cline 1984; Shipek 1991). During the winter and spring, Kamia groups lived in seasonal villages located on floodplain terraces. As described in Kirkish et al. (2000):

When the floodwaters of spring receded, they left their winter villages and descended onto the floodplain to plant their crops in the wet soil exposed by the receding river. They dispersed into small family camps near their two to three acre horticultural plots. After the fall harvest season, they would reconvene in winter villages.

Winter houses, or *uwa* in Kamia, were substantial earth-covered post-and-beam structures measuring four to eight meters square with thatched gable roofs. Three walls and the roof were covered in sand, and these houses held multiple extended families. Most activity, however, took place outdoors under open armadas or behind brush windbreaks (Forde 1931). Wikiups, or summer houses, were circular domed structures. Cleared circles or circular rock alignments are generally the archaeological manifestation of such construction (Ezzo and Altschul 1993).

Regional History

Early Spanish expeditions in the lower Colorado area make no mention of the desert Kamia (Kirkish et al. 2000). Spanish colonization began in earnest in 1769. This era represents a time of increased European exploration and settlement in southern California, though primarily in coastal areas. Dual military and religious contingents established the San Diego Presidio and the Mission San Diego de Alcalá along the coast. The mission system introduced horses, cattle, and other agricultural goods and implements to the area. It also disrupted traditional native lifeways, and many Native American populations became tied economically to the colonists. Contact with the interior came later, when Pedro Fages lead a Spanish expedition through what is now Eastern San Diego and Imperial counties in 1785. Despite the lack of early interaction between colonists and interior Native Americans, the Kamia near present-day Jacumba were already hostile to the Spaniards and in alliance with other native groups, actively resisting Spanish rule in the area by the time of Fages' expedition. Still, during their period of governance the Spaniards had little involvement in inland areas.

The cultural systems and institutions established by the Spanish continued to influence the region beyond 1821, when California came under Mexican rule. The Mexican period (1821-1848) retained many of the Spanish institutions and laws; the mission system, however, was secularized in 1834. Secularization allowed for increased Mexican settlement, with large tracts of land granted to individuals and families, and establishment of a rancho system based on cattle grazing (Pourade 1963). Secularization also meant that many Native Americans were further dispossessed. The Native Americans of the eastern mountain areas began to have hostile interactions with the Mexican settlers who began to enter the area. By this time, contact had led the Eastern Kumeyaay to incorporate domestic livestock, especially horses and cattle, procured through raids. Anglo-European contact also led to the adoption of agriculture, replacing the previous subsistence system based on hunting and gathering.

In present-day San Diego County, cattle ranching dominated agricultural activities and the development of the hide and tallow trade with the United States increased during the early part of this period. The Pueblo of San Diego was established at the former Presidio's settlement along

the San Diego River in 1834. Just over a decade after that occasion, however, Mexican rule in California ended. The Mexican-American War began in 1846, following the U.S. annexation of Texas. The conflict expanded to California, and Mexico ceded California and the entirety of the Greater Southwest, to the United States as part of the Treaty of Guadalupe-Hidalgo at the war's end in 1848. At the same time, conflict between Yuman-speaking groups resulted in numerous population displacements (Forbes 1965; Harwell and Kelly 1983; Kroeber 1920). An alliance between the Quechan and Mojave peoples to the east displaced smaller native groups in the region, a process that was complete by the mid-nineteenth century (Kirkish et al. 2000).

At the start of American rule in 1848, gold was discovered in California and American immigration began in earnest. Few Mexican ranchos remained intact because of land claim disputes. The homestead system encouraged American immigration to the west and brought further settlement in the inland mountain areas, further disrupting native communities. Desert Kamia at Jacumba, which became a focal point of contact mid-century as a result of its location on the mail route from San Diego to Fort Yuma, were finally subdued in 1880 and evicted from the Jacumba area (Cook et al. 1997). Today, the Kamia have no reservation of their own, but following a long standing tradition, reside with the Quechan and with the Kumeyaay in San Diego County, or live in Anglo communities.

In present-day Imperial County, transportation rather than settlement remained the primary focus during the nineteenth century, with mail and stage routes threaded through the area. Small settlements grew along the routes in the mid-nineteenth century and the Southern Pacific line between Los Angeles and Yuma was completed in 1877. While entrepreneurs like Dr. Oliver M. Wozencraft saw the potential to bring water into the area through canal in 1861, development of a water conveyance system that would allow population growth in the area did not occur until 1901. Creation of the California Development Company in the mid 1890s led to the financing and construction of the first canal in the lower Colorado Desert in 1901 (Hendricks 1971). A Southern Pacific spur line through the newly-named Imperial Valley from Niland to the border at Calexico was completed by 1904, taking advantage of the burgeoning agricultural production of the area. Siltation of the canal and overflowing river channels, however, flooded the Salton Sink between 1905 and 1907 and created the Salton Sea. As the valley's development continued, its ties to the Los Angeles area – its main consumer of agricultural products linked by the railway – led residents to resent the lack of attention from the county seat in San Diego. After petitioning for a referendum made possible by a 1907 legislative act defining how new counties could be formed, the residents of the valley voted to separate from San Diego County and Imperial County was founded in August of that year (Hendricks 1971).

The Imperial Irrigation District (IID) was formed by referendum in 1911, taking over the assets of the now-bankrupt California Development Corporation. Continuing to acquire smaller water companies and their infrastructure, IID was delivering water to approximately 500,000 acres of agricultural and residential property in the Imperial Valley through a wide-ranging water conveyance system of unprecedented scale by the mid-1920s (IID 2006).

Transportation development continued in the valley over the course of the twentieth century. Following much of the route of the Old Plank Road that had been maintained by travelers in

eastern San Diego and Imperial Counties, the original alignment of Highway 80 was in place by 1919. A “second generation” of the highway was built in the 1920s and 1930s, now known as Old Highway 80 (County of San Diego n.d.). The construction of Interstate 8 in 1967 marked the end of Highway 80’s primacy as the transportation corridor and helped usher in renewed population growth and development in the Imperial Valley.

Park History

Vic Herrick, Supervising Ranger of Heber Dunes SVRA has conducted wide-ranging research on the history of the park property and his findings are summarized in the discussion below. As noted by Herrick, little recorded history on the Heber Dunes property is available and most information has been obtained through oral interviews with long-time residents (Herrick 2007). Many local residents know the area as "Heber Beach." There are differing stories of how the label originated. Some claim that it refers to the recreational use of flood waters from the Alamo River which create stands of water surrounded by the dune sands. Others claim the name “came as a joke, when visiting relatives from the east came to visit California with visions of palm trees and waves and orange groves in their heads, locals would take them to Heber Beach, where the Eastern visitors were faced with the stark reality of the lowland tropical desert that is the Southern Imperial Valley” (Herrick 2007).

According to Karen Craft, the project area was part of a much more extensive network of dunes before being graded in 1905 for the construction of irrigation canals (Craft personal communication 1998). While the earliest portions of the South Alamo Canal were constructed in 1908, the portion of the canal along the eastern boundary of the park was constructed sometime between 1945 and 1957 based on the 1945 15’ and 1957 7.5’ Calxico USGS topographic quadrangles. It was lined with concrete in 1989 (Rister 1995). It is known that IID and the Imperial County Public Works Department have removed surplus sands from two locations on the property to facilitate weed removal and land leveling. The IID subsequently used this material in backfilling operations as part of the lining of the South Alamo Canal (Rister 1995). The lining of the canal constituted a major shift in the ecology of Heber Dunes, changing the environment and land uses of the park area. Previously, the area adjacent to the unlined canal supported fresh water marsh vegetation and the project area supported raccoon hunting by locals (Rister 1995, Claverie personal communication 2009). Local resident Mike Claverie noted that his uncle recalled there being “Indian pottery” in the dunes when he was a boy, though none has been observed in recent studies (Claverie personal communication 2009, Hines 1999).

Now an island of dunes in an agricultural valley, the size and bulk of its dune structures and the area’s soil chemistry made farming at Heber Dunes uneconomical (Rister 1995). Local resident Mike Claverie recalls that, during his youth in the early 1960s his family tried to farm 80 acres of the dunes, even installing a water pump (Claverie personal communication 2009). The efforts weren’t successful but abandoned concrete pipe structures associated with these farming efforts were previously observed in the southern portion of the property (Rister 1995).

Six parcels were acquired by Imperial County in the 1960s and 1970s to create Heber Dunes County Park. The Lee Estate and US Patent properties were acquired first in 1961 and 1931,

respectively, with properties from the Maggio, Phipps, and Nussbaum families subsequently added between 1966 and 1975. An easement 50' wide along the property's eastern edge belongs to IID, where the original earthen-lined South Alamo Canal existed prior to being lined with concrete (Rister 1995). The purchased properties were administered by the County of Imperial as a county park. Originally envisioned as a general family recreation spot, unauthorized off-highway vehicle activity steadily increased as the industry burgeoned since the late 1970s (Herrick 2007; Rister 1995). According to Herrick (2007), "Heber had a labyrinth of sandy roads, and was said to be a favored retreat/escape route for car thieves and other criminals from the nearby towns. Many a chase was ended here, when the suspects risked it all on the sandy roads and the engineered for street use law enforcement vehicles would give up the chase." A San Diego Gas & Electric (SDG&E) 500kV line was put through the park in 1986 which includes three electrical towers.

Beginning in 2000, the park was being operated by DPR under lease agreement to the County of Imperial. The first formalized trails for off-highway vehicle use were developed that same year (DPR 2000). As part of the trail development, Associate State Archaeologist Phil Hines requested a records search from the Southeast Information Center at the Imperial Valley College Desert Museum in May 1998 and conducted a pedestrian survey of a proposed trail route on March 24, 1999. No cultural resources were identified during this effort, though Hines did note the presence of dredged sand piles with freshwater clam shell forming the berm for the canal and its associated roadway (Hines 1999). Five years later, as a result of budgetary constraints, the County began negotiations to officially transfer the property to DPR, who received title in December 2007. Infrastructure, including picnic tables, armadas, and restroom facilities were installed and a massive clean-up effort was undertaken to remove the debris and vehicles that had been abandoned in the isolated area (Herrick 2007).

HISTORIC BACKGROUND

Previous Research

A records search was conducted on January 28, 2009 by EDAW AECOM at the South Coastal Information Center (SCIC), located at San Diego State University. The archival search consisted of an archaeological and historical records and literature review. The data reviewed included historic maps, the California Register of Historical Resources (CRHR), and National Register of Historic Places (National Register) information for the project area. The search included a 1-mile radius surrounding the project area. This research provides a background on the types of sites that would be expected in the region. The research was also used to determine whether previous surveys had been conducted in the area and what resources had been previously recorded within the project limits. The records search confirmation letter is included in Appendix B.

Research Results

Previous Investigations

The results of the records search indicated that 10 previous investigations have been conducted within a 1-mile radius of the current project area (Table 1). Of these, six are survey investigations, two are Caltrans Historic Property Survey Reports, one is a Caltrans Historic Architectural Report, and one is a cultural resources management plan. Three of these investigations cross the extreme northeast corner of the project area (Crafts 1997; Crafts and White 1997; White and Lortie 1997), while five of these cross the extreme southwest corner of the project area (Bull and Von Werlhof 1982; Crafts 1997; Crafts and White 1997; Townsend 1987; White and Lortie 1997). The majority of the project area has not been previously surveyed.

Table 1. Previous Investigations within a 1-Mile Radius of the Project Area

Author	Title	NADB Number	Date
AEI Consultants	Historic and Cultural Resources Assessment.	1100978	2002
Bull and Von Werlhof	Cultural Resource Study of a Proposed Electric Transmission Line from Jade to the Sand Hills, Imperial County, California.	1100233	1981
Crafts	Historic Property Survey Report – State Route 98.	1100688	1997
Crafts and White	Negative Archaeological Survey Report for State Route 98.	1100832	1997
Gallegos & Associates	Draft: Cultural Resource Survey for the Gateway of the Americas Specific Plan and Constraints Study for the Proposed State Route 7 Corridor Imperial County, California.	1101061	1997
Lewis	Historic Property Survey Report – Negative Findings for State Route 98.	1100669	1999
LSA Associates, Inc.	Draft Cultural Resources Assessment: Southern California Gas Company Natural Gas Transmission Line 6902 Revised Border Crossing Location Imperial County, California (NO. CA-060-05-01).	1100633	1995
Townsend	Southwest Powerlink: Cultural Resources Management Plan.	1100311	1984
Underwood	Archaeological Survey of Four Rio-Tel Cellular Tower Locations: Tamarisk, Hawk 2E, Holtville, and Blu-In Park, Imperial Valley, California.	1100979	2003
White and Lortie	Historic Architectural Survey Report Alternative Routes 1, 1A, 1B, 4, 4A, for State Route 7 Between State Route 98 and Interstate 8, Near Holtville, Imperial County 11-IMP-7, P.M. 1.2/6/7 EA 068000.	1100833	1997

Cultural Resources

Only one cultural resource has been previously recorded within a 1-mile radius of the project area. This site, CA-IMP-7364H (P-13-007364), is a segment of the South Alamo Canal first recorded by LSA Associates, Inc. in 1995. The canal was originally constructed in 1908 and has undergone periodic reconstruction. A concrete lining was added in 1989 and involved

backfilling operations using sand from two undetermined locations within Heber Dunes SVRA (Rister 1995). An update to the original site form was conducted in 2005 by EDAW AECOM. While this site borders along the eastern boundary of Heber Dunes SVRA, this segment of the canal has not been previously recorded.

Historic Records Review and Other Research

In addition to a check for previously recorded archaeological sites and isolates, the records search included a check of listings in the National Register, CRHR, and Directory of Historic Properties data for Imperial County. No historic resources are within a 1-mile radius of Heber Dunes SVRA.

In addition to reviewing the records on file at the SCIC, EDAW AECOM staff contacted the Pioneer Museum on April 6, 2009 to request any additional information on the history of the Heber Dunes area. No additional information was forthcoming. EDAW AECOM archaeologist Stacey Jordan also contacted Bill and Susan Claverie, owners of the adjacent agricultural land to the west, as well as Mike Claverie, local resident, via telephone on April 14, 2009 to discuss their knowledge of the project area.

Native American Consultation

DPR archaeologist Jennifer Parker contacted the Native American Heritage Commission via letter on March 23, 2009 to solicit a Sacred Lands File Search and request a list of contacts in order to conduct consultation (Appendix C). No responses have been received to date.

RESEARCH DESIGN AND METHODS

The goal of the present study was to identify and describe any cultural resources that are present within Heber Dunes SVRA that may be affected by future development and maintenance of the park facilities as guided by the General Plan. An intensive pedestrian survey of all accessible areas of the park was conducted by EDAW AECOM archaeologists.

RESEARCH QUESTIONS

Archaeological inventories require specific frameworks for data collection and recording. A research design is used to shape this framework so that specific research goals can be met. Although research designs are generally most important during testing, evaluation, and data recovery phases of archaeological research, they are also important during the inventory process in focusing site identification and documentation efforts.

While no sites have been previously identified within Heber Dunes SVRA, the area's history suggests particular site types that may be present. Late Prehistoric archaeological sites generally cluster along the 40-foot contour line that represents the high stand shoreline of ancient Lake Cahuilla, especially at "embayments, along sandy spits, at the mouths of major washes, and where parallel dune systems support mesquite groves" (Schaefer 1994). Other Late Prehistoric sites have been observed along successively lower shorelines of the lake during its final recession, including fish camps containing fish bone and stone fish traps. The project area, however, is at an elevation slightly below the maximum shoreline of the ancient lake and would likely have been covered at the lake's high stand. Instead of long-term occupation, evidence of later ephemeral use of the area during the lake's recession may be present. This may include evidence such as pot drops or fluvial secondary deposits of prehistoric material. Further the area may contain evidence relating to early historic settlement in the Imperial Valley following the introduction of irrigation-based agriculture. Using the information obtained on prehistoric and historic land use during background historical research, the survey and inventory strategy focused on recognizing and documenting data needed to address these issues.

FIELD METHODS

A field survey of the Heber Dunes SVRA was conducted by EDAW AECOM archaeologists Stacey Jordan, Matt Tennyson, Nick Doose and Brian Spelts from March 31 to April 2, 2009. Intensive pedestrian survey utilizing standard archaeological field methods was the preferred method and was utilized in all areas where feasible. Intensive pedestrian survey methods consisted of walking in 15-meter spaced transects in any areas where slope, vegetation, and/or terrain would allow transects to be maintained. Team members climbed all accessible dune slopes to examine dune tops, survey trail cuts, and examine dune stratigraphy in eroded areas to determine if subsurface material was present. Visibility in the majority of the area was 100%, with limited visibility ranging from 50% to 0% in vegetated areas. Some areas, primarily

tamarisk-covered dune tops and dense areas in the southern portion of the park, were inaccessible due to vegetation. Reconnaissance survey methods were used in areas that could not be walked through systematically. Global Positioning System (GPS) units (Trimble Geo XT sub-meter accuracy) were used to record the cultural resources that were identified within the project area. Resources were recorded on appropriate DPR 523 forms (Appendix D). Digital photography was used to document the project area and any identified resources. Photographs and field notes are on file at the San Diego office of EDAW AECOM.

REPORT OF FINDINGS

One new resource, temporary site number HD-1, was identified within the Heber Dunes SVRA during the course of this study (Figure 4). This site consists of a disturbed secondary deposit of early twentieth-century historic material on what appears to be dredged and mounded sandy soils in the northeast portion of the project area.



Figure 4. HD-1 Site Overview, Looking South

The site consists of a scatter of historic ceramics and glass, with bundles of barbed wire in various locations. Artifact concentrations presently on the surface were created by a Heber Dunes SVRA assistant who identified the site prior to the archaeological survey. Diagnostic artifacts include a Knowles Taylor & Knowles ceramic fragment pre-dating 1931 and a hobbleskirt Coca-Cola bottle post-dating 1915. Also identified at the site were two exotic palm trees, one still standing and one dead at the southern boundary of the site (Figure 5). Historic maps do not indicate that any former building or structure was present at this location, and no other buildings or structures appear to have been present in the Heber Dunes property.



Figure 5. HD-1 Site Overview, Looking North

Although it lies outside of the project area proper, the previously recorded South Alamo Canal (CA-IMP-7364H, P-13-007364) was updated during the course of this study. The canal was originally recorded by LSA Associates in 1995. While the earliest portions of the South Alamo Canal were constructed in 1908, the portion of the canal along the eastern boundary of the park was constructed sometime between 1945 and 1957 based on the 1945 15' and 1957 7.5' Calexico USGS topographic quadrangles. It was lined with concrete in 1989 (Rister 1995). As a linear element of the extensive Imperial Valley water conveyance system, the canal was considered eligible as a contributing element to a broader historic district – the entire conveyance system – which is of national significance and meets National Register eligibility criteria (see Appendix D).

DISCUSSION AND CONCLUSIONS

One new resource, temporary site number HD-1, was identified during the intensive pedestrian archaeological survey of the Heber Dunes SVRA. HD-1 consists of a secondary deposit of historic material appearing to date to the first half of the twentieth century. It is known that IID was involved in backfilling and ground-disturbing operations as part of the lining of the South Alamo Canal in 1989 (Rister 1995), which likely resulted in the disturbed mounds of soil presently visible.

The site is not associated with a particular occupation in this location and appears to contain primarily mixed household refuse, including beverage, medicinal, and domestic product glass bottles as well as domestic tableware ceramics. The site has been disturbed by the piling of artifacts into concentrations by well-intentioned park staff.

Preliminary assessment of this site suggests that it is not eligible to the CRHR and does not constitute a historical resource under CEQA. According to CEQA, if:

...a project may affect an archaeological resource, the agency shall determine whether the effect may be a significant effect on the environment. If the project may cause damage to an important archaeological resource, the project may have a significant effect on the environment.

CEQA establishes principles for cultural resource preservation and criteria for the identification of important cultural resources. Section 15064.5 of CEQA provides definitions of significance and types of impacts to archaeological and historical resources. As cited in this section, the lead agency shall consider a resource to be 'historically significant' if the resource meets the CRHR criteria for eligibility or is listed in a local historic register or deemed significant in a historical resource survey. According to the CRHR criteria, a significant historical resource is one which:

- A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- B. Is associated with the lives of persons important in our past;
- C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- D. Has yielded, or may be likely to yield, information important in prehistory or history.

An additional consideration is given to a resource's integrity. The significance of a resource may be impaired if it does not retain integrity of setting, feeling, association, workmanship, design, or materials.

As a general refuse scatter dating after the initial settlement and development of irrigation and agriculture in the Imperial Valley, temporary site number HD-1 is not associated with events that have made a significant contribution to broad patterns of state history and does not appear eligible under Criterion A. Because it cannot be associated with a particular household, residential occupation or person, it not does appear to be significant under Criterion B. As an archaeological site composed of a general scatter of unassociated household ceramics and glass, neither the resource nor any of its components are eligible under Criterion C. Temporary site number HD-1 appears to be a disturbed, secondary deposit with no stratigraphy and limited artifact provenance. This disturbed deposit contains the range, both in date and type, of historic artifactual materials commonly seen distributed in scatters undeveloped and less developed areas of Imperial County. Documentation and analysis of diagnostic artifacts and recording of the site has exhausted its potential to yield information significant to local or state history. As such, it is no longer eligible under criterion D. Therefore, the level of any future impacts as a result of the proposed project would be less than significant. Further, the mounded deposit overgrown by tamarisk and other vegetation at HD-1 retains little to no integrity of setting, feeling or association.

The South Alamo Canal (CA-IMP-7364H, P-13-007364), while over 45 years of age along the segment adjacent to Heber Dunes SVRA's eastern boundary, is outside of the project area and would not be affected by any future undertakings associated with the proposed project at Heber Dunes SVRA.

MANAGEMENT RECOMMENDATIONS

While one new resource was identified within the boundaries of the Heber Dunes SVRA during the course of the present study, documentation and analysis of diagnostic artifacts and recording of the site has exhausted its potential to yield information significant to local or state history and reduced the level of any future impacts posed by proposed projects to less than significant. No other prehistoric or historic archaeological resources and no built environment resources were identified within the project area. As such, any proposed undertakings within the Heber Dunes SVRA would not have a significant effect on historical resources under CEQA.

Should any unanticipated resources be discovered during construction or maintenance activities in the project area, they must be evaluated by a qualified archaeologist to determine their eligibility to the CRHR and significance under CEQA. The preferred mitigation for cultural resources under CEQA is avoidance of the resource. Should significant resources be discovered during construction or maintenance activities, data recovery efforts would be required to gather sufficient information from the site to reduce the impact to less than significant under CEQA.

If buried human remains are encountered during any activity in the project area, work must be halted and the DPR archaeologist must be notified. If the remains are determined to be Native American, the NAHC will be notified within 24 hours as required by Public Resources Code 5097. The NAHC will notify designated Most Likely Descendants who will provide recommendations for the treatment of the remains to DPR within 24 hours.

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1994 The Challenge of Archaeological Research in the Colorado Desert: Recent Approaches and Discoveries. *Journal of California and Great Basin Anthropology* 16(1):60-80.

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2006 *Cultural Resources Survey of La Posta Mountain Warfare Training Facility San Diego, California*. Unpublished report on file at the South Coastal Information Center.

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1980 *Lake Cahuilla: Late Quaternary Lacustrine History of the Salton Trough, California*. Master's thesis, Department of Geosciences, University of Arizona.

1982 The Lowland Patayan Ceramic Tradition. In *Randall H. McGuire and Michael B. Schiffer (eds) Hohokam and Patayan: Prehistory of Southwestern Arizona*. Academic Press, New York, pp. 275-297.

1983 Late Holocene Lacustrine Chronology and Archaeology of Ancient Lake Cahuilla. *Quaternary Research* 19:373-387.

Western Regional Climate Center

2009 *El Centro 2 SSW, California Period of Record Monthly Climate Summary*. Available at: <http://www.wrcc.dri.edu/cgi-bin/cliRECTM.pl?ca2713>. Retrieved April 20, 2009.

APPENDIX A

RESUMES FOR KEY PERSONNEL

STACEY JORDAN, PhD
Senior Archaeologist

EDUCATION

Ph.D., Anthropology, Rutgers University, 2000
M.Phil., Anthropology, Rutgers University,
New Brunswick, NJ, 1995
M.A., Anthropology, Rutgers University, 1994
B.A. with High Distinction, Anthropology
University of California, Berkeley, 1991

AFFILIATIONS

Society for American Archaeology
Register of Professional Archaeologists

CERTIFICATIONS AND APPROVALS

County of San Diego Approved Consultant
List for Archaeological Resources
County of San Diego Approved Consultant
List for Historic Resources
County of Riverside Approved Cultural
Resources Consultant (No. 222)

AWARDS

2008 - San Diego AEP Outstanding
Environmental Resource Document Finalist,
Boulder Oaks Open Space Preserve (winner
Honorable Mention at September 25 AEP
Awards)
2008 - Riverside County Planning
Department, *Certificate of Appreciation for the
Cultural Resources Working Group*
2006 - City of San Diego Historical Resources
Board Award of Excellence, *CCDC Downtown
San Diego African-American Heritage Study*
2005 - California Preservation Foundation
Preservation Design Award, *CCDC Downtown
San Diego African-American Heritage Study*
2005 - AEP Outstanding Public Involvement/
Education Program, *CCDC Downtown San
Diego African-American Heritage Study*
2005 - APA, San Diego Section Focused
Issue Planning Award Honorable Mention,
*CCDC Downtown San Diego African-
American Heritage Study*

GRANTS AND FELLOWSHIPS

2003, Wenner-Gren Foundation for
Anthropological Research Individual Research
Grant Team Member: "Analysis and
Interpretation of Archaeological Residues from
Excavations at the Castle of Good Hope,
Cape, South Africa"
1996-1997, Wenner-Gren Foundation for
Anthropological Research, Predoctoral
Research Grant #6021
1994-1995, Wenner-Gren Foundation for
Anthropological Research, Predoctoral
Research Grant #5739
1992-1996, Rutgers University Excellence
Fellowship

Dr. Stacey Jordan has been professionally involved in the fields of archaeology and history for over a decade. Her specialty in historical archaeology combines the use of material culture and the archival record in anthropologically driven analyses of cultural resources. Dr. Jordan was the recipient of the Excellence Fellowship at Rutgers University, as well as multiple research grants from the Wenner-Gren Foundation for Anthropological Research. She is the author of various publications as well as numerous papers that have been presented at national and international conferences. Dr. Jordan is particularly well versed in the analysis of historical ceramics and has taught courses in the method and theory of historical archaeology as well as in the identification and analysis of historical ceramics and glass. She has extensive experience in archival research and historical writing, and has worked on projects spanning from early colonial contact to the recent past. In addition, Dr. Jordan has served on a variety of prehistoric and historic excavations both in the United States and abroad. Supplementing her work in cultural resources management, she conducts research on ceramics, community development, and identity construction in colonial South Africa.

PROJECT EXPERIENCE

San Nicolas Island Archaeological Evaluations, Ventura County, CA
Project Manager

CLIENT: NAVFAC Southwest

Project Manager for ongoing archaeological evaluation of prehistoric sites CA-SNI-316, 361 and 550 on San Nicolas Island in the Channel Islands of the California Bight. This project involves the significance testing and analysis of Middle and Late Holocene sites and synthesis of results with existing island-wide archaeological data.

Jefferson National Expansion Memorial Environmental Impact Study
Senior Archaeologist, St. Louis, MO

CLIENT: U.S. National Park Service

Co-author for prehistoric and historical archaeology background and impact analysis sections related to the proposed expansion of the Jefferson National Expansion Memorial (Gateway Arch) in St. Louis, Missouri and East St. Louis, Illinois.

Heber Dunes SVRA General Plan & Environmental Impact Report
Cultural Resources, Imperial County, CA

Cultural Resources Task Manager/Senior Archaeologist

CLIENT: California State Parks

Ongoing Cultural Resources Phase I Survey and Inventory of Heber Dunes State Vehicular Recreation Area. This project involves the analysis of existing cultural resources conditions, assessment of proposed facilities maintenance and development impacts, and recommendations for the treatment of cultural resources.

Emergency Storage Project Cultural Resources - Lake Hodges,
San Diego County, CA

Senior Archaeologist

CLIENT: San Diego County Water Authority

Senior Archaeologist and report co-author for data recovery project at site CA-SDI-10,920 along Lake Hodges. The project involves integration of regional data to provide context for the analysis of CA-SDI-10,920 and examination of the Late Prehistoric occupation of the San Dieguito River Valley around present-day Lake Hodges.

STACEY JORDAN, PhD

Old Town State Historic Park Jolly Boy Project, San Diego, CA
Senior Archaeologist

CLIENT: California State Parks

Contributor to the archaeological data recovery report for the Jolly Boy Saloon site in Old Town San Diego State Historic Park. Contributions to this project involve the synthesis of existing data on Old Town San Diego and development of an archaeological and historic context for the analysis and interpretation of recovered material.

Boulder Oaks, Sycamore/Goodan, El Capitan/Oakosis/
El Monte/Steltzer Open Space Preserve and Regional Park Cultural
Resources Inventories, San Diego County, CA

Project Director

CLIENT: County of San Diego Department of Parks and Recreation

Project director for Phase I pedestrian survey and cultural resource inventories of Open Space Preserves and Regional Parks in unincorporated central San Diego County. The projects involved the identification and documentation of prehistoric and historic resources, built environment features, and existing infrastructure to assist the Department of Parks and Recreation in resource management. Inventory reports included extensive archival research and historical narrative, an inventory of identified sites, and management guidelines for potentially significant cultural resources developed in consultation with Native Americans where appropriate. Work done before joining EDAW.

State Route 94 Operational Improvements Inventory and Evaluation,
San Diego County, CA

Project Director

CLIENT: Parsons Brinkerhoff

Director of cultural resources efforts and Caltrans coordination for survey, documentation, and evaluation related to proposed operational improvements along an 18-mile stretch of State Route 94 in San Diego County. Development of Caltrans-format documentation for archaeological and built environment resources. Work done before joining EDAW.

Santa Rosa San Jacinto Mountains National Monument Trails
Inventory, Riverside County, CA

Project Director

CLIENT: Bureau of Land Management

Directed cultural resources inventory of trail systems within the Santa Rosa San Jacinto Mountains National Monument, including documentation of prehistoric and historic routes and associated resources within trail corridors. Completed cultural resources inventory report for BLM, including BLM-format GIS database. Work done before joining EDAW.

Southern California Edison As-Needed Archaeological Services,
Statewide

Project Director

CLIENT: Southern California Edison

Director of on-call survey, resource identification, documentation, testing, and evaluation efforts related to Southern California Edison infrastructure replacements and development throughout the state on both private and public lands, including BLM, USACE, and USFS. Product involves completion of State of California DPR forms, assessment of resource significance according to NRHP eligibility and CEQA significance criteria, and management recommendations. Work done before joining EDAW.

STACEY JORDAN, PhD

Hercules Gunpowder Point Historical Resources Evaluation,
Chula Vista, CA

Project Director

CLIENT: U.S. Fish and Wildlife Service

Project director for the historical evaluation of the Hercules Powder Company Gunpowder Point facility in Chula Vista. Supervised archival and historical research, directed field survey and documentation efforts, and provided National Register eligibility evaluation for the site. Work done before joining EDAW.

Downtown San Diego African-American Heritage Study, San Diego, CA
Senior Historian

CLIENT: Centre City Development Corporation (CCDC)

Documented the development and growth of the African-American community in downtown San Diego through the 19th and 20th centuries. Archival information, oral histories, architectural evaluations, and recognition of potential archaeological sites were used to document the African-American community's economic, social, and political history in the downtown area, and to identify an African-American Thematic Historic District. Work done before joining EDAW.

Mannasse's Corral/Presidio Hills Golf Course, San Diego, CA

Project Manager

CLIENT: Presidio Hills Golf Course

Directed and managed archaeological excavation and interpretation of historic refuse and features related to Old Town San Diego located within the city-owned Presidio Hills Golf Course property. Conducted analysis of excavated material, researched and interpreted site history and use, and assessed resource significance, broadening the understanding of Old Town's archaeological signature and historic lifeways. Work done before joining EDAW.

Old Town San Diego State Historic Park Archaeological Excavations,
San Diego, CA

Project Manager

CLIENT: Bazaar del Mundo LLC/California State Parks

Managed excavation and analysis of 19th-century deposits recovered from two locations within Old Town State Historic Park, representing roadbed flood wash and tavern refuse, respectively. Oversaw ceramic and glass cataloguing, and conducted historical research and interpretation on specific site uses and depositional processes. Prepared State of California DPR forms, and assessed resource significance according to NRHP eligibility criteria. Work done before joining EDAW.

Cole Road and Dogwood Road Widening Projects, Imperial County, CA

Project Director

CLIENT: City of El Centro

Project management of field survey and documentation efforts related to the widening of Dogwood Road and Cole Road in unincorporated Imperial County. Produced CEQA and Caltrans-format documentation related to identified resources and proposed project impacts. Work done before joining EDAW.

Blackwater West Cultural Resources Phase I and Phase II Studies,
Potrero, CA

Project Director

CLIENT: Blackwater USA

Project director overseeing the survey of an approximately 850-acre area in eastern San Diego County and test excavation of identified prehistoric sites. Directed archaeological and built environment documentation, Extended Phase I testing, and Phase II testing efforts under the new County of San Diego Guidelines implemented September 2006. Work done before joining EDAW.

STACEY JORDAN, PhD

Vine/Carter Hotel Historical Assessment, San Diego, CA
Project Manager

CLIENT: Wakeland Housing

Conducted extensive archival research and historical assessment of the African-American-owned Vine/Carter Hotel building in San Diego's East Village. Conducted historical research on the building's ownership history and development; its historical uses, managers, and residents; and its place in San Diego's historical African-American community. Photographed and documented the building according to Office of Historic Preservation guidelines, prepared State of California DPR forms, and assessed the building's significance according to local, state, and federal significance criteria. As a result of the project, the Vine/Carter Hotel was nominated as a significant historical resource by the City of San Diego Historical Resources Board. Work done before joining EDAW.

Mission San Gabriel Gardens Excavation, Jump Start Project,
San Gabriel, CA
Project Manager

CLIENT: Terry A. Hayes Associates

Conducted monitoring and excavation of Spanish colonial and American-era deposits associated with the construction of the original Mission San Gabriel and later 19th-century occupations. Documented the sites according to State Office of Historic Preservation guidelines, and assessed the resources according to NRHP and CEQA significance criteria. Work done before joining EDAW.

Lillian Grant Property Public Art Project, San Diego, CA
Project Manager

CLIENT: Wakeland Housing

Provided historical research services and written text incorporated into the public art commissioned for the redevelopment of the historical Lillian Grant Property in the East Village of San Diego. The public art, located at 14th and J streets at the Lillian Place affordable housing complex, commemorates the histories, experiences, and contributions of African-Americans to the development of San Diego and the East Village area in particular. Work done before joining EDAW.

Lillian Grant Property Historic American Building Survey (HABS),
San Diego, CA
Project Manager

CLIENT: Wakeland Housing

Supervised HABS of the Lillian Grant properties in the East Village community of San Diego, submitted to the City of San Diego. Oversaw archival quality photographic documentation, and architectural line and plan drawings, as well as completed required HABS historical narrative on the subject buildings. Work done before joining EDAW.

San Gabriel Mission Trench Excavation, San Gabriel, CA
Senior Archaeologist

CLIENT: Terry A. Hayes Associates

Conducted historical and archival research on the prehistory and history of the San Gabriel Mission and surrounding areas to assess potential impacts of proposed below-grade railway trench. Compiled historical narrative, identified potential subsurface features, and recommended appropriate mitigation strategies. Work done before joining EDAW.

Camp Seely National Register Evaluation, San Bernardino National
Forest, San Bernardino County, CA
Senior Historian

CLIENT: City of Los Angeles Department of Recreation and Parks

Conducted NRHP evaluation of the early-20th-century Camp Seely recreational camp facility leased by the City of Los Angeles in the San Bernardino National Forest. Conducted historical and archival research on the

STACEY JORDAN, PhD

Camp's history and development; its individual buildings; and its architects, including Sumner P. Hunt and Silas R. Burns. Photographed and documented the building according to Office of Historic Preservation guidelines, prepared State DPR forms, and assessed resource significance according to NRHP eligibility criteria. Work done before joining EDAW.

Camp Radford National Register Evaluation, San Bernardino National Forest, San Bernardino County, CA

Senior Historian

CLIENT: Michael Brandman Associates

Conducted NRHP evaluation of the early-20th-century Camp Radford recreational camp facility leased by the City of Los Angeles in the San Bernardino National Forest. Conducted historical and archival research on the Camp's history and development; its individual buildings; and its architects, Sumner P. Hunt and Silas R. Burns. Photographed and documented the building according to Office of Historic Preservation guidelines, prepared State DPR forms, and assessed resource significance according to NRHP eligibility criteria. Work done before joining EDAW.

High Winds Wind Farm Project, Solano County, CA

Senior Archaeologist

CLIENT: Environmental Services Associates (ESA)

Conducted archival and historical research on the settlement and development of southern Solano County. Evaluated nine historic resources and surrounding landscape significance according to CEQA criteria. Completed historical background and assessment report, photographically documented resources and landscape, and updated State DPR forms for previously identified resources. Work done before joining EDAW.

PUBLICATIONS

Books

Jordan, Stacey. In prep. Coarse Earthenware Collections at the Cape: "...diverse kinds of baked and glazed earthenware..." and European Stoneware at the Cape: Masks, medallions and merchandise. In: *The Material Culture of the Dutch East India Company at the Cape of Good Hope, 1652-1800*, Carmel Schrire (ed.). Left Coast Press, Walnut Creek, CA.

Jordan, Stacey. 2002. Classification and Typologies. In: *Encyclopedia of Historical Archaeology*, Charles E. Orser, Jr. (ed.). Routledge. London.

Jordan, Stacey and Carmel Schrire. 2002. Material Culture and the Roots of Colonial Society at the South African Cape of Good Hope. In: *The Archaeology of Colonialism*, Claire Lyons and John Papadopoulos (eds.). Getty Research Institute. Los Angeles.

Journal Articles

Jordan, Stacey C. 2000. Coarse Earthenware at the Dutch Colonial Cape of Good Hope, South Africa: A history of local production and typology of products. *International Journal of Historical Archaeology*, Vol. 4, No. 2.

Jordan, Stacey, Duncan Miller and Carmel Schrire. 1999. Petrographic Characterization of Locally Produced Pottery from the Dutch Colonial Cape of Good Hope, South Africa. *Journal of Archaeological Science*, Vol. 26.

Jordan, Stacey. 1994. Colonial Coarse Earthenware at the South African Cape of Good Hope, 1669-c.1900. *Crosscurrents*, Vol. VI.

STACEY JORDAN, PhD

PAPERS AND PRESENTATIONS

Dissertation: "The 'Utility' of Coarse Earthenware: Potters, Pottery Production and Identity at the Dutch Colonial Cape of Good Hope South Africa (1652-1795)"

The Development of Colonial Culture at the South African Cape of Good Hope: Examining the many "functions" of utilitarian ceramics. Paper presented at the Archaeology of Colonialism Symposium, Archaeological Institute of America Annual Meetings, January 2001.

Urban Archaeology and the Focus of Memory: a study in the history and narrative of South Central Los Angeles. Paper Presented at the Society for American Archaeology Annual Meeting, March 2002.

Historical Archaeology as Anthropology: Artifacts, Identities, and Interpretations in the Study of the Recent Past. Presented at the World Archaeological Congress, January 2003.

Old Town Made New Again: The Archaeology of San Diego's First Settlement. Paper presented at the Society for California Archaeology Annual Meeting, April 2005.

Past as Present: Tourism and Archaeology in Old Town San Diego. Presented at the Society for Applied Anthropology Annual Meeting, April 2005.

The Face of Mercantilism at the South African Cape of Good Hope: Ceramics and the Hesitant Empire. Presented at the Society for Historical Archaeology Annual Meeting, January 2006.

A Patchwork History: Interweaving Archaeology, Narrative and Tourism in Old Town San Diego. Paper presented at the Society for American Archaeology Annual Meeting, March 2007.

Mannasse's Corral: The Life History of a Piece of Old Town. Presented to the Presidio Council, January 2008.

Making the Past Present: Archaeology, Heritage and Tourism in Old Town San Diego. Paper presented at the Society for California Archaeology Annual Meeting, April 2008.

CEQA and Historical Resources. Guest Lecturer, California Environmental Quality Act, UCSD Extension Course, August 2008.

MATTHEW TENNYSON, RPA
Staff Archaeologist

EDUCATION

BA, Archaeology, History (Minor), Boston University

MA, Anthropology, San Diego State University
Thesis Title: "Straight Out of Dixie": An Analysis of the Architecture of the Nate Harrison Cabin

AFFILIATIONS

Society for American Archaeology

Society for Historical Archaeology

Society for California Archaeology

CERTIFICATIONS

Register of Professional Archaeologists (RPA)

HONORS AND AWARDS

Phi Kappa Phi Honors Society, San Diego State University Chapter

Norton Allen Scholarship, San Diego State University Department of Anthropology, Spring 2006

Ethics Bowl – Society for American Archaeology 71st Annual Meeting, San Juan, Puerto Rico

PAPERS AND PRESENTATIONS

Cultural Interaction in the Archaeological Record: A Landscape View of Old Town San Diego. Paper presented at the Society for California Archaeology 2008 Annual Meeting, Burbank, California.

"Straight Out of Dixie": The Architecture of the Nate Harrison Cabin. Presentation at the San Diego Museum of Man.

Old Town San Diego on the San Diego Landscape. Paper presented at the Society for Historical Archaeology 2009 Annual Meeting, Toronto, Canada

Matthew Tennyson has 7 years of archaeological experience in historic and prehistoric archaeology and is currently a staff archaeologist for EDAW's San Diego office. He has spent the last 7 years working in California on archaeological and historical projects across California and Nevada. His experience includes archaeological testing, data recovery, survey, GIS mapping, monitoring, report production, and historic research for private, city, county, state, and federal clients.

Mr. Tennyson also has experience teaching archaeology and anthropology at the university level, teaching introductory-level classes as well as instructing students in archaeological field schools. He also has experience in laboratory analysis and artifact curation of archaeological collections.

Mr. Tennyson has made public presentations regarding his archaeological work. He has authored or co-authored several articles and reports based on his work in both the academic and public sectors. He currently specializes in historical resources, including the assessment and recordation of historic archaeological sites and historic structures.

PROJECT EXPERIENCE

Niland Solar Cultural Resources Evaluation

Principal Investigator

CLIENT: LADWP/ County of Imperial

Principal investigator and field director for cultural resources surveys and evaluations of approximately 1,000 acres near Niland, California. The project included archaeological and architectural surveys, the identification and evaluation of newly and previously recorded archaeological sites, Native American consultation, and production of an evaluation report submitted to the LADWP and the County of Imperial.

Tulare Lakes Drainage District Cultural Resources Survey

Principal Investigator

CLIENT: Municipal Water District/ Tulare Lakes Drainage District

Principal investigator and field director responsible for archaeological survey of a proposed pipeline and water treatment plant in the San Joaquin Valley. The project included archaeological survey of a proposed water drainage pipeline and water treatment facility, research and recordation of historic irrigation canals, and preparation of a cultural resources report.

SR-76 Mission to I-15 CEQA and NEPA Studies

Principal Investigator

CLIENT: Caltrans

Principal investigator for a cultural resources study of two proposed alternatives for the expansion of State Route 76. The project included leading cultural resources surveys, identifying impacts to cultural resources within project area, coordinating with project engineers to avoid negative impacts to cultural resources, and conducting preliminary testing of archaeological sites within the project area. Additional duties included updating archaeological sites, authorship of an Archaeological Survey Report, and coordination with Native American tribes.

San Clemente Island SWAT 1/TAR 4 Area Archaeological Testing

Staff Archaeologist

CLIENT: US Department of the Navy, Southwest

Staff archaeologist assisting in the testing and evaluation of nine archaeological sites on San Clemente Island, California. The project included

MATTHEW TENNYSON

auger probing of archaeological sites, test unit excavation, and GIS mapping of cultural layers using an electronic total station.

Southern Nevada Supplemental Airport EIS, Jean, NV

Staff Archaeologist

CLIENT: ENSR

Staff archaeologist for a cultural resources survey of a proposed airport in southern Nevada. The project included surveying and recording prehistoric and historic archaeological sites in the Ivanpah Valley region of southern Nevada. Additional duties included authorship of report sections and historic research related to early European and American exploration, early roads, the development of railroads, and the history of mining in the area.

CONFIDENTIAL PROJECT

Staff Archaeologist/Historian

CLIENT: CONFIDENTIAL CLIENT

Archaeologist and historian for proposed solar power plant near California City, CA. Project duties included survey of pipeline alignments in order to assess potential impacts to historic structures in the area, historic research related to early exploration and the development of various social and economic activities in the Mojave Desert region, and assistance in the production of historical architecture and archaeological resources reports.

Yuma Lateral Pipeline Project

Staff Archaeologist

CLIENT: North Baja Pipeline, LLC

Archaeologist and field director for additional survey areas and addendum report for North Baja Pipeline project in Yuma, Arizona

Collwood Pines Apartments

Principal Investigator

CLIENT: The Dinnerstein Companies

Principal investigator responsible for cultural resources on a private development of apartments in San Diego, California. The project included research into the project area and surrounding area to assess the likelihood of discovering cultural resources during the construction phase of the project.

Valley Center Road Bridge Replacement Mitigation

Staff Archaeologist

CLIENT: County of San Diego

Staff archaeologist responsible for Native American contacts and assisting in report preparation for a bridge replacement near Pauma Reservation in San Diego County, California

Main Street Bridge Replacement HPSR

Staff Archaeologist

CLIENT: **Caltrans**

Staff archaeologist responsible for assisting in production of HPSR for a bridge replacement near Temecula, California

Lost Horse DMND

Staff Archaeologist

CLIENT: Indio Water Agency

Project archaeologist responsible for historical research, cultural resources survey, and report for proposed water tank and pipeline near the City of Indio.

SR-125 Johnson Canyon Project

Staff Archaeologist

CLIENT: Caltrans

Conducted archaeological surveys of sites impacted by brush clearing at Johnson Canyon. Duties included investigating sites to determine whether significant impacts had occurred and reporting findings to Caltrans District 11.

MATTHEW TENNYSON

Jolly Boy Tavern Data Recovery, Old Town, San Diego, CA
Staff Archaeologist

CLIENT: California Department of State Parks

Staff archaeologist for excavation of early 19th century adobes located at the Jolly Boy Tavern in Old Town San Diego. Project duties included the excavation of trenches to uncover the historic foundations of adobes, on site interpretations, and coordination with State Parks archaeologists.

Williams Communication Archaeological Services Project Williams,
Elko, NV

Archaeologist

CLIENT: Williams Communications

Archaeological technician responsible for the testing of sites along a communications line outside Elko, Nevada. Project duties included survey, relocation, testing, and recordation of sites along Highway 80. Work was performed prior to joining EDAW.

Mojave River Pipeline Reaches 4A and 4B, Daggett, CA

Archaeologist

CLIENT: Mojave Water Agency

Archaeological technician for a water pipeline in Daggett, CA. Project duties included survey of the proposed alignment, recordation of historic resources, historical research, archaeological monitoring for prehistoric and historic resources, laboratory analysis, cataloging and curation, and report production. Work was performed prior to joining EDAW.

El Cajon Animal Shelter Survey and Testing, El Cajon, CA

Archaeologist

CLIENT: City of El Cajon

Staff archaeologist for the survey and testing of milling features located near the El Cajon Animal Shelter. Project duties included locating and recording bedrock milling features and test excavation units to determine the depths of cultural materials at the site. Work was performed prior to joining EDAW.

Testing of Lithic Quarry at CA-SDI-13655, Camp Pendleton, CA

Archaeologist

CLIENT: U.S. Navy, NAVFAC SW, San Diego

Staff archaeologist for the testing of a quarry site located on Camp Pendleton USMC Base. Additional duties included laboratory analysis of lithic materials, artifact cataloging and curation, and assistance in report production. Work was performed prior to joining EDAW.

Tijuana River Valley, San Diego, San Diego County, CA

Archaeologist

CLIENT: San Diego County Department of Parks and Recreation

Staff archaeologist for proposed trail alignments in the Tijuana River Valley Regional Park, San Diego, CA. Project duties included the identification and recordation of historic and prehistoric cultural resources. Work was performed prior to joining EDAW.

Market Street Village, San Diego, CA

Archaeologist

CLIENT: Market Street Village Developers

Laboratory technician and curation coordinator for late-19th and early-20th century artifacts recovered during archaeological monitoring for a condominium in downtown San Diego. Project duties included cataloging and curating recovered archaeological resources, artifact quantification and analysis, and assistance in report productions. Work was performed prior to joining EDAW.

MATTHEW TENNYSON

Talega Community Development Project, San Clemente, CA
Archaeologist

CLIENT: Talega Associates

Archaeological technician for various sites at the Talega master-planned community. Project duties included archaeological excavation of CA-ORA-907, archaeological and paleontological monitoring of construction activities, laboratory analysis of cultural materials, and the design and installation of cultural resources display at the Vista Del Mar Elementary School. Work was performed prior to joining EDAW.

Lassen National Park Field Treatment, Lassen County/
Plumas County, CA

Archaeologist

CLIENT: National Park Service

Archaeological technician for pre-burn survey to relocate and record new cultural resources as well as updates for previously recorded cultural resources. Project duties included survey of hiking trails and open areas in Lassen Volcanic National Park and coordination of field crews. Work was performed prior to joining EDAW.

Armstrong Ranch Development Project, Santa Ana, CA

Archaeologist

CLIENT: Shea Homes

Archaeological monitor for proposed townhome development at the Armstrong Ranch in Santa Ana, CA. Work was performed prior to joining EDAW.

Orange County Water District West End, Orange County, CA

Archaeologist

CLIENT: Orange County Water District

Archaeological monitor for the installation of new water pipeline running from Orange, CA to Huntington Beach, CA. Work was performed prior to joining EDAW.

Encino Water Quality Improvement Project, Los Angeles County, CA

Archaeologist

CLIENT: Los Angeles County Department of Public Works

Archaeological monitor at the Encino Reservoir during construction activities in association with improvements to the reservoir. Work was performed prior to joining EDAW.

Tustin Field 1 (Tustin PA 20) Development Project, Tustin, CA

Archaeologist

CLIENT: John Laing Homes

Archaeological monitor for historic and prehistoric cultural materials encountered during grading activities. Duties included construction monitoring and recordation of prehistoric artifacts encountered during grading. Work was performed prior to joining EDAW.

Tustin Field 2 (Tustin PA 21) Development Project, Tustin, CA

Archaeologist

CLIENT: John Laing Homes

Archaeological monitor and lead contact with the client. Duties included construction monitoring and recordation of historic artifacts encountered during grading. Work was performed prior to joining EDAW.

SELECTED REPORTS

Metropolitan Water District/Tulare Lakes Drainage District Kings County Agricultural Drainage Water Treatment Project Cultural Resources Report. EDAW, San Diego (2008)

MATTHEW TENNYSON

Archaeological Survey Report for the State Route 76 Highway Improvement Project South Mission Road to Interstate 15 San Diego County, California. EDAW, San Diego (2008)

Cultural and Archaeological Resources Survey Report for the Niland Solar Energy Project Initial Study, Niland, Imperial County, California. EDAW, San Diego (2008)

Addendum 2 to the Cultural Resources and Survey Report for the Yuma Lateral Pipeline Project. EDAW, San Diego (2008)

Phase I Cultural Resources Investigation for IWA Lost Horse Reservoir and Pipeline Project, City of Indio, Riverside County, California. EDAW, San Diego (2008)

Peak to Playa: Southern Nevada Supplemental Airport Environmental Impact Statement Cultural Resources Report, Clark County, Nevada. Contributing author with James Cleland and Christy Dolan. EDAW, San Diego (2008)

CONFIDENTIAL Solar Energy Project Historic Architectural Resources Report, Kern County, California. Contributing author with Jennifer Hirsch. EDAW, San Diego (2008)

CONFIDENTIAL Solar Energy Project Archaeological Resources Report, Kern County, California. Contributing author with Rebecca Apple and Wayne Glenny. EDAW, San Diego (2008)

Monitoring and Mitigation of Seventeen Historic Features at CA-SDI-17,581, San Diego, California. Co-authored with Alex Wesson and Kevin Hunt. SWCA Environmental Consultants (2006)

Identification and Documentation of Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony of a Late Period Kumeyaay Archaeological Collection. Co-authored with Dr. Lynn Gamble, San Diego State University (2005)

Cultural Resources Reconnaissance of the Vereecken Property, Winchester Hills, Riverside County, California. SWCA Environmental Consultants (2004)

Archaeological Monitoring and Historic Trash Recovery During Grading For The Tomlinson Park Development, Located In Brea, Orange County, California. Co-authored with Joan Brown. SWCA Environmental Consultants (2003)

APPENDIX B

RECORDS SEARCH CONFIRMATION LETTER



South Coastal Information Center
4283 El Cajon Blvd., Suite 250
San Diego, CA 92105
Office: (619) 594-5682
Fax: (619) 594-4483
scic@mail.sdsu.edu
scic_gis@mail.sdsu.edu

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM CLIENT IN-HOUSE RECORDS SEARCH

Company: EDAW
Company Representative: Cheryl Bowden-Renna
Date: 1/28/2009
Project Identification: Heber Dunes (07080197.10)

Search Radius: 1 mile

Historical Resources: SELF

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: SELF

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: SELF

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: SELF

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Copies: 30

Hours: 1

APPENDIX C

**NATIVE AMERICAN HERITAGE COMMISSION
CONTACT LETTER**



Ocotillo Wells District
PO Box 360
Borrego Springs, CA 92004
760-767-5391 – Fax: 760-767-4651

March 23, 2009

RECEIVED
MAR 25 2009

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

The California Department of Parks and Recreation is conducting various cultural studies in Heber Dunes State Vehicular Recreation Area (SVRA) in Imperial County.

I am requesting any information and input that your office may have regarding Native American concerns, sacred lands, and contact persons or organizations for this project area.

PROJECT TITLE: Heber Dunes SVRA General Plan
PROJECT LOCATION: Township 16S, Range 15E
Sections 26 & 35
USGS 7.5' Calexico Quadrangle
(See attached Map for park boundaries)

Please forward any information you have to:

Jennifer Parker
California State Parks
Off-Highway Motorized Vehicle Recreation Division
Ocotillo Wells District
PO Box 360
5172 Highway 78
Borrego Springs, CA 92004
Fax: 619-220-5400
Email: jparker@parks.ca.gov

If you have any questions or require additional information, please contact me at 760-767-1326.

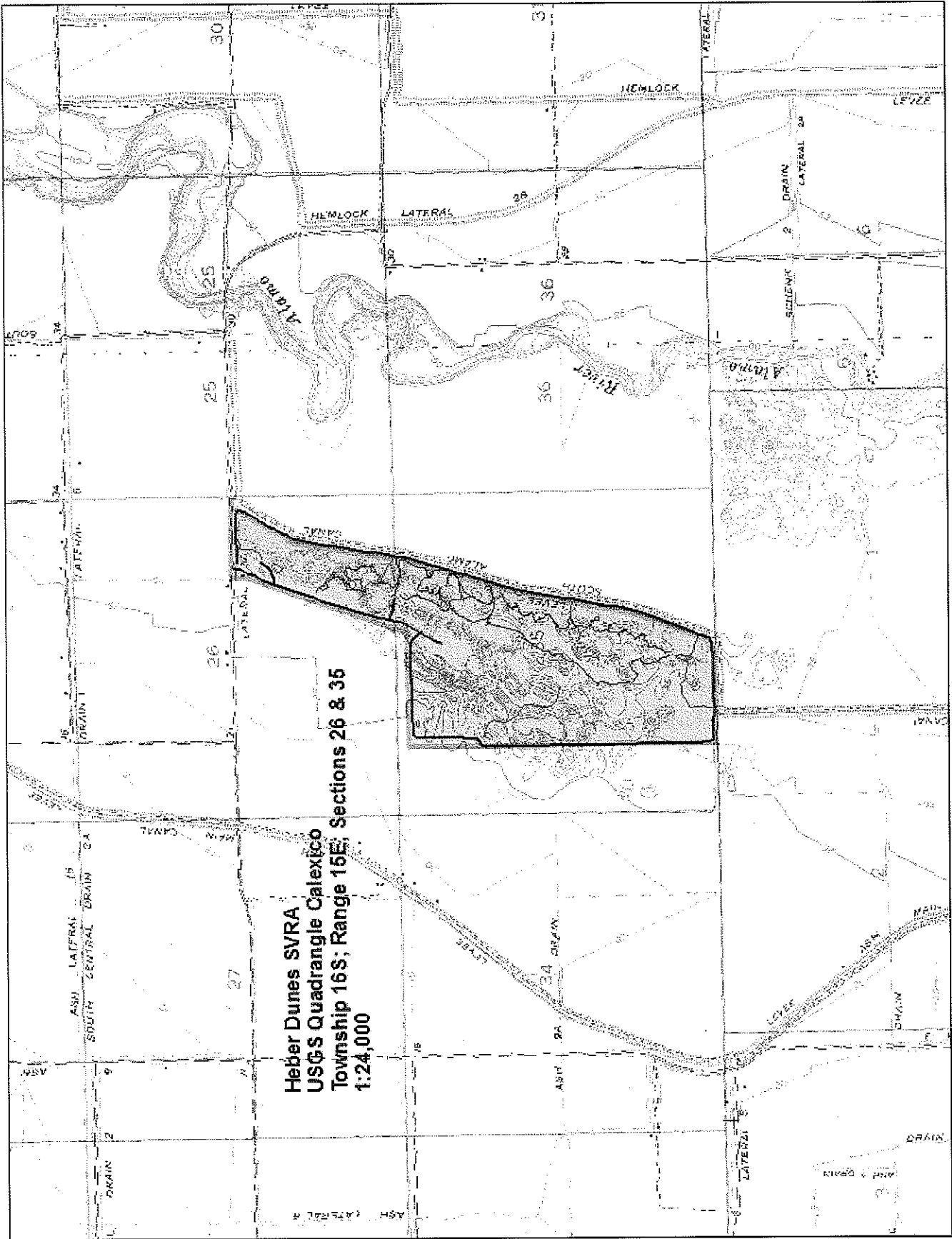
Sincerely,

Jennifer Parker
Ocotillo Wells District

Attachment: map

Cc:

Eric Hollenbeck
Kathy Dolinar
Stacey Jordan (EDAW)



Heber Dunes SVRA
USGS Quadrangle Calexico
Township 16S; Range 15E; Sections 26 & 35
1:24,000

APPENDIX D
DPR 523 FORMS

CONFIDENTIAL

Appendix G
Preliminary Geologic Review

PRELIMINARY GEOLOGIC REVIEW
HEBER DUNES SVRA,
APN 055-190-29, 37; 055-280-22, 23, 25, 29
1610 Heber Dunes Road
HEBER, CALIFORNIA

for

Ms. Connie Moen, Project Manager
EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, CA 92101

April 2009



2395 East Pescadero Avenue
Heber, CA 95304

April 3, 2009
Project No. 9641-02

EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, CA 92101

Attn.: Ms. Connie Moen, Project Manager

**Re: Preliminary Geologic Review, Heber Dunes SVRA Site,
(APN 055-190-29, 37; 055-280-22, 23, 25, 29)
1610 Heber Dunes Road, Heber, CA 92249**

Dear Ms. Moen,

Wright Environmental Services, Inc. (Wright) has prepared this Preliminary Geologic Review for Heber Dunes SRVA for the above referenced site. If you have any questions please call or write.

Respectfully submitted,
Wright Environmental Services, Inc.

John Lynch
President

Christopher M. Palmer
Engineering Geologist CEG 1262

Attachments

Figure 1 – Site Location Map
Figure 2 – Site Topographic Map
Figure 3 – Regional Geologic Map
Figure 4 – Imperial Valley Earthquake Oct. 15, 1979
Figure 5 – Site Sketch Map
Figure 6 - Regional Groundwater Flow Map Imperial Valley
Figure 7 – Alquist-Priolo Earthquake Fault-Rupture Hazard Map

1.0 Introduction

Wright Environmental Services, Inc. (Wright) has conducted a Preliminary Geologic Review of the property identified as the Heber Dunes SVRA Property Site at 1610 Heber Dunes Road (APN 055-190-29, 37; 055-280-22, 23, 25, 29) west of the City of Heber, Imperial County, California. The preliminary geologic review assessment included a brief review of the regional geology, and a visual reconnaissance for the subject 343-acre parcel and preliminary review of potential geologic hazards on the property.

The subject property is located in an agricultural region about 6 miles west of the City of Heber. The area consists of a roughly rectangular-shaped parcel of land of approximately 343-acres (see Figures 1 and 2). The subject property has historically never been farmed. The current use is for a State day park, Heber Dunes State Recreational Vehicle Area (SRVA) for recreational vehicle use. The site is improved with picnic areas, restrooms, park shop and building storage areas, a ranger residence and recreational vehicle camping areas. Electrical power transmission towers cross the southwestern part of the park.

1.1 Certification and Limitations

The investigation was conducted on behalf of and for EDAW, Inc. for use in a Preliminary Geologic Review (literature search and site surface reconnaissance only) of the specific section of the property in general conformance with the consulting practice. No soil or groundwater samples were collected or analyzed, or exploratory borings were drilled on the property for this work. This report and findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party, in whole or in part without prior written consent of Wright Environmental Services, Inc. However, Wright Environmental Services, Inc. acknowledges and agrees that the report may be conveyed to and relied upon by EDAW, Inc., its successors and assigns, rating agencies and bond investors, Off-Highway Motor Vehicle Recreation Division of the California Department of State Parks and Recreation for Heber Dunes SRVA.

Wright Environmental Services, Inc., its principal, and its employees have no present or contemplated interest in the property. Our employment and compensation for preparing this report are not contingent upon our observations or conclusions.

The investigation has been performed in a professional manner using the degree of care and skill ordinarily exercised by and consistent with the standards of competent consultants practicing in the same or similar locality as the Project. The reported observations and conclusions are limited only by the reported assumptions and limiting conditions and represents our unbiased and professional analysis, opinions, and conclusions. No other warranty, expressed or implied, is made or intended. The information in this report is from sources deemed to be reliable; however, no representation or warranty is made as to the accuracy thereof.

No Preliminary Geologic Review can wholly eliminate uncertainty regarding the potential for geologic hazards in connection with a property. This study is designed to reduce but not eliminate

uncertainty regarding the existence of such conditions in a manner that recognizes reasonable limits of time and cost for the intended purpose.

2.0 Site Location and Description

Wright has conducted a Preliminary Geologic Review of the property identified as the Heber Dunes SVRA Property Site at 1610 Heber Dunes Road (APN 055-190-29, 37; 055-280-22, 23, 25, 29) (Township 16 South, Range 15 East, Sections 26 and 35) west of the City of Heber, Imperial County, California. The property covers about 343 acres of sand dunes and is currently used as Heber Dunes State Recreational Vehicle Area (SRVA) for recreational vehicle use. One ranger lives on the property near the park building cluster in the north-central part of the park.

The property lies within the Imperial Valley is an essentially flat, alluvium-filled basin following the same northwest trend as the Salton Trough. Located in the south-central part of Imperial County, the valley has an area of about 990,000 acres in the United States and is bounded to the north by the Salton Sea and extends south into Mexico. Algodones Dunes and Sand Hills lie to the east; to the west are the Fish Creek Mountains, Superstition Hills, Superstition Mountains, and the Coyote Mountains. The Yuha Desert lies to the southwest. The Imperial Valley is separated from the Gulf of California by the ridge of the Colorado River delta (Morton 1977; Dept. of Energy 2004).

3.0 Regional Geology

The Heber Dunes SVRA is located in the southern Imperial Valley that is part of the Salton Trough, a structural and topographic depression that lies within the Basin and Range physiographic province. The Salton Trough is an extension of the East Pacific Rise as it emerges from the 1,000-mile long trough occupied by the Gulf of California and continues northward to Palm Springs. The area is tectonically active affected by the East Pacific Rise that is a crustal spreading center characterized by a series of northwest trending transform faults, the northernmost being the San Andreas fault. The tectonic activity of the East Pacific Rise has downwarped, downfaulted, extended, and laterally affected the sediments within the Salton Trough. Its underlying geologic complexity is masked by the relatively featureless surface of the basin, filled by thousands of feet of marine and nonmarine sediments (Morton 1977; Real et al. 1979). Several other active faults occur in and near the project area including the Imperial and Brawley faults (see Figures 1, 2, 3, and 4).

The sub-sea-level basin of the Salton Trough has received a continuous influx of sand, silt, and clay derived from the surrounding mountains and the Colorado River, which created ephemeral lakes in the basin until roughly 300 years ago. Tertiary and Quaternary sedimentary rocks and alluvium and lake deposits underlie the alluvial cover (Strand, 1962; Kahle and others 1984). The depth to basement rock is estimated from 11,000 to 15,400 feet, though metamorphism of sedimentary deposits are known to occur at depths as shallow as 4,000 ft because of the high heat flows associated with crustal spreading. High heat flows also give rise to geothermal steam; several "known geothermal resources areas" have been delineated by the U.S. Geological Survey (USGS) in the Imperial Valley (Morton 1977). As recently as 300 years ago Lake Cahuilla filled the Imperial Valley basin to the elevation of the Colorado River delta. The shoreline of this

ancient lake has an elevation of about 35 ft (11 m) above MSL and is visible today. Between the east side of the ancient lakebed and the Algodones Sand Hills is the Imperial East Mesa, a terrace of the Colorado River delta.

4.0 Site Geology, Soil and Surface Reconnaissance

The subject site lies in the southeastern portion of the Imperial Valley. Regional geologic maps the region as underlain by Quaternary lake deposits and alluvium (Strand 1962). Quaternary sand dunes are mapped on the property. The Imperial fault crosses the property from southeast to northwest (Real et al. 1979; Kahle et al. 1984; see Figures 3, 4, 5, 6 and 7). A 1937 aerial photograph in Youd and Wieczorek (1982) shows that the property region appears to be predominantly covered with sand dunes with a stream channel to the west of the site.

Surface soil of the Rositas soil association consists of nearly level to moderately steep (with slopes up to 30%), excessively well-drained sand to silt loam formed in the transitional area between the ancient beachline of the Lake Cahuilla basin to the middle and upper levels of alluvial fans from the Imperial West Mesa (USDA 1981). The USDA describes these soils as deep (to at least 60 in.), highly permeable, and have a low water capacity. The soil erosion hazard is generally slight, but soils in this unit are susceptible to blowing and erosion during infrequent periods of intense rainfall. These soils are mainly used for desert recreation and wildlife habitat, but they have the potential for irrigated farming.

Wright visited the Heber Dunes SVRA site for a field reconnaissance on March 3, 2009. The field reconnaissance showed that the site is composed of “stabilized” sand dunes (fine sand with a minimal amount of silt, Unified Soil Classification System SP Sand and locally SM Silty Sand) that overlie the Quaternary lacustrine deposits. Soil profiles appear very thin in the vegetated areas. Vehicle tracks revealed some sandy areas that are slightly eroded.

The Imperial fault crosses the southern and central portion of the park (see Figures 4, 5, and 7). Rupture and/or ground distress was noted at the South Alamo Canal (crack) and on the subject property (linear mark on the ground) in Youd and Wieczorek (1982). Mr. Vic Herrick, the park ranger who currently resides on the property stated that he occasionally feels small temblors assumed caused by the Imperial fault. Wright did not observe any indications of possible fault related distress in the 1979 area previously reported during our site walk.

5.0 Regional Faults and Seismicity

The zone of northwest-trending strike-slip faults in the Salton Trough defines the transform boundary between the Pacific and North American plates (see Figures 2, 3, and 4). The Imperial Valley is a seismically active region. In the past 100 years, 5 earthquakes with a magnitude equal to or greater than 6.5 have occurred: December 30–31, 1914 (2 earthquakes with magnitudes of 6.5 and 7.1), just below the U.S.-Mexico border; May 18, 1940 (magnitude 6.7), along the Imperial Fault; October 15, 1979 (magnitude 6.6), also along the Imperial Fault; and most recently, November 24, 1987 (magnitude 6.6), along the Superstition Hills Fault. Interim seismic activity is characterized by smaller magnitude earthquake swarms (Real et al. 1979). An Alquist-Priolo Earthquake Fault Zone Map (mapped in 1974) has been prepared for the

Calexico 7.5 minute map and a fault rupture zone has been mapped on the property. Real and others mapped traces of the 1979 Imperial Valley earthquake surface rupture effects onto the property (see Figure 4). The trace of the 1979 surface rupture on the property appears to be similar to that of the 1940 earthquake and surface effects mapped on the site (Real and others 1979; Youd and Wiczorek 1982).

6.0 Regional and Local Groundwater

Very large groundwater aquifers underlie the Imperial Valley. The main aquifers occur above the Imperial Formation occurring predominantly in the nonmarine deposits of the late Tertiary (Pliocene) and Quaternary age (McDonald and Loeltz 1976; Planert and Williams 1995). Large quantities of drinking and agricultural water are drawn from aquifers in the East Mesa area several miles north and northeast of the site. An area of flowing wells was noted in this same area by Loeltz et al. (1975), and fresh water wells may tap useable water to depths of about 1,000 feet or deeper below the surface in some locations.

Planert and Williams (1995) report a large groundwater mound from the historic recharge from seepage from the All-American and Coachella Canals has recharged the shallow aquifers north of the site. Regional groundwater flow is to the north and northeast (see Figure 6) and is locally affected by canal and stream recharge and discharge and groundwater pumping. Overall regional groundwater flow is to the northwest and the axis of the Imperial Valley. There are also known geothermal areas at depth to the north of the site. Unlined canals may provide local recharge to the shallow aquifers (such as the small canal along the western edge of the site).

Groundwater quality in the region (in the property region East Mesa and southeastern part of the Imperial Valley) appears to be generally good although there may be elevated Total Dissolved Solids with Chloride and Sulphate (Loeltz et al. 1975; Planert and Williams 1995). Most water has elevated Total Dissolved Solids that may vary from about 498 to 7,280 Milligrams per liter, but generally tends to be below about 2,000 Mg/l in the region (varies from fresh to slightly saline, and locally moderately saline). Groundwater quality has been affected by seepage recharge from the large irrigation canals (All-American Canal that imports Colorado River water). Groundwater with higher sulphate content is an indication of Colorado River water recharge. Water quality sampled at well at Township 16 South Range 16 East Section 12 (several miles from the subject site) showed a water sample from a depth of 92 to 94 feet had 750 Mg/l sodium, 600 Mg/l sulphate, 900 Mg/l chloride and 2,550 Total Dissolved Solids (in Loeltz et al. 1975).

6.1 Groundwater in the Park Vicinity

Groundwater in shallow aquifers in the project site area is estimated to occur within 50 feet of the surface; USGS drill boreholes advanced for earthquake studies after the 1979 earthquake showed shallow groundwater about 1.5 meters (about 5 feet) below the surface near Heber Road a few miles north of the property. The South Alamo Canal borders the eastern edge of the property. The Alamo River occurs about one half to one mile east of the site. The park rangers stated that there are no water wells on the property.

The water used on the site is drawn from the South Alamo Canal and treated on-site for park use. Locally dense areas of vegetation occur on the property. Densely vegetated areas occur along the

eastern park boundary near the South Alamo Canal; seepage from the canal may promote more dense vegetation in this area.

7.0 Preliminary Review of Geologic Hazards

7.1 Ground Rupture, Groundshaking and Liquefaction from Earthquakes

Ground rupture from active faulting has been observed on-site and an Alquist-Priolo Earthquake Fault Zone (Fault-Rupture Hazard Zone) has been mapped on the property (see Figures 3, 4, and 7). Information presented by Real et al. (1979, pg. 262) for the 1979 earthquake report “maximum lateral displacement is about 55 centimeters in Heber Dunes.” On this basis, surface rupture has occurred on the site and can be expected to occur again in future earthquakes on the Imperial fault. The rupture apparently occurred in the near fault vicinity in the southern portion of the site near the fault and was in the same area as the 1940 earthquake (Real et al. 1979; Youd et al. 1982).

Earthquakes will generate groundshaking from seismic waves moving through alluvium and rock from the event. Wright plotted the site location on the California Geological Survey Probabilistic Seismic Hazards Mapping Ground Motion Page (website) that estimates ground acceleration for the site; this is an initial estimate only and not a rigorous analysis of the site subsurface conditions. An estimate of 0.847 peak ground acceleration is estimated for the property location from the State website page. In our opinion this indicates that strong ground motion and shaking will affect the park property from earthquakes.

Earthquakes cause liquefaction when water-saturated material is transformed from a solid state to a liquid state, and may occur in most soil types. Cyclic earthquake vibrations results in compaction and increased pore water pressure and finally expulsion of water from material. Youd (1982) reports that sand boils and ground cracks were present at the South Alamo Canal and Highway 98 and linear mars on ground on the Heber Dunes SRVA. Real (1979) noted an occurrence of lateral spreading that may have been caused by liquefaction at depth (see discussion below).

7.2 Landslides and Slope Stability, Lurching and Lateral Spreading

Low sand dunes cover the site at Heber Dunes. The field visit did not reveal any large slope instability or landslide problems. The recreational vehicle use is confined to established trails and there is some minor erosion due to this use. The vegetation appears to have stabilized the low hills or dunes and slope problems were not reported to Wright. No landslides were reported in the Heber dunes area from the 1979 earthquake.

Earthquakes may generate ground distress through lurching and lateral spreading. Lurching creates ground cracks that open as a result of strong ground shaking during an earthquake; sand boils may be associated with lurch cracks. Lateral spreading is a type of ground failure on gently sloping ground that involves the lateral movement of “tongue-shaped” masses toward an exposed steep face, such as a creek bank of a stream channel. Lateral spreading may be induced by liquefaction of near horizontal alluvial layers exposed in the steep face.

Mole tracks, sand boils (sediment and water jetting from the subsurface due to groundshaking) and lateral spreading effects were observed in the region from the 1979 earthquake. Real (1979, pg. 263 Photo 8) presents a photograph of lateral spreading along Heber Road that was “probably generated by liquefaction at depth.” Sand boils and linear mole tracks were noted by Real in the area (Photos 5 and 7). On this basis, it is our opinion that there is a moderate to high possibility of lateral spreading and/or lurching and sand boils occurring in or around the project site.

7.3 Site Drainage, Erosion and Flooding

Our field visit indicated site drainage that surface drainage appeared good and may locally drain internally from the dunes or low hills. Overall drainage is to the west and northwest and may be confined by the perimeter road and canals directing it along the road. The property is not mapped within a 100-year flood zone (FIRM 0600651025B). Given the site elevation and low dunes above the irrigation canal and Alamo River, the possibility of the site flooding is relatively low. Some local and minor erosion appears to have occurred from vehicle use.

7.4 Other Hazards

The project site lies in the Imperial Valley away from the mountains and well north of the Colorado River Delta. There do not appear to be any hazards to the site due to volcanoes or tsunamis.

8.0 Conclusions

The Heber Dunes SRVA occurs in the southeastern part of the Imperial Valley. The Imperial Valley is located in the Salton Trough and is a large downwarped and downfaulted basin into which thousands of feet of alluvial sediments have been deposited. Quaternary sediments and sand dunes cover the subject property. Groundwater is estimated to occur between about 5 to 20 feet below the surface. Very large groundwater aquifers underlie the regions that produce large quantities of drinking and agricultural water. Large active faults occur in the surrounding hills and in the valley floor, including the Imperial fault that has historically generated damaging earthquakes.

Wright visited the site for a field reconnaissance on March 3, 2009. The field reconnaissance showed that the site is a day use recreational vehicle park underlain by “stabilized” sand dunes composed of sand and silty sand that overlie the Quaternary lacustrine deposits. Soil profiles appeared very thin in the vegetated areas. Vehicle trails revealed some sandy areas that are slightly eroded. The Imperial fault crosses the southern and central portion of the park (see Figures 4, 5, and 7). Rupture and/or ground distress from the 1979 Imperial Valley Earthquake was noted at the South Alamo Canal (crack) and on the subject property (linear mark on the ground) in Youd and Wiczorek (1982). Mr. Vic Herrick, the park ranger who currently resides on the property stated that he occasionally feels small temblors assumed caused by the Imperial fault. Wright did not observe any indications of possible fault related distress in the 1979 area previously reported during our site walk

The park rangers stated that there are no groundwater supply water wells on the property. Water is drawn from the South Alamo Canal and treated for park use. Large groundwater aquifers underlie the region and produce large quantities of groundwater. The groundwater quality is generally good with locally elevated total dissolved solids and may have variable levels of chloride and sulphate. The South Alamo Canal occurs at the eastern property border and is assumed in use most of the year and is also assumed to be a seepage recharge source for the shallow aquifer in the park vicinity.

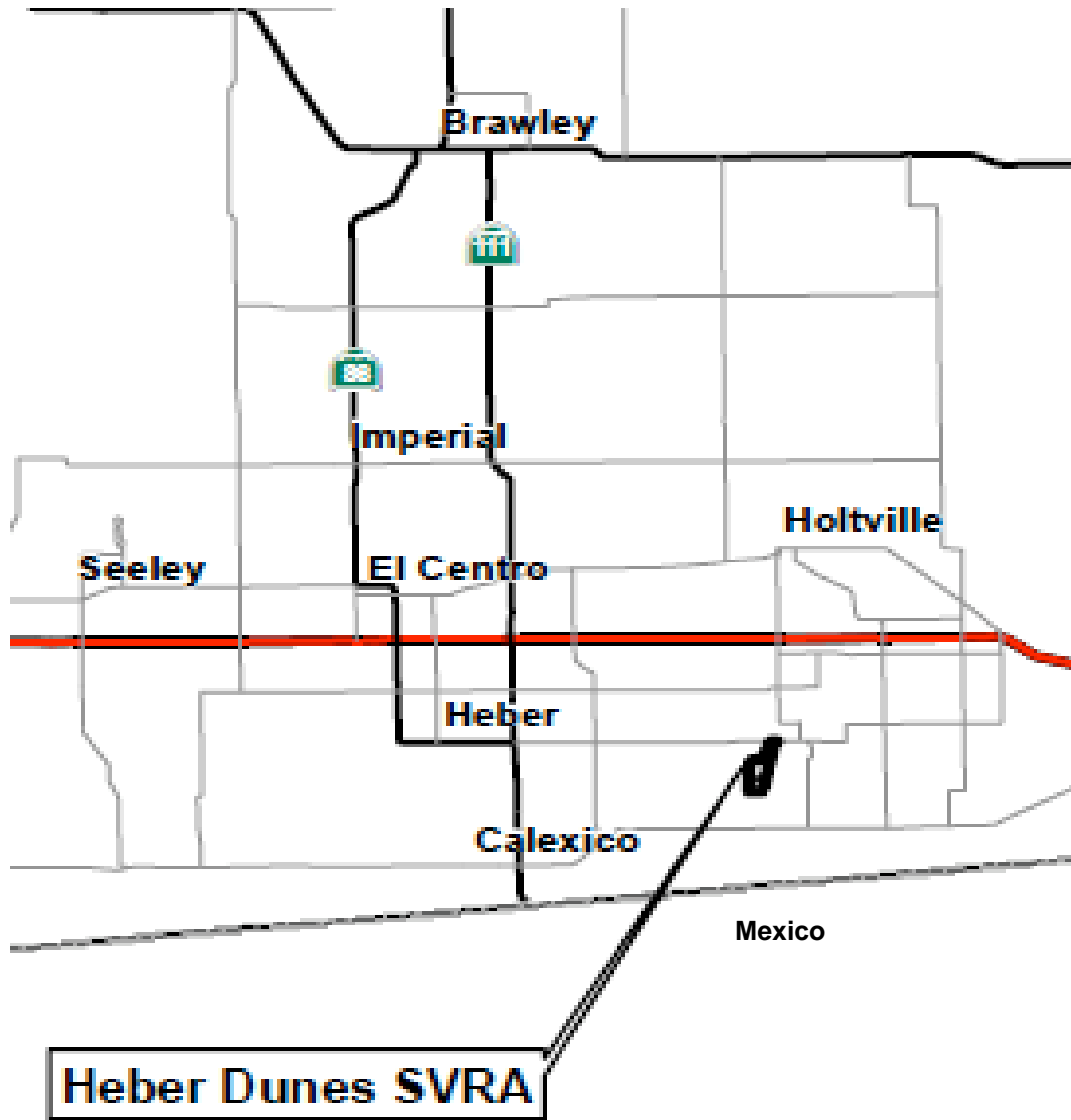
A preliminary review of geologic hazards revealed the following:

- An Alquist-Priolo Earthquake Fault Zone (Fault-Rupture Hazard Zone) is mapped for the Imperial fault on the southern part of the Heber Dunes SVRA. About 55 centimeters of lateral offset was noted in Heber Dunes from the October 15, 1979 Imperial Earthquake. Related earthquake effects including ground cracking, sand boils and lateral spreading were observed near the park property from that earthquake. Future earthquakes on the Imperial fault can be expected to cause ground rupture and strong to very strong groundshaking on the property. If future development is anticipated for the property, rigorous investigations for geologic hazards and engineering studies should be performed. Any proposed development within the mapped Earthquake Fault Zone requires geologic investigation on the fault and report(s) review by the oversight agencies.
- The vegetation appears to have stabilized the low hills/dunes and slope problems and landslides were not reported or observed. The potential for landslides and slope instability appears low overall, however earthquake groundshaking could cause slope problems.
- The Heber Dunes SVRA rises slightly above the plain and appears to have a low potential for flooding and a relatively low erosion hazard. The recreational vehicle use is confined to established trails and there is some minor erosion due to this use.

In our opinion based upon this information further investigation is not warranted at this time.

9.0 References

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Source: EDAW, Inc.

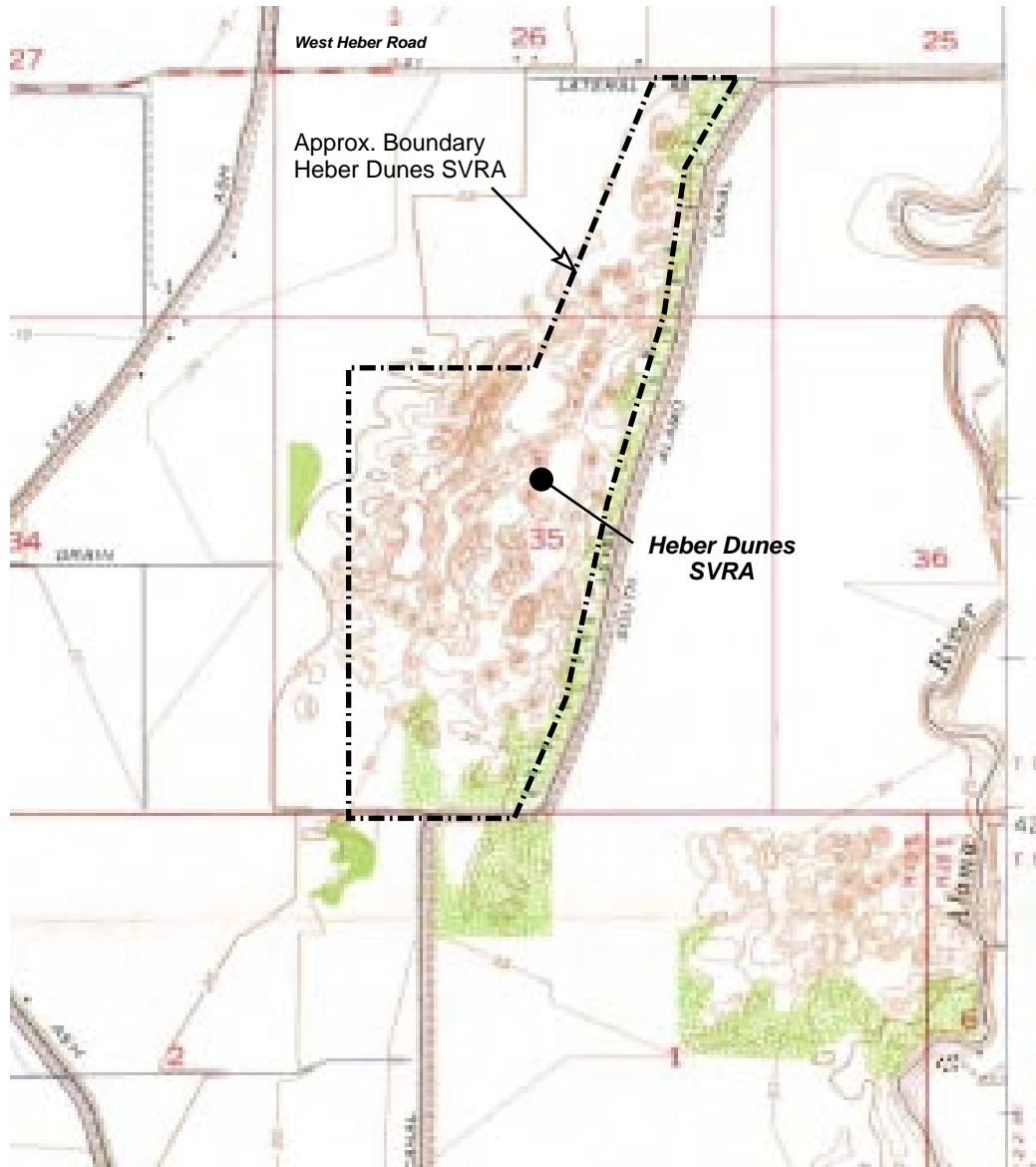
Site Location Map

Heber Dunes SVRA
1610 Heber Dunes Road
Heber, CA

Proj. No.: 9641-09
Scale: none
Date: Apr. 2009

Figure 1

Wright Environmental Services, Inc.
Tracy, CA



1957 Callexico 1957 USGS 7.5' quadrangle

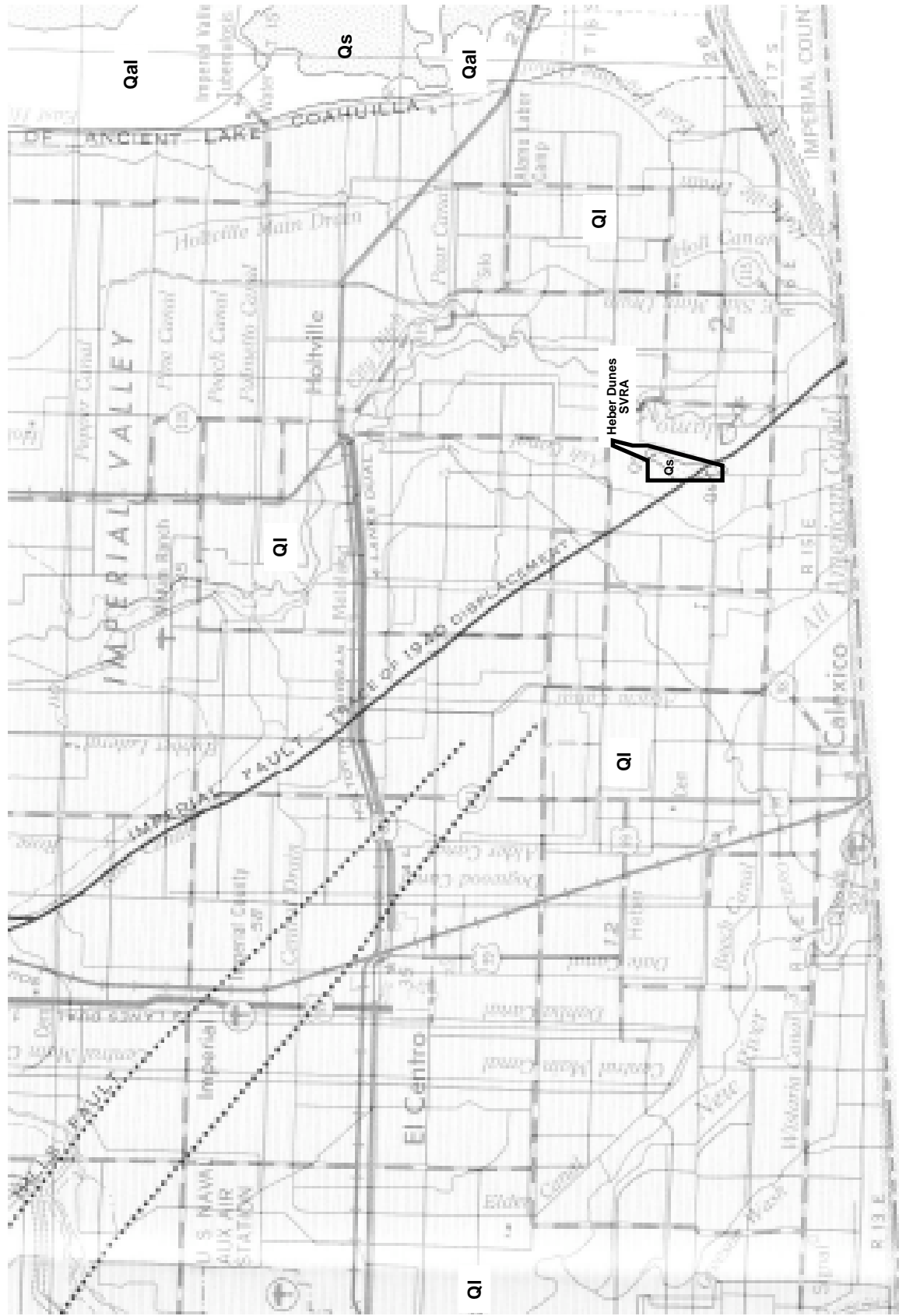
Wright Environmental Services, Inc.
Tracy, CA

**Site Region
Topographic Map**

Heber Dunes SVRA
1610 Heber Dunes Road
Heber, CA

Proj. No.: 9641-09
Scale: 1" ≈ 2000'
Date: Apr. 2009

Figure 2



Mexico

- Qs - Quaternary sand dunes
- Qal - Quaternary alluvium
- Ql - Quaternary lake deposits

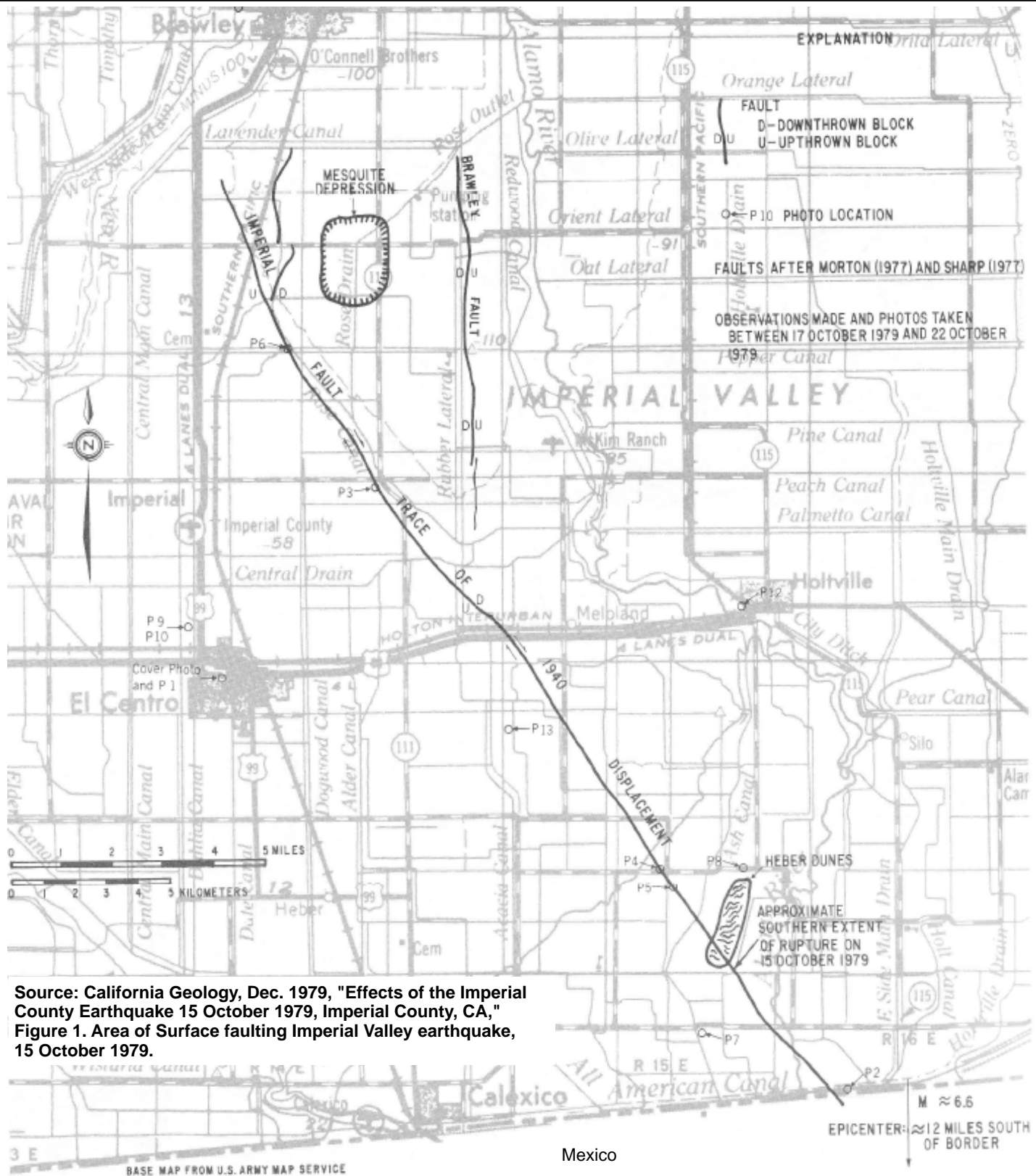
Wright Environmental Services, Inc.
Tracy, CA

Regional Geologic Map

Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: 1" ≈ 5 miles
 Date: Apr. 2009

Figure 3



Source: California Geology, Dec. 1979, "Effects of the Imperial County Earthquake 15 October 1979, Imperial County, CA," Figure 1. Area of Surface faulting Imperial Valley earthquake, 15 October 1979.

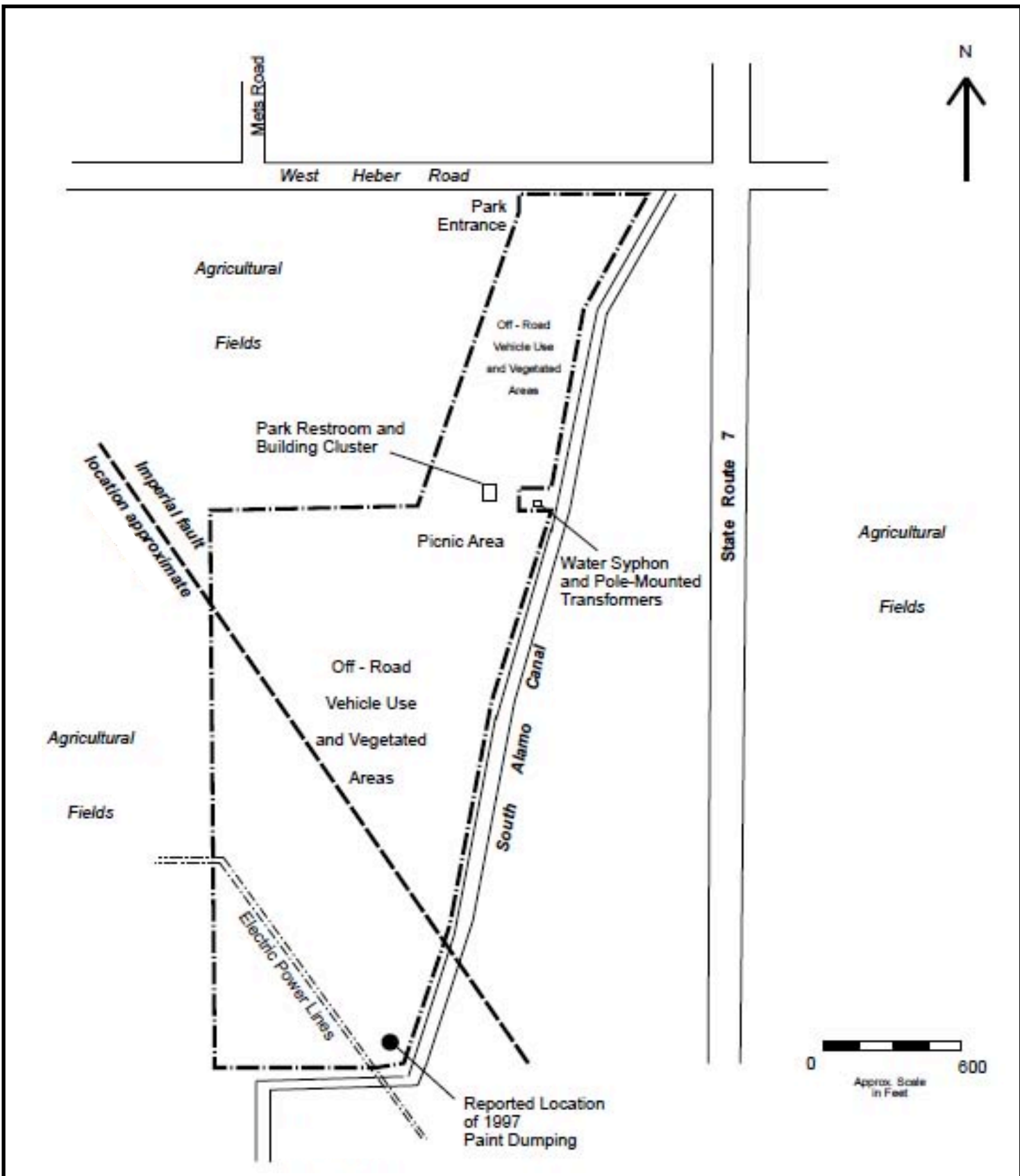
Wright Environmental Services, Inc.
Tracy, CA

Imperial Earthquake of Oct. 15, 1979

Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: as shown
 Date: Apr. 2009

Figure 4

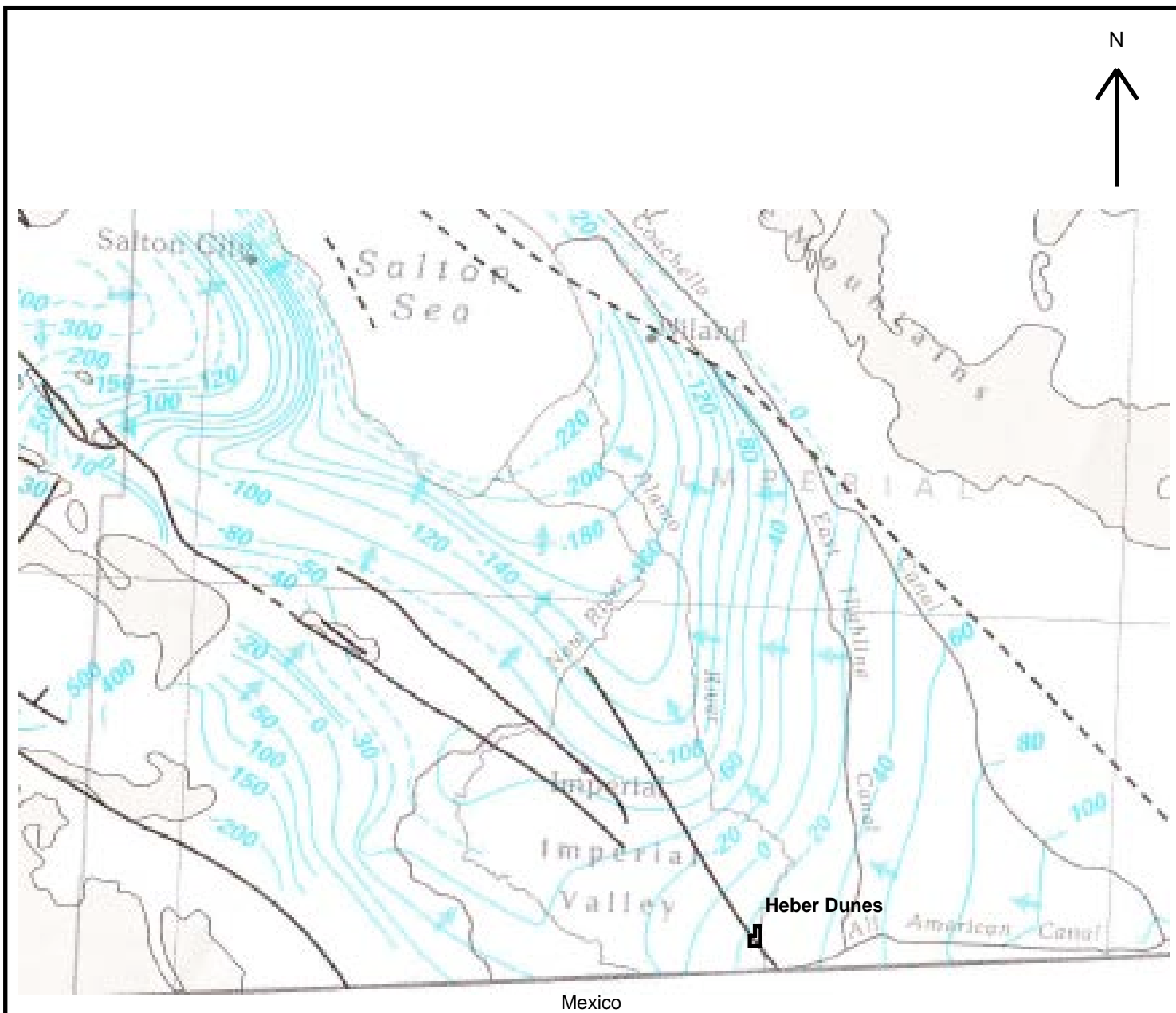


Wright Environmental Services, Inc.
 Tracy, CA

Site Sketch Map
 Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: 1" ≈ 660'
 Date: Apr. 2009

Figure 5



Source: Groundwater Atlas of the United States, Segment 1, California and Nevada: Hydrologic Investigations Atlas 730-B, portion of Figure 52. Blue lines show potentiometric water levels in tightly cased wells in 1965. Blue arrows show directions of groundwater flow.

Solid and dashed black lines are faults.

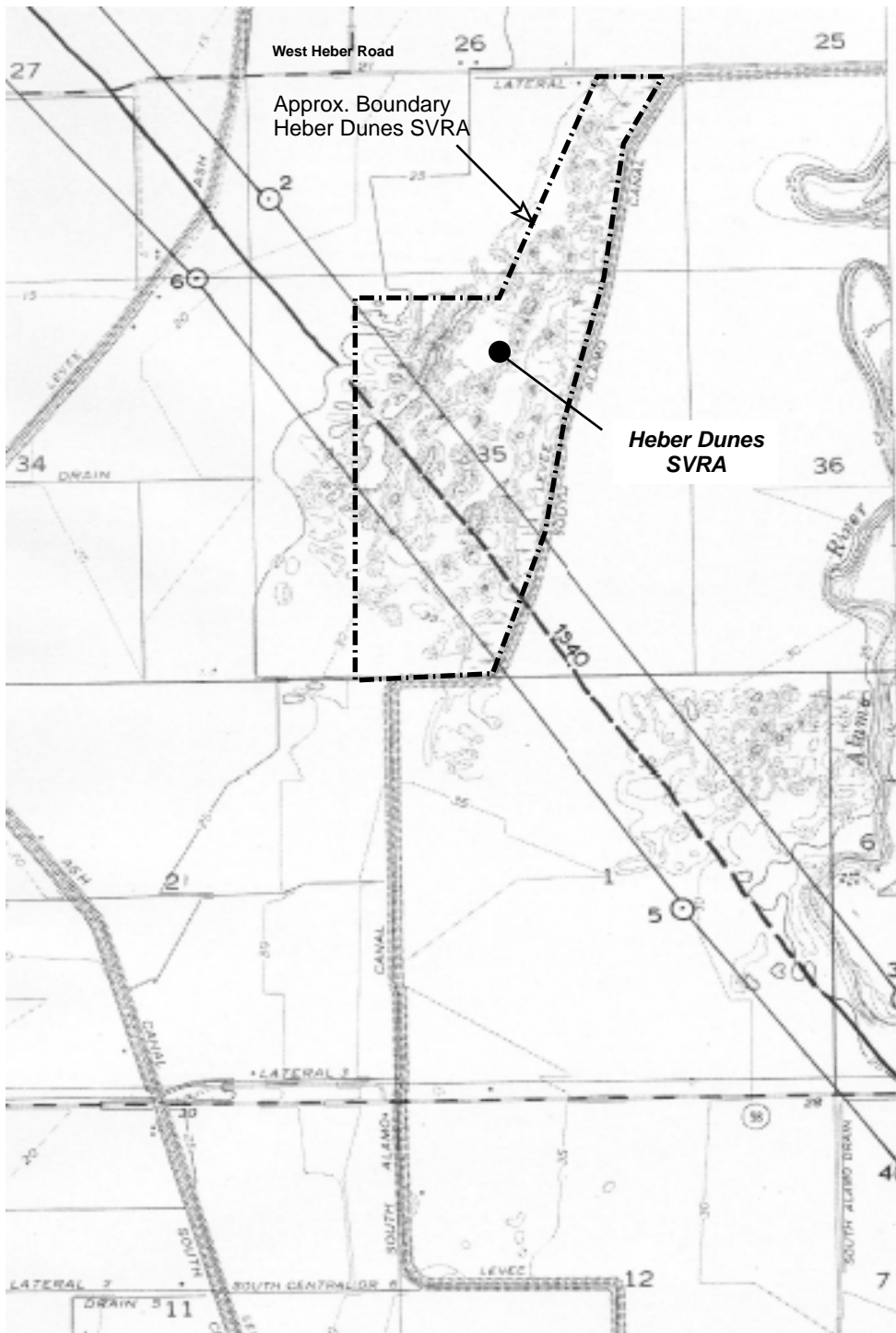
Wright Environmental Services, Inc.
Tracy, CA

**Regional Groundwater
 Flow Map, Imperial Valley**

Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: 1" ≈ 15 miles
 Date: Apr. 2009

Figure 6



Source: Alquist-Priolo Earthquake Fault Zoning
 Calexico 7.4 minute Quadrangle
 Effective July 1, 1974
 California Division of Mines and Geology
 (Fault Rupture Hazard Zone Map).

Wright Environmental Services, Inc.
Tracy, CA

**Alquist-Priolo Earthquake
 Fault Zone Hazard
 Map**

Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: 1" ≈ 2000'
 Date: Apr. 2009

Figure 7

Appendix H
Phase I Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT
HEBER DUNES SVRA,
APN 055-190-29, 37; 055-280-22, 23, 25, 29
1610 Heber Dunes Road
HEBER, CALIFORNIA

for

Ms. Connie Moen, Project Manager
EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, CA 92101

April 2009

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Appendix B	EDR Radius Map EDR Certified Sanborn Map EDR Historic Aerial Photographs EDR Topographic Maps Environmental Lien Search Report
Appendix C	Interview and Research Documentation; Questionnaire, County of Imperial File



2395 East Pescadero Avenue
Heber, CA 95304

April 3, 2009
Project No. 9641-02

EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, CA 92101

Attn.: Ms. Connie Moen, Project Manager

**Re: Phase I Environmental Site Assessment, Heber Dunes SVRA Site,
(APN 055-190-29, 37; 055-280-22, 23, 25, 29)
1610 Heber Dunes Road, Heber, CA 92249**

Dear Ms. Moen,

Wright Environmental Services, Inc. (Wright) has prepared this Phase I Environmental Site Assessment for the Heber Dunes SRVA for the above referenced site. We did not find evidence that current use of the property or activity at neighboring properties would indicate the likelihood of environmental impairment to the subject property.

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in §312.10 of 40 CFR and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property.

Respectfully submitted,
Wright Environmental Services, Inc.

John Lynch
President

Christopher M. Palmer
Engineering Geologist CEG 1262

1.0 EXECUTIVE SUMMARY

1.1 Background

Wright Environmental Services, Inc. (Wright) has conducted a Phase I Environmental Site Assessment of the property identified as the Heber Dunes SVRA Property Site at 1610 Heber Dunes Road (APN 055-190-29, 37; 055-280-22, 23, 25, 29) west of the City of Heber, Imperial County, California. The assessment included a brief review of the property's prior-use history, a brief review of neighboring properties based on reasonably ascertainable environmental databases, a visual reconnaissance for the subject 343-acre parcel for potential hazardous-material contamination, a preliminary screening for asbestos-containing building materials (ACBM), lead-based paint (LBP), drinking water quality and radon, and a search for above-ground storage tanks (AST's), underground storage tanks (UST's), and equipment containing polychlorinated biphenyls (PCB's).

The subject property is located in an agricultural area west of the City of Heber. The area consists of a roughly elongated rectangular-shaped parcel of land of approximately 343-acres. The subject property is currently undeveloped and has historically never been developed; the property has been used for a meeting place, with some unauthorized illegal dumping non-hazardous and of hazardous material and, currently is used as a State park and vehicle recreation use.

1.2 Observations and Conclusions

We have performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527-05. Most exceptions to, or deletions from this practice, are described in this report. This subject site is used for a State day park for recreational vehicle use. The site is improved with picnic areas, restrooms, park shop and storage areas, a ranger residence and recreational vehicle camping areas. Electrical power transmission towers cross the southwestern part of the park. The active Imperial fault crosses the southern portion of the site and has caused ground rupture and cracking on and around the property in 1940 and 1979.

Vegetated areas are open to the public but not for vehicle use. The park ranger area has a small shop with two flammable lockers used to store fuel and small quantities of paints used at the park; overall housekeeping of the area appeared well kept and clean. The park rangers collect very small quantities of used oil occasionally left by park users and that oil is properly disposed off-site. An illegal hazardous materials dumping occurred on the site in 1997, and that problem has been cleaned up and it is our understanding that the case file is closed.

Wright did not find evidence that current use of the property or activity at neighboring properties that would indicate the likelihood of environmental impairment to the subject property. In addition, Wright did not observe visual evidence of hazardous-material contamination, indications of improper hazardous material storage or disposal, or identify significant concerns relating to AST's, PCB's, UST's, Lead-based Paint or Radon at the subject property. Three (3) pole-mounted

transformers are located on the east side of the park at the water collection pumping station unit, and send power to the ranger use area.

In our opinion based upon this information further environmental investigation work is not warranted at this time.

1.3 Certification and Limitations

The investigation was conducted on behalf of and for EDAW, Inc. for use in a Preliminary Phase I Environmental Assessment of the environmental condition of the specific section of the property. We have performed this Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527-05. This report and findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party, in whole or in part without prior written consent of Wright Environmental Services, Inc. However, Wright Environmental Services, Inc. acknowledges and agrees that the report may be conveyed to and relied upon by EDAW, Inc., its successors and assigns, rating agencies and bond investors and the Off-Highway Motor Vehicle Recreation Division of the California Department of State Parks and Recreation for Heber Dunes SRVA.

Wright Environmental Services, Inc., its principal, and its employees have no present or contemplated interest in the property. Our employment and compensation for preparing this report are not contingent upon our observations or conclusions.

The investigation has been performed in a professional manner using the degree of care and skill ordinarily exercised by and consistent with the standards of competent consultants practicing in the same or similar locality as the Project. No soil, groundwater or materials samples were collected, nor chemical analyses were made for this report. The reported observations and conclusions are limited only by the reported assumptions and limiting conditions and represents our unbiased and professional analysis, opinions, and conclusions. No other warranty, expressed or implied, is made or intended. The information in this report is from sources deemed to be reliable; however, no representation or warranty is made as to the accuracy thereof.

No Preliminary Phase I Environmental Site Assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. This study is designed to reduce but not eliminate uncertainty regarding the existence of such conditions in a manner that recognizes reasonable limits of time and cost for the intended purpose.

2.0 INTRODUCTION

Heber Dunes SVRA Property
1610 Heber Dunes Road
(APN 055-190-29, 37; 055-280-22, 23, 25, 29)
Heber, California 92249

2.1 Background

Wright Environmental Services, Inc. (Wright) was retained by EDAW, Inc. to conduct a Phase I Environmental Site Assessment at the above referenced property. The purpose of the assessment was to provide to a preliminary degree, an objective, independent, professional opinion of the potential environmental risks, if any, associated with the subject property. The Environmental Site Assessment included a visual reconnaissance of the property and to a limited extent the immediate vicinity, a review of limited and readily available regulatory agency public records. The regulatory information sources are listed by agency in the following sections, and include federal, state, and local databases. Photographs of the subject property were taken in preparing this report are included in this report as Appendix A. No intrusive subsurface sampling was performed for this work.

2.2 Scope of Work

The purpose of this environmental assessment was to identify the immediate and most visually recognizable environmental concerns at the subject property. The assessment was generally performed in accordance with the recommendations presented in the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E1527-05 and accepted industry standards/practice. The specific scope of work included the following: A general Prior Use History Review, Environmental Database Review, Visual Reconnaissance, Preliminary ACBM Screen, PCB Equipment Search, AST and UST Search, Preliminary Radon Review, Preliminary LBP Screen, and Drinking Water Quality.

2.3 Significant Assumptions

The information in this report is from sources deemed to be reliable; however, no representation or warranty is made as to the accuracy thereof.

2.4 Limitations and Exceptions

The investigation has been performed in a professional manner using the degree of care and skill ordinarily exercised by competent Phase I consultants practicing in the same or similar locality as the Project. The reported observations and conclusions are limited only by the reported assumptions and limiting conditions and represents our unbiased and professional analysis, opinions, and conclusions. No other warranty, expressed or implied, is made or intended.

2.5 Special Terms and Conditions

Wright Environmental Services, Inc., its principal, and its employees have no present or contemplated interest in the property. Our employment and compensation for preparing this report are not contingent upon our observations or conclusions.

2.6 User Reliance

No Preliminary Phase I Environmental Site Assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. This study is designed to reduce but not eliminate uncertainty regarding the existence of such conditions in a manner that otherwise recognizes reasonable limits of time and cost for a Preliminary Phase I Environmental Site Assessment.

3.0 SITE DESCRIPTION

3.1 Site Location

The subject property is located in a region of agricultural land use at 1610 Heber Dunes Road (also referred to as Heber Beach) about 6 miles southeast of the City of Heber, Imperial County, California. The property APN are 055-190-29, 37; 055-280-22, 23, 25, 29 and the property is currently a day use park with historic use as a local gathering place and unauthorized dumping ground and, recreational vehicle use (see Figures 1, 2, 3 and 4 and Site Photographs in Appendix A). Access into the site is off Heber Dunes Road south of West Heber Road.

3.2 Site Description

The subject property site consists of a roughly elongated rectangular-shaped parcel of land of a total of approximately about 343-acres. The subject property is currently undeveloped has a spotty cover of low vegetation. The Off-Highway Motor Vehicle Recreation Division of the California Department of State Parks and Recreation currently owns the property.

3.3 Current Use of the Property

The property is currently in use as a State Park for recreational vehicle, camping and picnic use.

3.4 Current Uses of Adjoining Properties

The subject property is located adjacent to an area of agricultural use west of City of Heber, California. The subject property is bordered as follows: North – West Heber Road; East – South Alamo Canal and open land; South – South Alamo Canal and open land in crop use; West - Open land in crop use.

3.5 Topography

The subject property is rolling sand dunes with a maximum elevation of about 34 feet above mean sea level, based on the United States Geologic Survey Topographic Quadrangle Map, Calexico, California. Original topographic mapping is dated and 1907 (Holtville 15 minute quadrangle) and revised or photo-revised in 1957 (15-minute Calexico), and 1957 (7.5 minute Calexico). The topographic maps show there was an original topographic slope to the north and the property was undeveloped in 1907 and appears to be within an area of agricultural use in later mapping (see Figures 1, 2, 3, and 4).

3.6 Surface Water Characteristics

“Wetlands” is a general term used to describe a variety of ecosystems, which may include prairie potholes, marshes, fens, bogs, wet meadows, and swamps. It did not appear that portions of the subject property might be classified as wetlands, although irrigation canals border on the property and some seepage might create locally wet areas. The San Diego State University prepared a study of vegetation and animals and habitat on the property in 1998 with recommendations regarding these issues for the SRVA (see attachments).

According to the EDR-cite and available FEMA Flood Zone Map for Heber, California, Community Panel # 060 0651025B, the subject property is not classified in the 100-year and 500-year flood zone.

3.7 General Geologic Characteristics

The subject site is located in south-central Imperial County near the international border with Mexico. Quaternary sediments underlie the site region. Regionally active faults near the property that generate damaging earthquakes include the Imperial fault that crosses the site near the south-western edge of the property, the Superstition Hills fault about 18 miles northwest, San Andreas fault about 52 miles to the north and the San Jacinto fault about 55 miles northwest. The Imperial fault is mapped within an Alquist-Priolo Fault-Rupture Hazard Zone on the park (see Figures 5 and 6). Surface rupture from the Imperial County Earthquake of October 15, 1979 was mapped on the Heber Dunes SRVA site. An earthquake in 1940 ruptured approximately along the same line as 1979.

The site lies in of the Imperial Valley Groundwater Sub-basin, which contains shallow unconfined and deeper aquifers in lowland areas and Imperial River Plain, which are recharged by the small creeks draining the mountains and from irrigation canals. Historically, agricultural canals have been used to move surface water around Imperial County and seepage from them recharges the subsurface. Regionally, shallow groundwater is estimated to occur between (10-20) feet or deeper below ground surface depending upon location and recharge from the South Alamo Canal and other irrigation canals. Large deeper aquifers produce large quantities of groundwater for drinking and agricultural use. The regional groundwater flow direction has been estimated to flow northerly to northwesterly (Planert, M. and Williams, J. S., 1995).

3.8 Water System

The subject property is developed as a park and uses water drawn from the South Alamo Canal that is treated with an on-site purifying unit for restroom and drinking use.

4.0 USER PROVIDED INFORMATION

4.1 Title Records

A 50-year chain of Title was not provided by the client for Wright's review nor was one readily available for review.

4.2 Environmental Liens or Activity Use Limitations

A search by EDR did not reveal any environmental liens for the property. The activity use limitations (AUL) appear to be limited to the property being used for off-road recreational use. The property owner did not report any other restrictions to WRIGHT regarding environmental problems for this property.

4.3 Specialized Knowledge

There was no special knowledge provided to Wright by the property owner. This site had been historically used for vehicle recreation use. There is no information indicating any agricultural use or land development on the property.

4.4 Commonly Known or Reasonably Ascertainable Information

Wright has searched available State, City, and County sources for property information and has had a database provider search the property numeric address provided by the Client for this property.

4.5 Valuation Reduction for Environmental Issues

The information provided to Wright indicated that there was no property value reduction information for environmental issues according to the owner.

4.6 Owner, Property Manager, and Occupant Information

The property is currently developed with park buildings and has been used for recreational vehicle use. Wright did not interview any former property occupants or neighbors for this study.

4.7 Reason for Performing Phase I

It is Wright's understanding that the Phase I report is being used as part of anticipated future property development that specifically includes vehicle recreation park use.

5.0 RECORDS REVIEW

Wright reviewed the prior use history of the subject property. Wright attempted to review as many sources that were both reasonably ascertainable and likely to be useful as required by the ASTM guidance. The review attempted to identify the prior usage back to the earlier of the property's first developed use on or about 1940.

5.1 City/County Records Review

A review by the Colorado Basin Regional Water Quality Control Board (RWQCB) records found files for contaminant issues for the subject property APN/address. No records for any hazardous materials or contaminant problems were reported on the subject property APN/address on their GeoTracker website.

A review by the State Department of Toxic Substances is the (Certified Unified Program Authority (CUPA) for the County. The DTSC did not report any contaminant or hazardous materials problems at the site address or APN and nothing was reported on ENVIRONSTAR.

The Imperial County Health Department was contacted regarding the property address and APN. While the County is not the current CUPA it does maintain files prior to about 2006 and had a file report of illegal hazardous materials dumping in 1997 near the southeast corner of the property. Approximately, 30 five-gallon containers of paint, 100 one-gallon containers of thinners, lacquers, activators and reducers and 30-quart containers of reducers were dumped. The Imperial County Fire and Health Departments responded and the site was cleaned up in November 1997.

5.2 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps show the location and use of structures on a property at a given point in time and are widely available for areas that were significantly developed

during the late 1800s through the 1950s. EDR performed a search of Sanborn Maps for available maps covering the subject area and found none for the specific parcel.

5.3 Aerial Photographs

Wright reviewed single aerial photographs for 1981 from the U. S. Department of Agriculture, and 1996, 2002, and 2005 from the EDR Aerial Photography Print Service (photographs listed below by year with approximate scale, see appendices). A review of the aerial photographs showed the following:

1981 (USDA 1" ≈ 700') – The property is undeveloped and partially covered with vegetation. The surrounding land is in agricultural use.

1996 (USGS 1" = 666') – The subject property appears similar to the previous photograph, however what appear to be some containers or small buildings (possibly the old restrooms appear near the center of the property.

2002 (USGS 1" = 666') – What appear to be the restroom building and the ranger residence and shop buildings are present in the north-central part of the property off the access road and near the picnic day use area.

2005 (EDR 1"=484') – The subject property appears similar to the previous photograph.

5.4 City Directories

City and telephone directories record names and businesses located at a particular numeric property address by year (as for example the Polk City directories or the Haines Criss-Cross Directories). There were no listings for the subject property address.

5.5 Summary of Historical Data

Topographic maps dating to 1907 show the subject property was undeveloped in 1907, and the area is undeveloped in 1957. Aerial photographs show that the property is undeveloped in 1981, 1996, 2002 and 2005. A photograph sent to Wright by EDAW, Inc. shows the property undeveloped in 2008 and it is currently a day use park. Based upon the information that was available and presented above, it appears that the subject property was undeveloped land in the early 20th century. Maps and aerial photographs show that the property has not been used for agricultural or other development use beyond park use. Based on the information provided above, it is Wright's professional opinion that the intent of the ASTM guidelines for prior use history has been met.

5.6 Environmental Database Tables

Wright reviewed environmental databases provided by EDR, Inc. to determine whether the subject property or neighboring properties were suspected of having or known to have environmental concerns likely to adversely impact the subject property. A summary of the

identified sites is provided in the tables for Federal, State and Local, Indian and EDR Proprietary databases below. A detailed listing and description of the databases reviewed and a listing of the sites identified by EDR are provided in the Appendices.

Federal Records

List Name	Date rept active by EDR or Updated	Search Radius (mile/s)	Subject site Listed?	<1/8 mile	1/8-1/4 mile	1/4-1/2 mile	1/2-1 mile	Over 1 Mile	Total
NPL	11/19/08	2.5							
Proposed NPL	11/19/08	2.5							
Delisted NPL	11/19/08	1.5							
NPL Liens	3/30/94	2.5							
CERCLIS	12/08/08	2.0							
CERCLIS-NFRAP	2/20/08	2.0							
CORRACTS	10/16/08	2.0							
RCRA-TSD	10/16/08	1.75							
RCRA-LQG	10/16/08	1.75							
RCRA-SQG	10/16/08	1.75							
ERNS	3/17/08	1.5							
HMIRS	11/19/08	TP							
US ENG CONTROLS	12/08/08	2.0							
US INST CONTROL	12/08/08	2.0							
DOD	1/11/07	2.5							
FUDS	9/23/08	1.0							
US BROWN-FIELDS	12/23/08	2.5							
CONSENT	12/23/08	2.0							
ROD	12/23/08	2.0							
UMTRA	1/24/08	2.5							
ODI	9/17/04	0.5							
TRIS	4/18/08	1.5							
TSCA	5/30/06	1.5							
FTTS AND HIST FTTS	12/08/08	1.5							
SSTS	4/18/08	1.5							
PADS	3/17/08	1.5							
MLTS	11/19/08	1.5							
MINES	10/16/08	1.75							
FINDS	12/23/08	1.5							
RAATS	8/7/95	1.5							

TP = Target Property

STATE RECORDS

List Name	Date rept active by EDR or Updated	Search Radius (mile/s)	Subject site	<1/8 mile	1/8-1/4 mile	1/4-1/2 mile	1/2-1 mile	Over 1 Mile	Total

Hist Cal-sites	8/24/06	1.0							
Toxic Pits	9/26/95	1.0							
CA Bond Exp. Plan	6/02/94	1.0							
SCH	9/3/08	0.25							
State Landfill	2/14/08	2.0							
CA WDS	6/29/07	TP							
WMUDS/SWAT	5/10/00	2.0							
Cortese	7/26/01	0.5							
LUST	11/19/04	2.0							
SLIC	11/19/04	2.0							
UST	7/25/07	2.0							
CA FID UST	9/29/95	1.75							
HIST UST	2/21/91	1.75						1	1
SWRCY	1/27/09	0.5							
CDL	12/23/08	1.5							
AST	2/14/08	0.25							
SWEEPS UST	8/11/05	1.75							
CHMIRS	6/20/08	1.5							
Notify 65	11/19/93	2.5							
DEED	10/13/08	0.5							
VCP	9/3/08	2.0							
DRY CLEANERS	9/29/08	2.0							
RESPONSE	9/3/08	0.25							
HAZNET	11/7/07	1.5							
EMI	12/26/08	1.5							
ENVIROSTAR	9/3/08	2.5							
HAULERS	1/27/09	1.5							

TP = Target Property

TRIBAL RECORDS

List Name	Updated	Search Radius (mile/s)	Subject site Listed?	<1/8 mile	1/8-1/4 mile	1/4-1/2 mile	1/2-1 mile	Over 1 Mile	Total
INDIAN RESERV	10/6/08	2.5							

TP = Target Property

EDR PROPRIETARY RECORDS

List Name	Updated	Search Radius (mile/s)	Subject site Listed?	<1/8 mile	1/8-1/4 mile	1/4-1/2 mile	1/2-1 mile	Over 1 Mile	Total
MANUF. GAS PLANTS		2.5							

TP = Target Property X - Target Property address listed on database

* - Date listed is date of activation of regulatory database by EDR for search or if list not updated, last date of EDR contact with agency. See EDR report for more information.

5.7 Discussion of Environmental Data Base Findings

The subject property address was not listed on any database.

An illegal hazardous materials dumping was reported and cleaned up near the southeast corner of the site in November 1997, and that problem has been cleaned up and it is our understanding that the case file is closed (see Section 5.1 above and County of Imperial file in Appendix C).

One HIST UST site is listed as Carey L. Graham at 1728 King Road, Holtville, CA for a historic underground storage tank. The tank is reported as used for farm vehicles for regular fuel.

Twenty-six (26) “orphan sites” were listed by EDR that are not near the subject property. In our opinion a brief review of these sites indicates that they would not pose a potential problem to the subject property due to their listed use status and, or distance from the property.

6.0 SITE RECONNAISSANCE

6.1 Methodology and Limiting Conditions

Wright performed a surface site reconnaissance March 3, 2009 to view the property and immediate surrounding area.

6.2 General Site Setting

The subject property is located in an area of agricultural development. The subject property is a State day park and consists of a roughly elongated rectangular-shaped parcel of land approximately 343-acres in total (see Figures 3, 4, 5, and 6, and Site photographs).

This subject site is used for a State day park for recreational vehicle use. The site is improved with picnic areas, restrooms, park shop buildings, a ranger residence and recreational vehicle camping areas. Locally densely vegetated areas are open to the public but not for vehicle use. The park rangers collect very small quantities of used oil occasionally left by park users and that oil is properly disposed off-site. An illegal hazardous materials dumping occurred on the site in 1997, and that problem has been cleaned up and it is our understanding that the case file is closed. Trash dumped on the site has also been removed in the past.

The rangers use three (3) storage buildings, and one (1) shop building used to store tools and park equipment. Two (2) flammable lockers are used; one to store containers of fuel for park mowers and power tools, and the other locker is used to store paints, oil and the small quantities of waste oil collected; overall housekeeping of the area appeared well kept and clean. The residence is located near the shop and next to the water-purifying unit that supplies water to the park. The water pump house is next to the power pole at the eastern edge of the park next to the South Alamo Canal. Wright did not enter the residence.

A dirt perimeter road encompasses the park. A small irrigation canal borders the western edge of the property and the South Alamo Canal borders the eastern edge. An electrical

tower power line crosses the southwestern part of the park. The towers did not have climbing deterrents on the tower legs that could prevent unattended minors or other humans from climbing towers and potentially coming in contact with high voltage transmission lines. Wright did not observe any ground cracking or distress in the area where the Imperial fault crosses the South Alamo Canal; however, the location of the fault was not marked from previous investigators.

Wright did not observe visual evidence of hazardous-material contamination, indications of improper hazardous material storage or disposal, stains or identify significant concerns on the property other than those noted above.

6.3 Preliminary Asbestos Screening

A material is defined to be ACM, under California State regulations, if it contains greater than 0.1% asbestos by weight. When referring to asbestos, friable means the material, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM are more likely than non-friable ACM to release fibers when disturbed or damaged. The level of the preliminary screening performed by Wright was designed solely to identify the presence of the most obvious and common ACM, not to comply with the survey requirements of the Asbestos Hazard Emergency Response Act (AHERA) of 1986.

The Occupational Safety and Health Administration (OSHA) finds the installation of friable surfacing material and thermal system insulation after December 31, 1980 unlikely. The definition of suspect ACM and presumed asbestos containing material is taken from 29 CFR Parts 1910, et al. Occupational Exposure to Asbestos; Final Rule.

Since the current property buildings had been developed after about 1990, ACM is not a concern for the subject property. However, past illegal dumping of debris may have resulted in ACM releases at the site.

6.4 PCB-Containing Transformer Search

Wright observed three (3) pole-mounted electrical transformers on the subject property adjacent to the South Alamo Canal. Markers on these transformers indicated that all three (3) transformers had been tested for PCBs on 10/2003 (#02678). The water pump house is next to the power pole. One (1) pole-mounted transformer was present near the ranger storage buildings.

6.5 Storage Tank Search

Wright did not observe evidence of underground storage tanks (USTs) on the subject property. An aboveground storage tank (AST) is used for the water-purifying unit next to the ranger residence.

6.6 Radon Screening

Individual states have conducted a statewide screening for indoor radon to determine whether there are particular regions that are more prone to indoor radon problems than others. Wright has obtained copies of this information and the subject site lies within an area determined to have a radon Zone Level of 3. Zone 2 has a predicted average indoor screening level of greater than 2 but less than 4 picocuries per liter (pCi/L). The USEPA action level for radon is 4 pCi/L. Radon is not considered to be a recognized environmental concern for the subject property.

6.7 Preliminary Lead-Based Paint Screening

Lead-Based Paint (LBP) as defined in the department of Housing and Urban Development (HUD) regulations, are paints that contain greater than 0.5% or 5,000 ppm of lead, based on dry weight. Section 302 of the Lead-Based Paint Poison Prevention act requires public housing projects to be inspected for LBP. The sale of paints containing more than 600 ppm of lead to consumers was banned by the Consumer Product Safety Commission (CPSC) in 1978. The CPSC ban does not apply to structural steel building components, such as columns, beams, and decking, that are painted as part of the fabrication process.

Since the bulk property buildings had been developed after about 1990, LBP is not a concern for the subject property. However, the old bathroom and shower facility located between the new bathroom and the water treatment plant could contain LBP.

6.8 Lead in Drinking Water

The subject property is not developed and does not have a drinking water well. The park water is drawn from the South Alamo Canal that conveys Colorado River water that is purified on the on-site treatment unit (marked Richard Pata Engineering, PV-10 Water Treatment Plant, Rocky Vandergriff Consulting). The park rangers did not report any drinking water quality problems.

7.0 INTERVIEWS

7.1 Interviews with the Owner(s) and Occupant(s)

Wright interviewed Mr. Victor Herrick who is a State of California park ranger and lives in the on-site residence. Mr. Herrick stated that there were no problems on the site and was aware of the paint dumping in 1997. He said that recreational vehicle day use was the prime park use with picnics and overnight camping. Occasionally, some park users leave small quantities of used vehicle oil that rangers collect and store in the flammable lockers until it can be properly disposed. Mr. Herrick also stated that he occasionally feels small tremors assumed caused by the Imperial fault.

A questionnaire form was completed by State employees and returned by EDAW, Inc (see attachments). Wright did not interview any neighbors of the subject property.

Wright reviewed a short history dated July 30, 2008 of the subject site prepared by Mr. Victor Herrick of the Heber Dunes SRVA (see attachments in Appendix C). The property had historic use (sometimes referred to as "Heber Beach") as a local gathering place, camping area and occasional dumping ground, with vehicles, debris, glass, a bank vault and trash that was been removed periodically from the site. Occasionally vandalism and some criminal pursuits entered the property. Local farmers stated that the site was never favorable to farming and thus not used for agriculture. Currently, it is a State Park for recreational vehicle use, camping and picnicing at this time. Mr. Herrick speculated that Heber Dunes would likely be in demand for future recreational use as the areas grows.

7.2 Interviews with the Local Government Officials

WRIGHT contacted the desk staff at the County of Imperial Department of Environmental Health and briefly discussed the property with either the desk staff or file managers regarding the file searches for the property address. The County provided the file material regarding the illegal hazardous materials dumping discussed in Section 5.1 above.

8.0 FINDINGS

8.1 Findings

The subject property was undeveloped according to surface topographic mapping from 1907. Aerial photographs taken from 1981 through 2005 show that property has not been developed and attempts at farming the land failed. A history of the park provided by a park employee indicates that it was used by local residents for meetings, camping, and some dumping with occasional vandalism. Local farmers stated that the site was never favorable to farming and thus not used for agriculture. There are no regulatory agency reports of hazardous materials use or dumping at the subject property with the exception of the paint dumping in 1997. Off-road vehicle use, camping, recreational vehicles, and day park visits are the main property use at this time.

The Imperial fault is mapped within an Alquist-Priolo Fault-Rupture Hazard Zone (see Figure 5). Surface rupture from the Imperial County Earthquake of October 15, 1979 was mapped on the Heber Dunes SRVA site. An earthquake in 1940 ruptured approximately along the same line as 1979.

9.0 DATA GAPS AND DEVIATIONS

9.1 Data Gaps

In our opinion there are no data gaps in this study. A review of topographic maps (1907 through 1957) and aerial photographs (1981 through 2005) and park employee history show the property was undeveloped and periodically in recreational use. In our opinion there is sufficient site history to show no other previous use, so a data gap is not considered to occur.

9.2 Deviations

There are no neighbors near to this subject property to add to site history. However, in our opinion the property history is sufficiently complete, so in our view, this is not considered a significant deviation from the guidance in our opinion.

10.0 CONCLUSIONS

10.1 Conclusions

Wright Environmental Services, Inc. performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527-05 Off-Highway Motor Vehicle Recreation Division of the California Department of State Parks and Recreation Heber Dunes SVRA Property at 1610 Heber Dunes Road Heber, CA (APN 212-150-01) in Heber, California. The property appeared undeveloped in 1914 the earliest topographic map reviewed. The subject property has never been developed or farmed. The surrounding area has historically been developed for agricultural use. The property was used as a park and now is a recreational vehicle park operated by the State.

We have performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527-05. This subject site is used for a State Park for recreational vehicle use. The site is improved with picnic areas, restrooms, park shop and storage areas, a ranger residence and recreational vehicle camping areas. Vegetated areas are open to the public but not for vehicle use. Electrical power transmission towers cross the southwestern part of the park. The park ranger area has a small shop with two (2) flammable lockers used to store fuel and small quantities of paints; overall housekeeping of the area appeared well kept and clean. The park rangers collect very small quantities of used oil occasionally left by park users and that oil is properly disposed off-site. An illegal hazardous materials dumping occurred on the site in 1997, and that problem has been cleanup up and it is our understanding that the case file is closed.

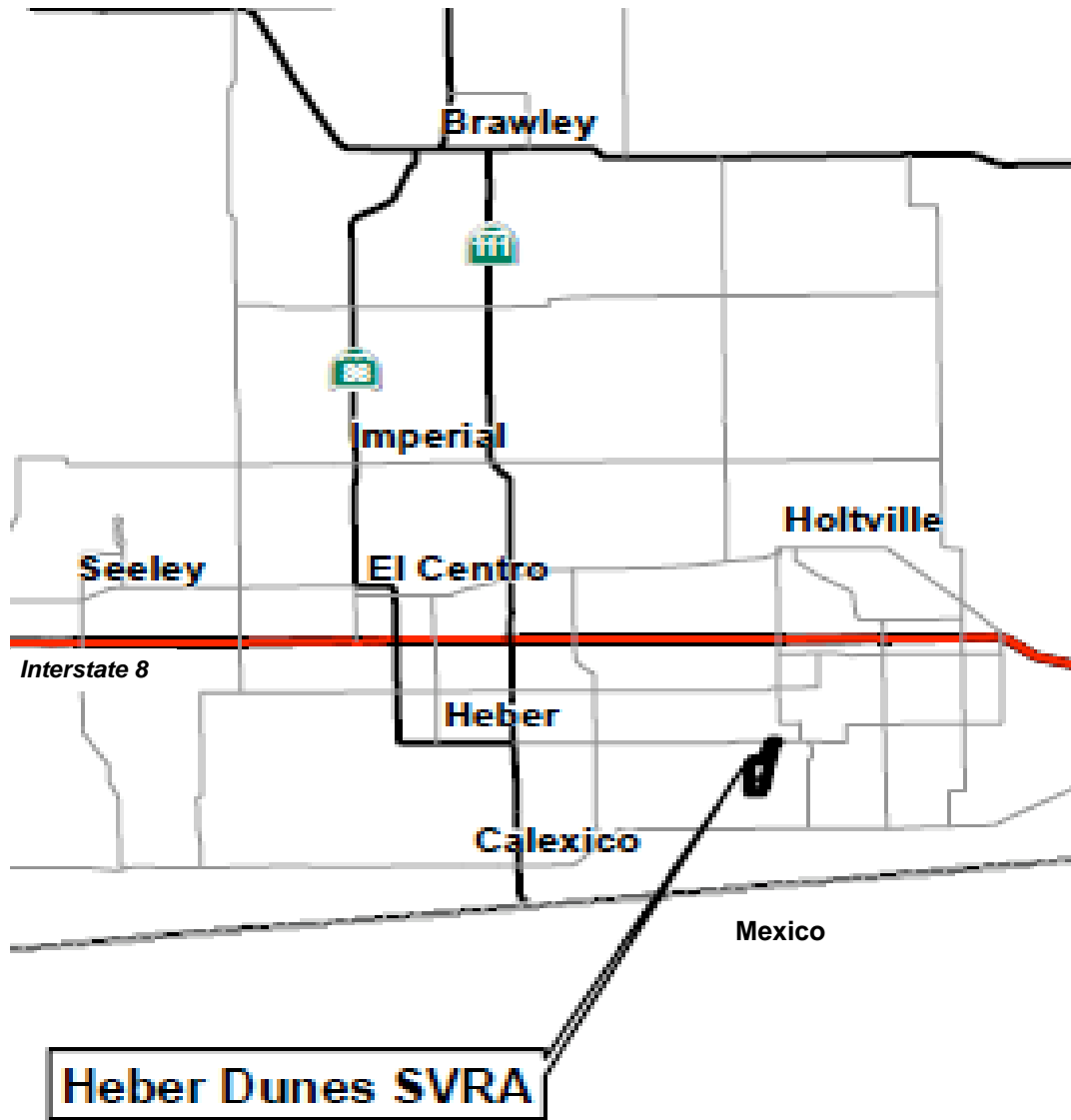
The Imperial fault crosses the southern portion of the property within a State mapped Alquist-Priolo Fault-Rupture Hazard Zone. Historic earthquakes in this fault have caused ground rupture and distress in and around the park. Future earthquakes on the Imperial fault will likely affect the property with strong to very strong groundshaking and surface rupture and ground distress.

Wright did not find evidence that current use of the property or activity at neighboring properties that would indicate the likelihood of environmental impairment to the subject property. In addition, Wright did not observe visual evidence of hazardous-material contamination, indications of improper hazardous material storage or disposal, or identify significant concerns relating to AST's, PCB's, UST's, Lead-based Paint or Radon at the subject property. Three (3) pole-mounted transformers on the east side of the park at the water collection unit, and one (1) pole-mounted transformer near the park buildings send power to the ranger use area.

In our opinion, this assessment has revealed there are no recognized environmental conditions in connection with the subject property.

Wright recommends the following:

- Since the park allows park visitors (children and adults) from visitors in the area of the electric power towers, measures should be taken to prevent climbing on the tower.
- If any development is planned within the Alquist-Priolo Earthquake Rupture mapped area, the appropriate geologic and engineering investigations must be performed and reviewed by the appropriate agencies.



Source: EDAW, Inc.

Site Location Map

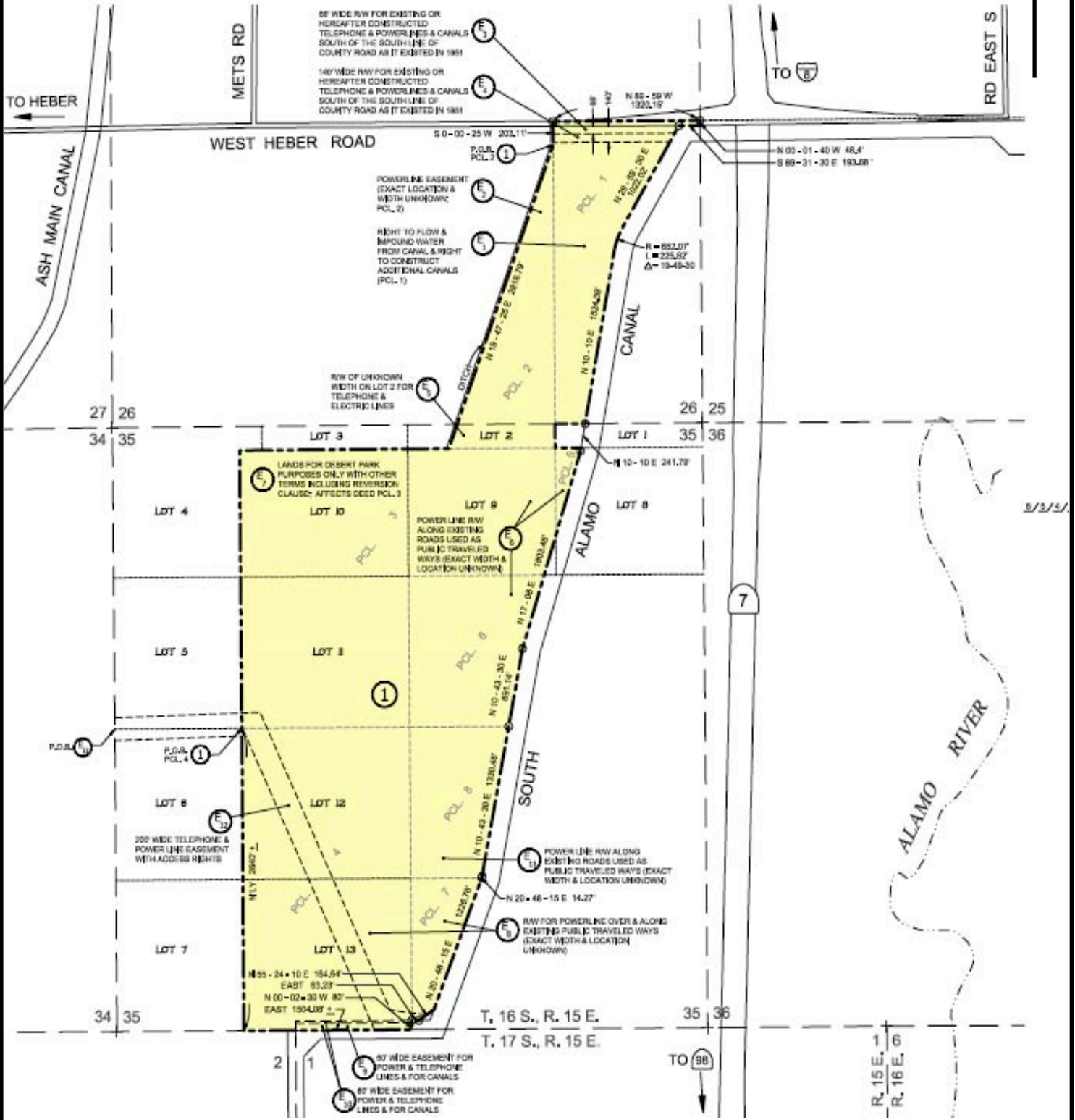
Heber Dunes SVRA
1610 Heber Dunes Road
Heber, CA

Proj. No.: 9641-09
Scale: none
Date: Apr. 2009

Figure 1

Wright Environmental Services, Inc.
Tracy, CA

PORTION OF SECTIONS 26 & 35, T. 16 S., R. 15 E., S.B.M.
IMPERIAL COUNTY



Source: EDAW, Inc.

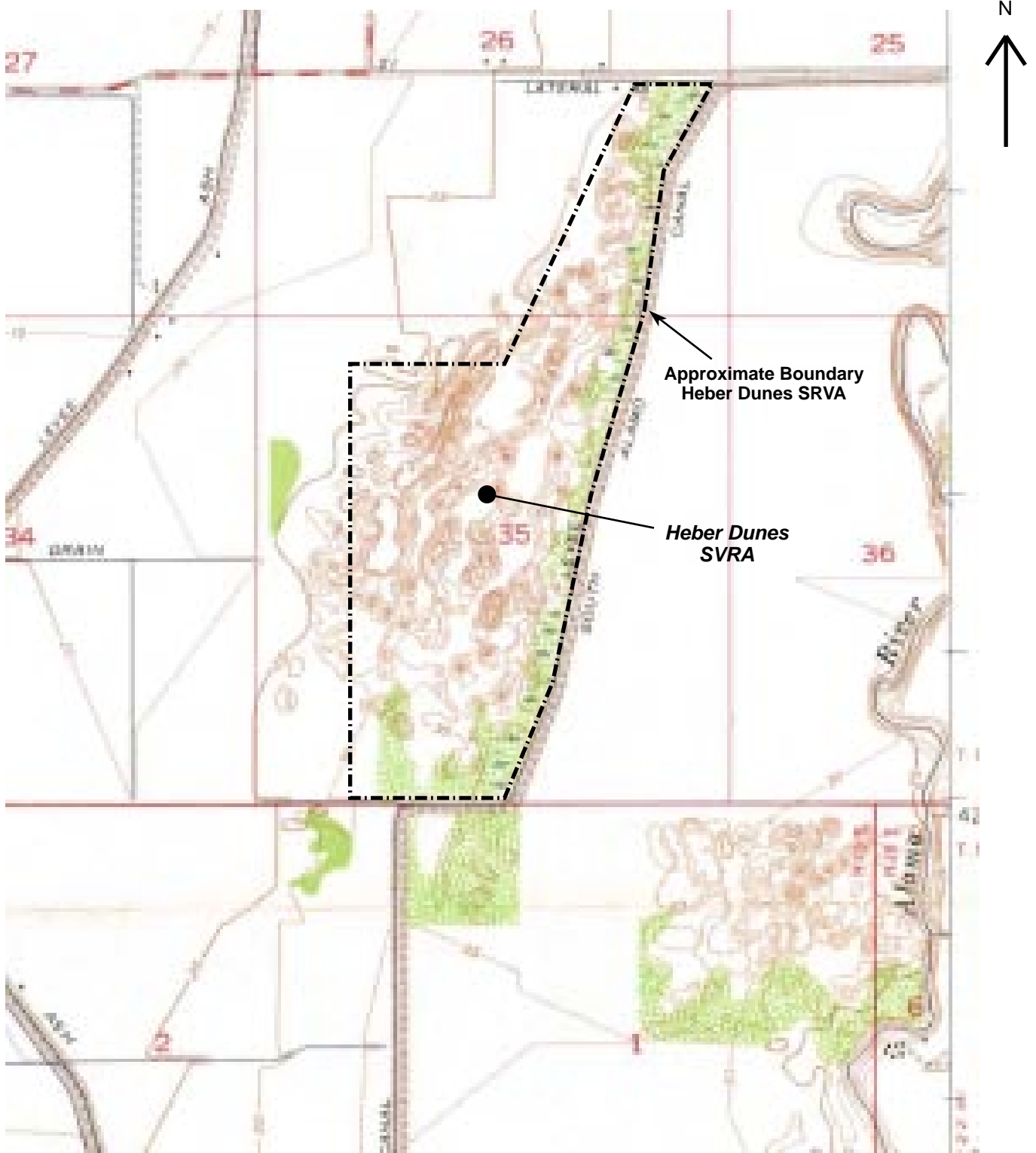
Wright Environmental Services, Inc.
Tracy, CA

Ownership Record Map

Heber Dunes SVRA
1610 Heber Dunes Road
Heber, CA

Proj. No.: 9641-09
Scale: 1" ≈ 660'
Date: Apr. 2009

Figure 2



Source: 1957 Calxico 1957 USGS 7.5' quadrangle

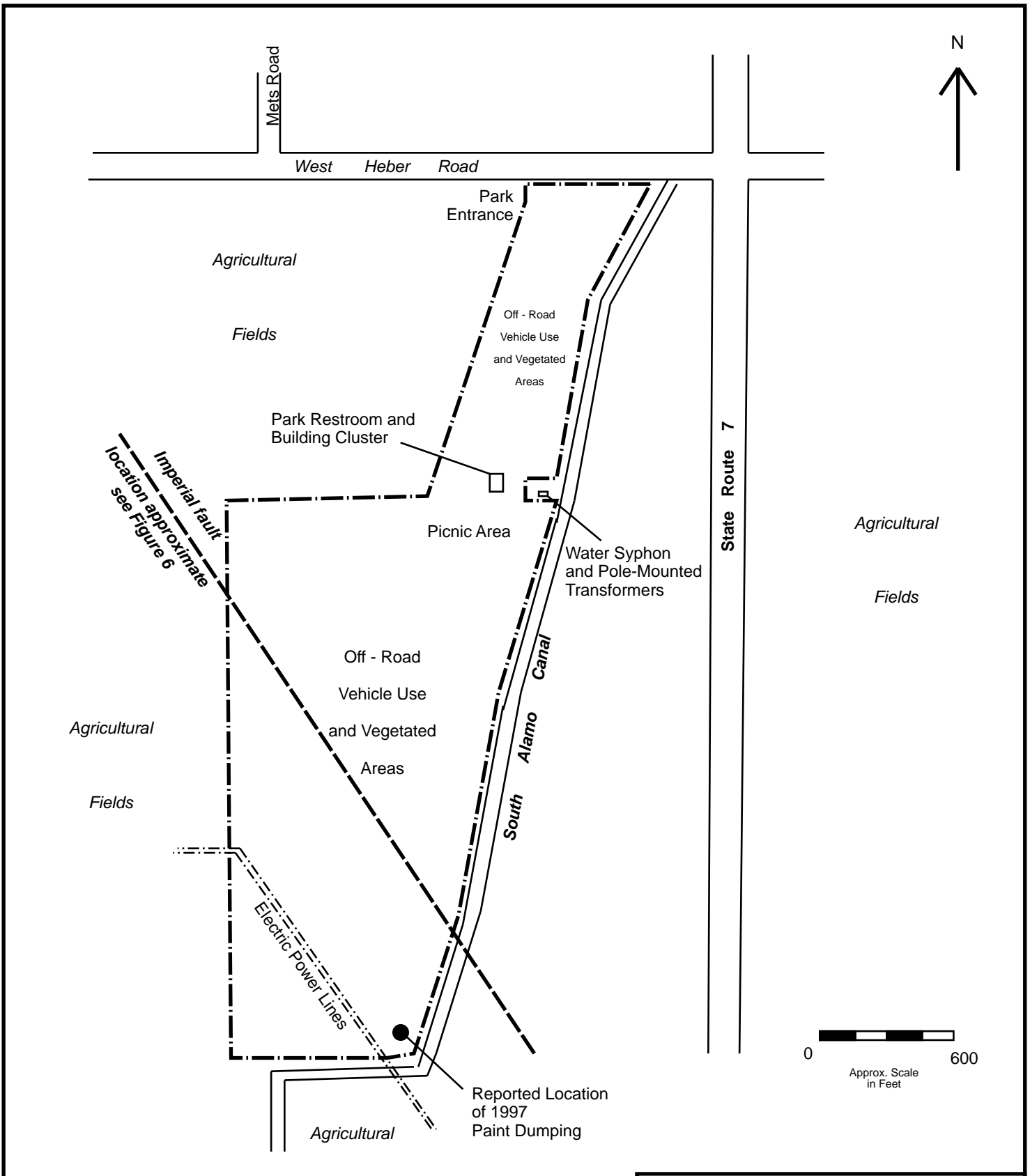
Wright Environmental Services, Inc.
Tracy, CA

**Site Topographic
 Map**

Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: 1" ≈ 2000'
 Date: Apr. 2009

Figure 3



Wright Environmental Services, Inc.
Tracy, CA

Site Sketch Map

Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: 1" ≈ 660'
 Date: Apr. 2009

Figure 4

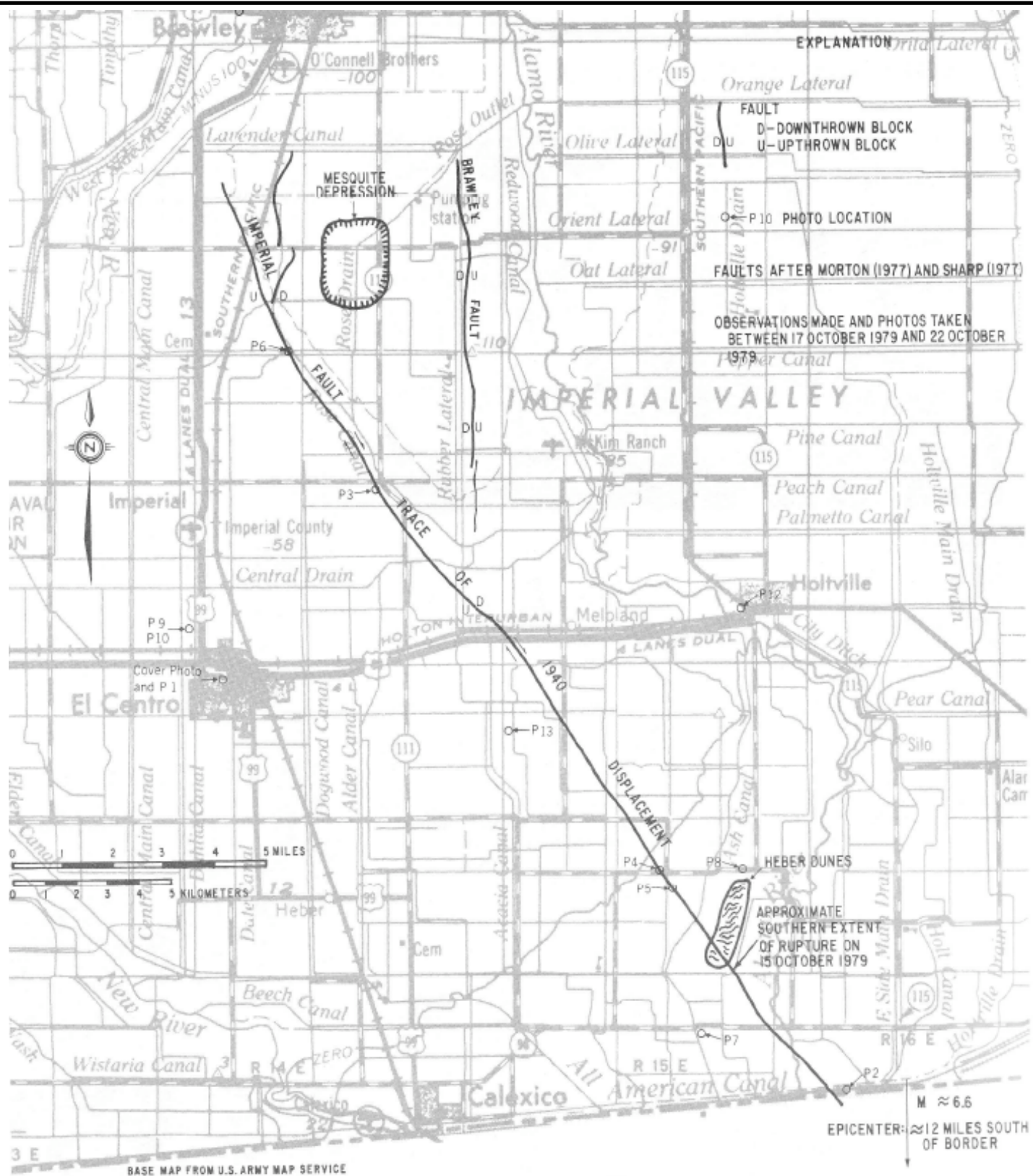


Figure 1. Area of surface faulting, Imperial Valley earthquake, 15 October 1979.

Source: California Geology, Dec. 1979, Figure 1, Imperial Valley Earthquake, 15 October 1979.

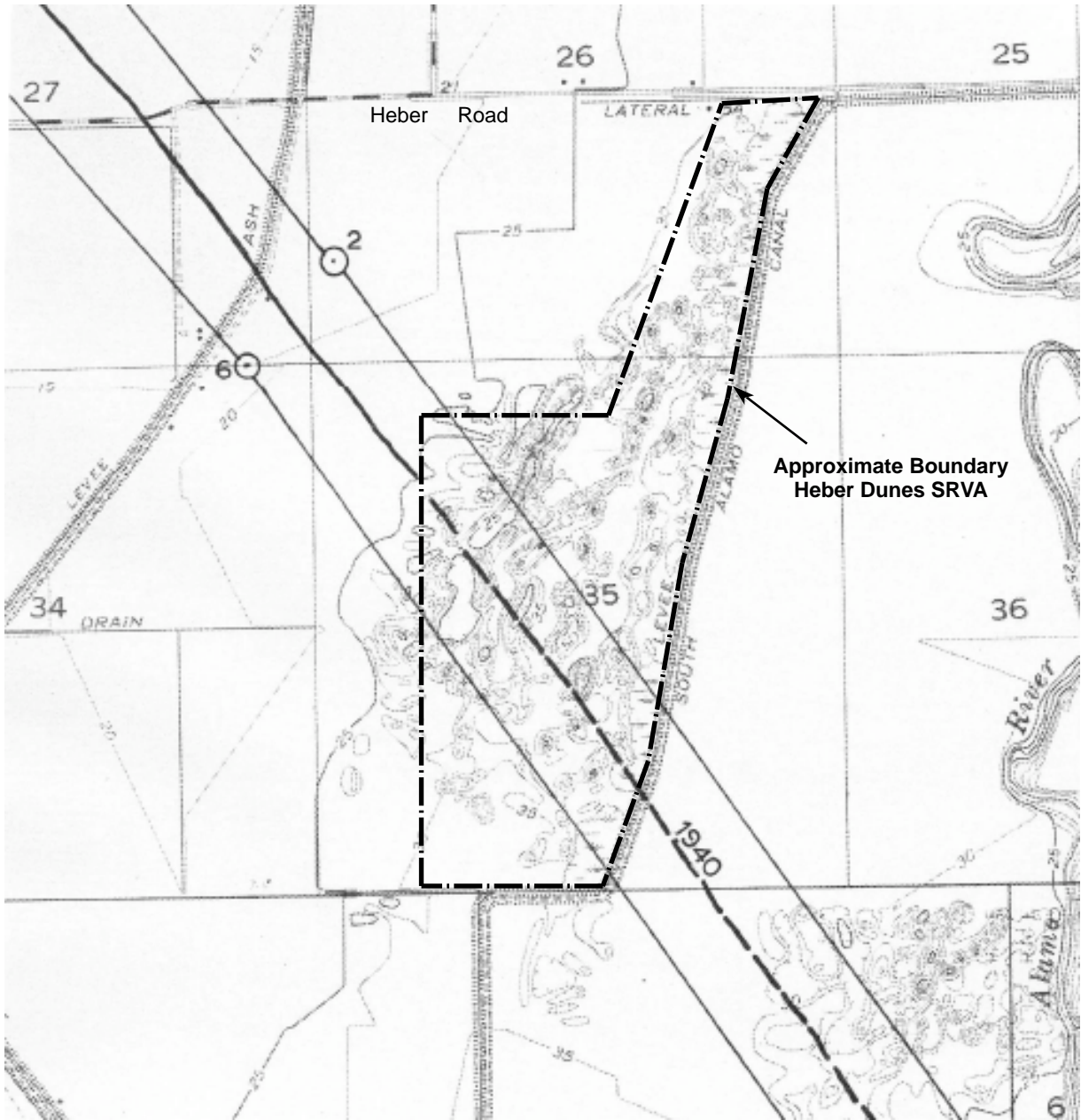
Wright Environmental Services, Inc.
Tracy, CA

Imperial Valley Earthquake Oct. 15, 1979

Heber Dunes SVRA
 1610 Heber Dunes Road
 Heber, CA

Proj. No.: 9641-09
 Scale: 1" ≈ 660'
 Date: Apr. 2009

Figure 5



Source: Alquist-Priolo Earthquake Fault Zoning
Calexico 7.4 minute Quadrangle
Effective July 1, 1974
California Division of Mines and Geology
(Earthquake Fault Zone Map).

**Alquist-Priolo Earthquake
Fault Zone Map**

Heber Dunes SVRA
1610 Heber Dunes Road
Heber, CA

Proj. No.: 9641-09
Scale: 1 : 24000
Date: Apr. 2009

Figure 6

APPENDIX A

Site Photographs



Photograph 1. View looking south from entrance to Heber Dunes SRVA.



Photograph 2. View of typical recreational vehicle trail bordered by vegetation.



Photograph 3. View of central open area, ranger storage sheds, shop and living quarters.



Photograph 4. View of par restrooms to right; closed restroom to left.



Photograph 5. View of typical park storage building.



Photograph 6. View of ranger living quarters and shop area to left of residence.



Photograph 7. View of water treatment unit, treats Colorado surface water from South Alamo Canal. Pole mounted transformer in distance near storage buildings.



Photograph 8. View of fuel canisters flammable locker at ranger shop area.



Photograph 9. View of flammable locker storage for oil, paint, cleaners; blue container at lower left used for small quantities of waste oil picked up by rangers.



Photograph 10. View of ranger work shop and tool storage shed.



Photograph 11. View of typical picnic shelter space and vehicle trails beyond.



Photograph 12. View of power line support tower, note lack of climbing guards on legs.



Photograph 13. View of perimeter road, southern park boundary.



Photograph 14. View of eastern park boundary along South Alamo Canal. Imperial fault crosses onto park in this vicinity trending left to right across photograph.



Photograph 15. View of electrical service with three pole-mounted transformers. Shed located for water intake to park.



Photograph 16. View of camping area near park entrance adjacent to trees.

APPENDIX B

EDR Radius Map

EDR Certified Sanborn Map

EDR Historic Aerial Photographs

EDR Topographic Maps

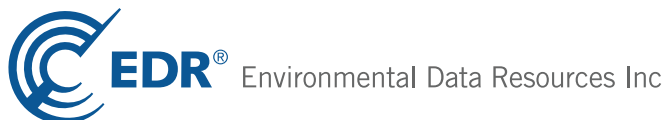
EDR Environmental Lien Search Report

Heber Dunes SRVA

Heber Road at State Route 7
Imperial County, CA 92249

Inquiry Number: 2419249.2s
February 11, 2009

The EDR Radius Map™ Report with GeoCheck®



440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

HEBER ROAD AT STATE ROUTE 7
IMPERIAL COUNTY, CA 92249

COORDINATES

Latitude (North): 32.718300 - 32° 43' 5.9"
Longitude (West): 115.391500 - 115° 23' 29.4"
Universal Transverse Mercator: Zone 11
UTM X (Meters): 650746.6
UTM Y (Meters): 3621012.0
Elevation: 34 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 32115-F4 CALEXICO, CA
Most Recent Revision: 1991

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 2006, 2005

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites

EXECUTIVE SUMMARY

NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Transporters, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators

RCRA-SQG..... RCRA - Small Quantity Generators

RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST..... Geotracker's Leaking Underground Fuel Tank Report

SLIC..... Statewide SLIC Cases

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST..... Active UST Facilities

EXECUTIVE SUMMARY

AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Properties
INDIAN VCP..... Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs
HIST Cal-Sites..... Historical Calsites Database
SCH..... School Property Evaluation Program
Toxic Pits..... Toxic Pits Cleanup Act Sites
CDL..... Clandestine Drug Labs

Local Lists of Registered Storage Tanks

CA FID UST..... Facility Inventory Database
SWEEPS UST..... SWEEPS UST Listing

Local Land Records

LIENS 2..... CERCLA Lien Information
LUCIS..... Land Use Control Information System
LIENS..... Environmental Liens Listing
DEED..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
MCS..... Military Cleanup Sites Listing

Other Ascertainable Records

RCRA-NonGen..... RCRA - Non Generators
DOT OPS..... Incident and Accident Data

EXECUTIVE SUMMARY

DOD.....	Department of Defense Sites
FUDS.....	Formerly Used Defense Sites
CONSENT.....	Superfund (CERCLA) Consent Decrees
ROD.....	Records Of Decision
UMTRA.....	Uranium Mill Tailings Sites
MINES.....	Mines Master Index File
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS.....	Section 7 Tracking Systems
ICIS.....	Integrated Compliance Information System
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
CA BOND EXP. PLAN.....	Bond Expenditure Plan
CA WDS.....	Waste Discharge System
Cortese.....	"Cortese" Hazardous Waste & Substances Sites List
Notify 65.....	Proposition 65 Records
DRYCLEANERS.....	Cleaner Facilities
WIP.....	Well Investigation Program Case List
HAZNET.....	Facility and Manifest Data
EML.....	Emissions Inventory Data
INDIAN RESERV.....	Indian Reservations
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
PWS.....	Public Water System Data

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants..... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 1.75 miles of the target property.

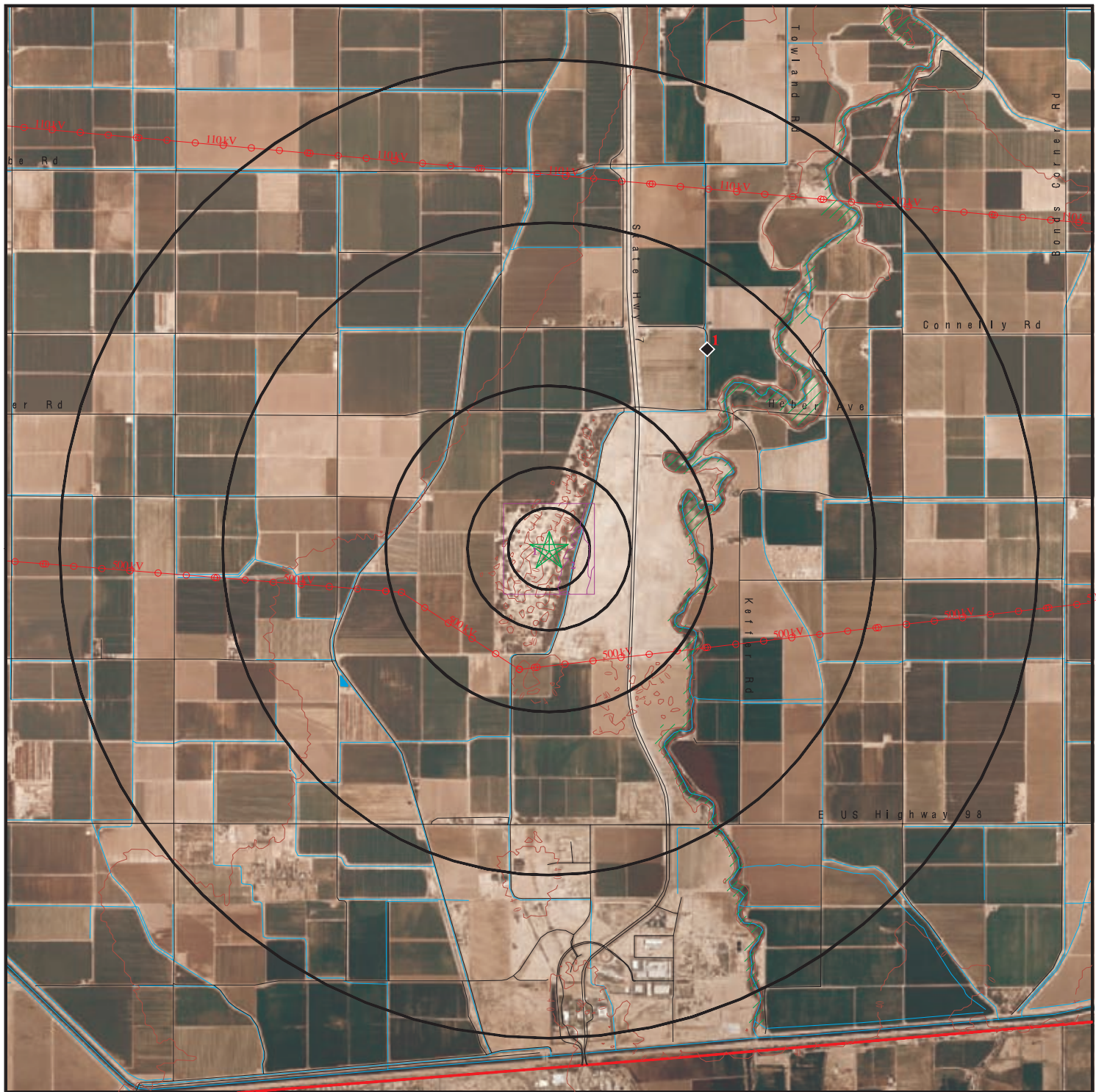
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CAREY L. GRAHAM	1728 KING RD	NE 1 - 2 (1.562 mi.)	1	7

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
ORMESA GEOTHERMAL IH 00-085	LDS
ORMESA GEOTHERMAL IE 00-102	LDS
ZENOS / HIGHWAY 15	CDL
J R SIMPLOT	CERCLIS
A & A AUTO DISMANTLERS	CERC-NFRAP, CA WDS
SANDIA RR SIDING/J R SIMPLOT CO	CERC-NFRAP
MEADOWS EXPRESS	UST
ROCKET	UST
CITY OF CALEXICO/KLOKE TRACT	VCP, ENVIROSTOR
USA PETROLEUM COMPANY #249	HIST UST
U.S. BORDER PATROL	AST
GEO-MISSION O&M INC 90-005	WMUDS/SWAT
TORRENCE'S FARM IMPLEMENTS	HAZNET
TORRENCE'S FARM IMPLEMENTS	HAZNET
CROAK FARMS	HAZNET
GEOTHERMAL TEST FACILITY	HAZNET
IMPERIAL IRRIGATION DIST/HYDRO DRO	HAZNET
DON OSBORNE	HAZNET
J R SIMPLOT CO - SANDIA	HAZNET
IMPERIAL COTTON PRODUCTS HOLTV	FINDS, EMI
J. R. SIMPLOT - SANDIA SIDING	SLIC
J.R. SIMPLOT COMPANY	SLIC
REMINGTON JUNIOR HIGH SCHOOL	SCH, ENVIROSTOR
ORMESA 1E	EMI
PLANT EAST MESA PEM UNIT 5&6	EMI
J R SIMPLOT - SANDIA RAILROAD SIDI	ENVIROSTOR

OVERVIEW MAP - 2419249.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- ▣ National Priority List Sites
- ▣ Dept. Defense Sites

- ▣ Indian Reservations BIA
- ▣ County Boundary
- ▣ Power transmission lines
- ▣ Oil & Gas pipelines
- ▣ 100-year flood zone
- ▣ 500-year flood zone
- ▣ Areas of Concern

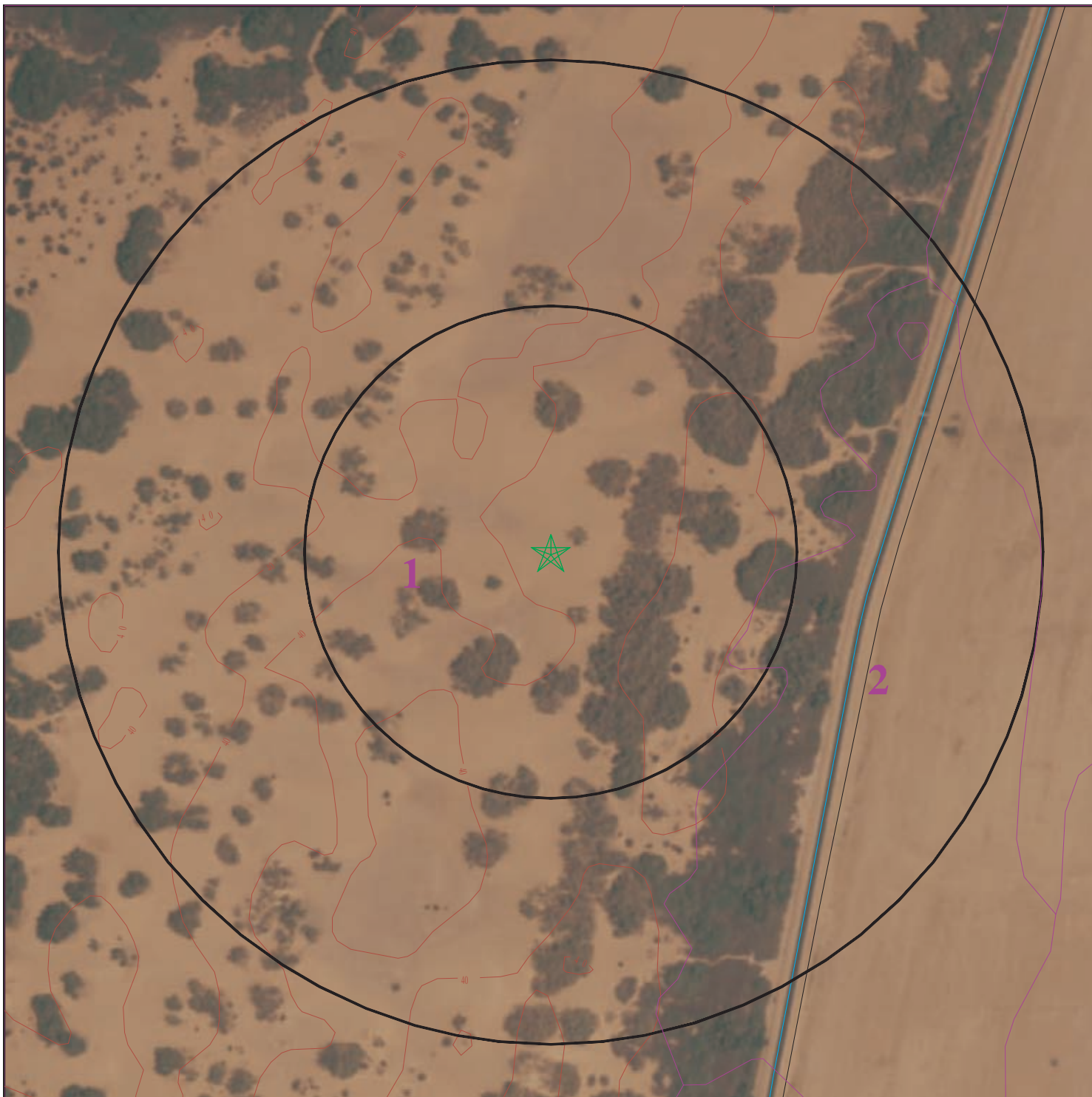


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

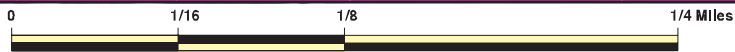
SITE NAME: Heber Dunes SRVA
 ADDRESS: Heber Road at State Route 7
 Imperial County CA 92249
 LAT/LONG: 32.7183 / 115.3915

CLIENT: Wright Env. Services Inc.
 CONTACT: John Lynch
 INQUIRY #: 2419249.2s
 DATE: February 11, 2009 1:37 pm

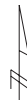
DETAIL MAP - 2419249.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🏠 National Priority List Sites
- 🏠 Dept. Defense Sites



- 🏠 Indian Reservations BIA
- 🛞 Oil & Gas pipelines
- 🌊 100-year flood zone
- 🌊 500-year flood zone
- 🏠 Areas of Concern



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Heber Dunes SRVA
 ADDRESS: Heber Road at State Route 7
 Imperial County CA 92249
 LAT/LONG: 32.7183 / 115.3915

CLIENT: Wright Env. Services Inc.
 CONTACT: John Lynch
 INQUIRY #: 2419249.2s
 DATE: February 11, 2009 1:38 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL		2.500	0	0	0	0	0	0
Proposed NPL		2.500	0	0	0	0	0	0
NPL LIENS		1.500	0	0	0	0	0	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL		2.500	0	0	0	0	0	0
<i>Federal CERCLIS list</i>								
CERCLIS		2.000	0	0	0	0	0	0
<i>Federal CERCLIS NFRAP site List</i>								
CERC-NFRAP		2.000	0	0	0	0	0	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS		2.500	0	0	0	0	0	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF		2.000	0	0	0	0	0	0
<i>Federal RCRA generators list</i>								
RCRA-LQG		1.750	0	0	0	0	0	0
RCRA-SQG		1.750	0	0	0	0	0	0
RCRA-CESQG		1.750	0	0	0	0	0	0
<i>Federal institutional controls / engineering controls registries</i>								
US ENG CONTROLS		2.000	0	0	0	0	0	0
US INST CONTROL		2.000	0	0	0	0	0	0
<i>Federal ERNS list</i>								
ERNS		1.500	0	0	0	0	0	0
<i>State- and tribal - equivalent NPL</i>								
RESPONSE		2.500	0	0	0	0	0	0
<i>State- and tribal - equivalent CERCLIS</i>								
ENVIROSTOR		2.500	0	0	0	0	0	0
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF		2.000	0	0	0	0	0	0
<i>State and tribal leaking storage tank lists</i>								
LUST		2.000	0	0	0	0	0	0
SLIC		2.000	0	0	0	0	0	0
INDIAN LUST		2.000	0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<i>State and tribal registered storage tank lists</i>								
UST		1.750	0	0	0	0	0	0
AST		1.750	0	0	0	0	0	0
INDIAN UST		1.750	0	0	0	0	0	0
<i>State and tribal voluntary cleanup sites</i>								
VCP		2.000	0	0	0	0	0	0
INDIAN VCP		2.000	0	0	0	0	0	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS		2.000	0	0	0	0	0	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
DEBRIS REGION 9		2.000	0	0	0	0	0	0
ODI		2.000	0	0	0	0	0	0
WMUDS/SWAT		2.000	0	0	0	0	0	0
SWRCY		2.000	0	0	0	0	0	0
HAULERS		1.500	0	0	0	0	0	0
INDIAN ODI		2.000	0	0	0	0	0	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US CDL		1.500	0	0	0	0	0	0
HIST Cal-Sites		2.500	0	0	0	0	0	0
SCH		1.750	0	0	0	0	0	0
Toxic Pits		2.500	0	0	0	0	0	0
CDL		1.500	0	0	0	0	0	0
<i>Local Lists of Registered Storage Tanks</i>								
CA FID UST		1.750	0	0	0	0	0	0
HIST UST		1.750	0	0	0	0	1	1
SWEEPS UST		1.750	0	0	0	0	0	0
<i>Local Land Records</i>								
LIENS 2		1.500	0	0	0	0	0	0
LUCIS		2.000	0	0	0	0	0	0
LIENS		1.500	0	0	0	0	0	0
DEED		2.000	0	0	0	0	0	0
<i>Records of Emergency Release Reports</i>								
HMIRS		1.500	0	0	0	0	0	0
CHMIRS		1.500	0	0	0	0	0	0
LDS		1.500	0	0	0	0	0	0
MCS		1.500	0	0	0	0	0	0
<i>Other Ascertainable Records</i>								
RCRA-NonGen		1.750	0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DOT OPS		1.500	0	0	0	0	0	0
DOD		2.500	0	0	0	0	0	0
FUDS		2.500	0	0	0	0	0	0
CONSENT		2.500	0	0	0	0	0	0
ROD		2.500	0	0	0	0	0	0
UMTRA		2.000	0	0	0	0	0	0
MINES		1.750	0	0	0	0	0	0
TRIS		1.500	0	0	0	0	0	0
TSCA		1.500	0	0	0	0	0	0
FTTS		1.500	0	0	0	0	0	0
HIST FTTS		1.500	0	0	0	0	0	0
SSTS		1.500	0	0	0	0	0	0
ICIS		1.500	0	0	0	0	0	0
PADS		1.500	0	0	0	0	0	0
MLTS		1.500	0	0	0	0	0	0
RADINFO		1.500	0	0	0	0	0	0
FINDS		1.500	0	0	0	0	0	0
RAATS		1.500	0	0	0	0	0	0
CA BOND EXP. PLAN		2.500	0	0	0	0	0	0
CA WDS		1.500	0	0	0	0	0	0
Cortese		2.000	0	0	0	0	0	0
Notify 65		2.500	0	0	0	0	0	0
DRYCLEANERS		1.750	0	0	0	0	0	0
WIP		1.750	0	0	0	0	0	0
HAZNET		1.500	0	0	0	0	0	0
EMI		1.500	0	0	0	0	0	0
INDIAN RESERV		2.500	0	0	0	0	0	0
SCRD DRYCLEANERS		2.000	0	0	0	0	0	0
PWS		TP	NR	NR	NR	NR	NR	0

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants		2.500	0	0	0	0	0	0
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

1
NE
> 1
1.562 mi.
8245 ft.

CAREY L. GRAHAM
1728 KING RD
HOLTVILLE, CA 92250

HIST UST **U001573957**
 N/A

Relative:
Lower

HIST UST:
Region: STATE
Facility ID: 00000015259
Facility Type: Other
Other Type: FARM VEHICLES
Total Tanks: 0001
Contact Name: Not reported
Telephone: 6193562613
Owner Name: CAREY L. GRAHAM
Owner Address: 1728 E. KING RD.
Owner City,St,Zip: HOLTVILLE, CA 92250

Actual:
32 ft.

Tank Num: 001
Container Num: #1
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: None

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CALEXICO	S103393764	CITY OF CALEXICO/KLOKE TRACT	COLE / CAMACHO RDS & HWY 111	92231	VCP, ENVIROSTOR
CALEXICO	S105628419	REMINGTON JUNIOR HIGH SCHOOL	249 WEST HIGHWAY 98	92231	SCH, ENVIROSTOR
CALEXICO	1003879886	A & A AUTO DISMANTLERS	30 WEST HIGHWAY 98	92231	CERC-NFRAP, CA WDS
CALEXICO	U004049030	MEADOWS EXPRESS	1059 E HWY 98	92231	UST
CALEXICO	U001573766	USA PETROLEUM COMPANY #249	1002 IMPERIAL HIGHWAY	92231	HIST UST
CALEXICO	U004049669	ROCKET	435 S MENVIELLE RD	92231	UST
HEBER	S108756706	TORRENCE'S FARM IMPLEMENTS	190 E HIGHWAY 86	92249	HAZNET
HEBER	S107145325	TORRENCE'S FARM IMPLEMENTS	190 E HWY 86	92249	HAZNET
HOLTVILLE	S108745528	CROAK FARMS	2151 HWY 115	92250	HAZNET
HOLTVILLE	S106484170	J. R. SIMPLOT - SANDIA SIDING	HIGHWAY 115 / HARRIS ROAD	92250	SLIC
HOLTVILLE	S101480325	J R SIMPLOT - SANDIA RAILROAD SIDI	HIGHWAY 115 AT HARRIS ROAD	92250	ENVIROSTOR
HOLTVILLE	1010417278	J R SIMPLOT	HIGHWAY 115 AND HARRIS ROAD	92250	CERCLIS
HOLTVILLE	1006095000	IMPERIAL COTTON PRODUCTS HOLTV	2151 HWY 115	92250	FINDS, EMI
HOLTVILLE	S109287326	ORMESA GEOTHERMAL IH 00-085	3302 A-EAST EVAN HEWES HWY, #A	92250	LDS
HOLTVILLE	S109286364	ORMESA GEOTHERMAL IE 00-102	3302 B-EAST EVAN HEWES HWY, #B	92250	LDS
HOLTVILLE	S105939123	ORMESA 1E	3302-B EAST EVAN HEWES HWY	92250	EMI
HOLTVILLE	S103678613	GEOTHERMAL TEST FACILITY	E EVAN HEWES HWY	92250	HAZNET
HOLTVILLE	S105725112	IMPERIAL IRRIGATION DIST/HYDRO DRO	3675 E HWY 98	92250	HAZNET
HOLTVILLE	S103646463	DON OSBORNE	251 SOUTH HWY 115	92250	HAZNET
HOLTVILLE	S109282284	PLANT EAST MESA PEM UNIT 5&6	3300 EAST MESA HEWES HIGHWAY	92250	EMI
HOLTVILLE	1003878496	SANDIA RR SIDING/J R SIMPLOT CO	NEXT TO HWY 115	92250	CERC-NFRAP
HOLTVILLE	S103679327	J R SIMPLOT CO - SANDIA	N W CORNER HWY 115 HARRIS RD	92250	HAZNET
HOLTVILLE	S107541265		ZENOS / HIGHWAY 15	92250	CDL
HOLTVILLE	S101310806	GEO-MISSION O&M INC 90-005	3300 EAST EVAN HEWES HWY	92250	WMUDS/SWAT
IMPERIAL	S106388968	J.R. SIMPLOT COMPANY	HIGHWAY 115 / HARRIS ROAD	92250	SLIC
IMPERIAL COUNTY	A100307303	U.S. BORDER PATROL	HWY.78, MILE MARKER 56		AST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 09/29/2008	Source: EPA
Date Data Arrived at EDR: 10/10/2008	Telephone: N/A
Date Made Active in Reports: 11/19/2008	Last EDR Contact: 01/26/2009
Number of Days to Update: 40	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 09/29/2008	Source: EPA
Date Data Arrived at EDR: 10/10/2008	Telephone: N/A
Date Made Active in Reports: 11/19/2008	Last EDR Contact: 01/26/2009
Number of Days to Update: 40	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 11/17/2008
Number of Days to Update: 56	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 09/29/2008	Source: EPA
Date Data Arrived at EDR: 10/10/2008	Telephone: N/A
Date Made Active in Reports: 11/19/2008	Last EDR Contact: 01/26/2009
Number of Days to Update: 40	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/07/2008	Source: EPA
Date Data Arrived at EDR: 10/16/2008	Telephone: 703-412-9810
Date Made Active in Reports: 12/08/2008	Last EDR Contact: 01/30/2009
Number of Days to Update: 53	Next Scheduled EDR Contact: 04/13/2009
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/03/2007	Source: EPA
Date Data Arrived at EDR: 12/06/2007	Telephone: 703-412-9810
Date Made Active in Reports: 02/20/2008	Last EDR Contact: 01/26/2009
Number of Days to Update: 76	Next Scheduled EDR Contact: 03/16/2009
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/11/2008	Source: EPA
Date Data Arrived at EDR: 09/19/2008	Telephone: 800-424-9346
Date Made Active in Reports: 10/16/2008	Last EDR Contact: 12/01/2008
Number of Days to Update: 27	Next Scheduled EDR Contact: 03/02/2009
	Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Transporters, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/10/2008
Date Data Arrived at EDR: 09/23/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 23

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/06/2009
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/10/2008
Date Data Arrived at EDR: 09/23/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 23

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/06/2009
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/10/2008
Date Data Arrived at EDR: 09/23/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 23

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/06/2009
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/10/2008
Date Data Arrived at EDR: 09/23/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 23

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/06/2009
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/06/2008
Date Data Arrived at EDR: 10/17/2008
Date Made Active in Reports: 12/08/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/06/2008	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/17/2008	Telephone: 703-603-0695
Date Made Active in Reports: 12/08/2008	Last EDR Contact: 12/29/2008
Number of Days to Update: 52	Next Scheduled EDR Contact: 03/30/2009
	Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2007	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/23/2008	Telephone: 202-267-2180
Date Made Active in Reports: 03/17/2008	Last EDR Contact: 01/30/2009
Number of Days to Update: 54	Next Scheduled EDR Contact: 04/19/2009
	Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 11/25/2008	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/26/2008	Telephone: 916-323-3400
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 11/26/2008
Number of Days to Update: 62	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 11/25/2008	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/26/2008	Telephone: 916-323-3400
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 11/26/2008
Number of Days to Update: 62	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/01/2008
Date Data Arrived at EDR: 12/09/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 49

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 12/09/2008
Next Scheduled EDR Contact: 03/09/2009
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 02/02/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: Varies

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 01/12/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 11/17/2008
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 12/01/2008
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/06/2009
Date Data Arrived at EDR: 01/08/2009
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 19

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 01/08/2009
Next Scheduled EDR Contact: 04/06/2009
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 11/17/2008
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 01/05/2009
Next Scheduled EDR Contact: 04/06/2009
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 05/11/2009
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 12/23/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 01/19/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Quarterly

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/06/2009
Date Data Arrived at EDR: 01/08/2009
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 19

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/08/2009
Next Scheduled EDR Contact: 04/06/2009
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 11/17/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 01/05/2009
Next Scheduled EDR Contact: 04/06/2009
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 05/11/2009
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 01/19/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 12/01/2008
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 11/17/2008
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 11/24/2008
Next Scheduled EDR Contact: 02/23/2009
Data Release Frequency: Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/10/2008
Date Data Arrived at EDR: 10/10/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 11/17/2008
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/18/2008
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 12/23/2008
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 11/17/2008
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008	Source: EPA Region 1
Date Data Arrived at EDR: 03/14/2008	Telephone: 617-918-1313
Date Made Active in Reports: 03/20/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 6	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 06/06/2008	Source: EPA Region 4
Date Data Arrived at EDR: 10/09/2008	Telephone: 404-562-8677
Date Made Active in Reports: 11/19/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 41	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/25/2008	Source: EPA Region 6
Date Data Arrived at EDR: 11/26/2008	Telephone: 214-665-6597
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 27	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/01/2008	Source: EPA Region 7
Date Data Arrived at EDR: 12/03/2008	Telephone: 913-551-7003
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 11/19/2008
Number of Days to Update: 20	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 12/02/2008	Source: EPA Region 8
Date Data Arrived at EDR: 12/04/2008	Telephone: 303-312-6271
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 19	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/06/2009	Source: SWRCB
Date Data Arrived at EDR: 01/08/2009	Telephone: 916-480-1028
Date Made Active in Reports: 01/30/2009	Last EDR Contact: 01/08/2009
Number of Days to Update: 22	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/27/2007	Telephone: 916-341-5712
Date Made Active in Reports: 02/14/2008	Last EDR Contact: 02/09/2009
Number of Days to Update: 79	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 03/12/2008	Source: EPA, Region 1
Date Data Arrived at EDR: 03/14/2008	Telephone: 617-918-1313
Date Made Active in Reports: 03/20/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 6	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 06/06/2008	Source: EPA Region 4
Date Data Arrived at EDR: 10/09/2008	Telephone: 404-562-9424
Date Made Active in Reports: 11/19/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 41	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 09/08/2008	Source: EPA Region 5
Date Data Arrived at EDR: 09/19/2008	Telephone: 312-886-6136
Date Made Active in Reports: 10/16/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 27	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/25/2008	Source: EPA Region 6
Date Data Arrived at EDR: 11/26/2008	Telephone: 214-665-7591
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 27	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 06/01/2007	Source: EPA Region 7
Date Data Arrived at EDR: 06/14/2007	Telephone: 913-551-7003
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 11/19/2008
Number of Days to Update: 21	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 12/01/2008	Source: EPA Region 8
Date Data Arrived at EDR: 12/04/2008	Telephone: 303-312-6137
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 19	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/18/2008	Source: EPA Region 10
Date Data Arrived at EDR: 11/19/2008	Telephone: 206-553-2857
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 34	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 09/05/2008	Source: EPA Region 9
Date Data Arrived at EDR: 09/19/2008	Telephone: 415-972-3368
Date Made Active in Reports: 10/16/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 27	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 01/19/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/19/2009
	Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 04/02/2008	Source: EPA, Region 1
Date Data Arrived at EDR: 04/22/2008	Telephone: 617-918-1102
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 01/19/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/19/2009
	Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/25/2008	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/26/2008	Telephone: 916-323-3400
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 11/26/2008
Number of Days to Update: 62	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 10/01/2008	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/14/2008	Telephone: 202-566-2777
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 02/10/2009
Number of Days to Update: 39	Next Scheduled EDR Contact: 04/13/2009
	Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 03/25/2008	Source: EPA, Region 9
Date Data Arrived at EDR: 04/17/2008	Telephone: 415-972-3336
Date Made Active in Reports: 05/15/2008	Last EDR Contact: 12/22/2008
Number of Days to Update: 28	Next Scheduled EDR Contact: 03/23/2009
	Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000	Source: State Water Resources Control Board
Date Data Arrived at EDR: 04/10/2000	Telephone: 916-227-4448
Date Made Active in Reports: 05/10/2000	Last EDR Contact: 12/01/2008
Number of Days to Update: 30	Next Scheduled EDR Contact: 03/02/2009
	Data Release Frequency: Quarterly

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 01/05/2009	Source: Department of Conservation
Date Data Arrived at EDR: 01/08/2009	Telephone: 916-323-3836
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 01/08/2009
Number of Days to Update: 19	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 12/22/2008	Source: Integrated Waste Management Board
Date Data Arrived at EDR: 12/22/2008	Telephone: 916-341-6422
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 12/22/2008
Number of Days to Update: 36	Next Scheduled EDR Contact: 03/09/2009
	Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/03/2007	Telephone: 703-308-8245
Date Made Active in Reports: 01/24/2008	Last EDR Contact: 11/24/2008
Number of Days to Update: 52	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 07/01/2008	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 10/31/2008	Telephone: 202-307-1000
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 10/31/2008
Number of Days to Update: 53	Next Scheduled EDR Contact: 03/23/2009
	Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 08/03/2006	Telephone: 916-323-3400
Date Made Active in Reports: 08/24/2006	Last EDR Contact: 11/24/2008
Number of Days to Update: 21	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/25/2008	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/26/2008	Telephone: 916-323-3400
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 11/26/2008
Number of Days to Update: 62	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 09/30/2008
Date Data Arrived at EDR: 10/06/2008
Date Made Active in Reports: 10/13/2008
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/02/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/29/2008
Date Data Arrived at EDR: 12/29/2008
Date Made Active in Reports: 01/30/2009
Number of Days to Update: 32

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 12/22/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: Varies

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/19/2008	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/29/2008	Telephone: 202-564-6023
Date Made Active in Reports: 09/09/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 11	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005	Source: Department of the Navy
Date Data Arrived at EDR: 12/11/2006	Telephone: 843-820-7326
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 12/08/2008
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/09/2009
	Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/06/2008	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/07/2008	Telephone: 916-323-3400
Date Made Active in Reports: 11/26/2008	Last EDR Contact: 02/02/2009
Number of Days to Update: 19	Next Scheduled EDR Contact: 05/04/2009
	Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/30/2008	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 12/30/2008	Telephone: 916-323-3400
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 12/30/2009
Number of Days to Update: 28	Next Scheduled EDR Contact: 03/30/2009
	Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/30/2008	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 10/16/2008	Telephone: 202-366-4555
Date Made Active in Reports: 11/19/2008	Last EDR Contact: 01/30/2009
Number of Days to Update: 34	Next Scheduled EDR Contact: 04/13/2009
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2007	Source: Office of Emergency Services
Date Data Arrived at EDR: 05/09/2008	Telephone: 916-845-8400
Date Made Active in Reports: 06/20/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 42	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 01/06/2009	Source: State Water Quality Control Board
Date Data Arrived at EDR: 01/08/2009	Telephone: 866-480-1028
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 01/08/2009
Number of Days to Update: 19	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 01/06/2009	Source: State Water Resources Control Board
Date Data Arrived at EDR: 01/08/2009	Telephone: 866-480-1028
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 01/08/2009
Number of Days to Update: 19	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/10/2008	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/23/2008	Telephone: (415) 495-8895
Date Made Active in Reports: 10/16/2008	Last EDR Contact: 02/06/2009
Number of Days to Update: 23	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 05/14/2008	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 05/28/2008	Telephone: 202-366-4595
Date Made Active in Reports: 08/08/2008	Last EDR Contact: 11/26/2008
Number of Days to Update: 72	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 02/06/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 09/05/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 18

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/15/2008
Date Data Arrived at EDR: 10/22/2008
Date Made Active in Reports: 12/23/2008
Number of Days to Update: 62

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/19/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 10/21/2008
Date Data Arrived at EDR: 10/29/2008
Date Made Active in Reports: 12/23/2008
Number of Days to Update: 55

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 07/13/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/16/2009
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/07/2008
Date Data Arrived at EDR: 09/23/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 23

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/23/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 01/12/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/08/2008
Date Data Arrived at EDR: 10/17/2008
Date Made Active in Reports: 12/08/2008
Number of Days to Update: 52

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 12/15/2008
Next Scheduled EDR Contact: 03/16/2009
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 10/08/2008
Date Data Arrived at EDR: 10/17/2008
Date Made Active in Reports: 12/08/2008
Number of Days to Update: 52

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 12/15/2008
Next Scheduled EDR Contact: 03/16/2009
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 12/04/2008
Next Scheduled EDR Contact: 01/12/2009
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/31/2008
Date Data Arrived at EDR: 08/13/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/12/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/04/2007
Date Data Arrived at EDR: 02/07/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 39

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 02/02/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/03/2008
Date Data Arrived at EDR: 10/15/2008
Date Made Active in Reports: 11/19/2008
Number of Days to Update: 35

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/28/2008
Date Data Arrived at EDR: 10/29/2008
Date Made Active in Reports: 12/08/2008
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/30/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/30/2008	Source: EPA
Date Data Arrived at EDR: 10/31/2008	Telephone: (415) 947-8000
Date Made Active in Reports: 12/23/2008	Last EDR Contact: 12/29/2008
Number of Days to Update: 53	Next Scheduled EDR Contact: 03/30/2009
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005	Source: EPA/NTIS
Date Data Arrived at EDR: 03/06/2007	Telephone: 800-424-9346
Date Made Active in Reports: 04/13/2007	Last EDR Contact: 12/09/2008
Number of Days to Update: 38	Next Scheduled EDR Contact: 03/09/2009
	Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 06/20/2007	Telephone: 916-341-5227
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 12/15/2008
Number of Days to Update: 9	Next Scheduled EDR Contact: 03/16/2009
	Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 05/29/2001
Date Made Active in Reports: 07/26/2001
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 01/12/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 09/23/2008
Date Data Arrived at EDR: 09/24/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 5

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/11/2009
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 10/31/2008
Date Data Arrived at EDR: 11/03/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 23

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 01/23/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 10/04/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 34

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 02/03/2009
Next Scheduled EDR Contact: 05/04/2008
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 10/16/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 41

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 01/16/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 02/06/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 09/08/2008
Date Data Arrived at EDR: 09/10/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 05/11/2009
Data Release Frequency: Varies

PWS: Public Water System Data

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 02/24/2000
Date Data Arrived at EDR: 04/27/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA
Telephone: N/A
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: N/A

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 02/06/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: N/A

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 07/09/2008
Date Data Arrived at EDR: 09/30/2008
Date Made Active in Reports: 10/07/2008
Number of Days to Update: 7

Source: EPA
Telephone: 202-564-6064
Last EDR Contact: 12/29/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Quarterly

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/28/2008
Date Data Arrived at EDR: 10/30/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/19/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/28/2008
Date Data Arrived at EDR: 10/30/2008
Date Made Active in Reports: 12/05/2008
Number of Days to Update: 36

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/19/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/24/2008
Date Data Arrived at EDR: 11/25/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 63

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 11/24/2008
Next Scheduled EDR Contact: 02/23/2009
Data Release Frequency: Semi-Annually

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/14/2009
Date Data Arrived at EDR: 01/15/2009
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 12

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 02/02/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: Semi-Annually

KERN COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 01/06/2009
Date Data Arrived at EDR: 01/07/2009
Date Made Active in Reports: 01/30/2009
Number of Days to Update: 23

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 12/15/2008
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 07/07/1999
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 02/02/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/31/2008
Date Data Arrived at EDR: 10/17/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 40

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 05/11/2009
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 11/10/2008
Date Data Arrived at EDR: 11/25/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 63

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 11/13/2008
Next Scheduled EDR Contact: 02/09/2009
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2008
Date Data Arrived at EDR: 03/20/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 25

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 12/08/2008
Next Scheduled EDR Contact: 03/09/2009
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/14/2008
Date Data Arrived at EDR: 04/10/2008
Date Made Active in Reports: 05/06/2008
Number of Days to Update: 26

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 05/11/2009
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 10/06/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 10

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 05/11/2009
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 11/17/2008
Next Scheduled EDR Contact: 02/16/2009
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 12/11/2008
Date Data Arrived at EDR: 12/11/2008
Date Made Active in Reports: 01/30/2009
Number of Days to Update: 50

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 05/11/2009
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 08/04/2008
Date Data Arrived at EDR: 08/29/2008
Date Made Active in Reports: 09/15/2008
Number of Days to Update: 17

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 07/09/2008
Date Data Arrived at EDR: 07/09/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/22/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/22/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: Annually

ORANGE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 12/02/2008
Date Data Arrived at EDR: 12/16/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 12/02/2008
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 12/02/2008
Date Data Arrived at EDR: 12/23/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 35

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 12/02/2008
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 12/02/2008
Date Data Arrived at EDR: 12/23/2008
Date Made Active in Reports: 01/30/2009
Number of Days to Update: 38

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 17

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 02/09/2009
Next Scheduled EDR Contact: 03/16/2009
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 11/06/2008
Date Data Arrived at EDR: 11/17/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 9

Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: Quarterly

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/25/2008
Date Made Active in Reports: 12/05/2008
Number of Days to Update: 10

Source: Health Services Agency
Telephone: 951-358-5055
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Contaminated Sites

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 09/08/2008
Date Data Arrived at EDR: 12/02/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 56

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/30/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: Quarterly

ML - Regulatory Compliance Master List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 09/08/2008
Date Data Arrived at EDR: 10/29/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 28

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/30/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 01/07/2009
Date Data Arrived at EDR: 01/09/2009
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 18

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 12/01/2008
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 07/16/2008
Date Data Arrived at EDR: 10/29/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 28

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/31/2008
Next Scheduled EDR Contact: 03/30/2009
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 11/01/2008
Date Data Arrived at EDR: 12/23/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 35

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 12/02/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 11/05/2008	Source: San Diego County Department of Environmental Health
Date Data Arrived at EDR: 12/30/2008	Telephone: 619-338-2371
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 12/30/2008
Number of Days to Update: 28	Next Scheduled EDR Contact: 03/30/2009
	Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008	Source: Department Of Public Health San Francisco County
Date Data Arrived at EDR: 09/19/2008	Telephone: 415-252-3920
Date Made Active in Reports: 09/29/2008	Last EDR Contact: 12/01/2008
Number of Days to Update: 10	Next Scheduled EDR Contact: 03/02/2009
	Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008	Source: Department of Public Health
Date Data Arrived at EDR: 09/19/2008	Telephone: 415-252-3920
Date Made Active in Reports: 10/01/2008	Last EDR Contact: 12/01/2008
Number of Days to Update: 12	Next Scheduled EDR Contact: 03/02/2009
	Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 11/07/2008	Source: Environmental Health Department
Date Data Arrived at EDR: 12/03/2008	Telephone: N/A
Date Made Active in Reports: 01/30/2009	Last EDR Contact: 01/12/2009
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/13/2009
	Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 11/19/2008	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 11/19/2008	Telephone: 650-363-1921
Date Made Active in Reports: 11/26/2008	Last EDR Contact: 01/05/2009
Number of Days to Update: 7	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Annually

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 01/05/2009	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 01/06/2009	Telephone: 650-363-1921
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 01/05/2009
Number of Days to Update: 21	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 12/22/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 12/29/2008
Date Data Arrived at EDR: 12/29/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 29

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 12/22/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: Varies

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 12/01/2008
Date Data Arrived at EDR: 12/04/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 54

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 12/01/2008
Next Scheduled EDR Contact: 03/02/2009
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/22/2008
Date Data Arrived at EDR: 10/06/2008
Date Made Active in Reports: 10/13/2008
Number of Days to Update: 7

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 01/05/2009
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 09/22/2008
Date Data Arrived at EDR: 10/17/2008
Date Made Active in Reports: 12/05/2008
Number of Days to Update: 49

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 12/22/2008
Next Scheduled EDR Contact: 03/23/2009
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/20/2009
Date Data Arrived at EDR: 01/21/2009
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/19/2009
Next Scheduled EDR Contact: 04/19/2009
Data Release Frequency: Quarterly

SUTTER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007	Source: Sutter County Department of Agriculture
Date Data Arrived at EDR: 05/04/2007	Telephone: 530-822-7500
Date Made Active in Reports: 05/24/2007	Last EDR Contact: 12/29/2008
Number of Days to Update: 20	Next Scheduled EDR Contact: 03/30/2009
	Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 11/26/2008	Source: Ventura County Environmental Health Division
Date Data Arrived at EDR: 12/30/2008	Telephone: 805-654-2813
Date Made Active in Reports: 01/27/2009	Last EDR Contact: 12/10/2008
Number of Days to Update: 28	Next Scheduled EDR Contact: 03/09/2009
	Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/2008	Source: Environmental Health Division
Date Data Arrived at EDR: 09/04/2008	Telephone: 805-654-2813
Date Made Active in Reports: 09/18/2008	Last EDR Contact: 11/17/2008
Number of Days to Update: 14	Next Scheduled EDR Contact: 02/16/2009
	Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008	Source: Environmental Health Division
Date Data Arrived at EDR: 06/24/2008	Telephone: 805-654-2813
Date Made Active in Reports: 07/31/2008	Last EDR Contact: 12/09/2008
Number of Days to Update: 37	Next Scheduled EDR Contact: 03/09/2009
	Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/29/2008	Source: Environmental Health Division
Date Data Arrived at EDR: 01/08/2009	Telephone: 805-654-2813
Date Made Active in Reports: 01/30/2009	Last EDR Contact: 01/08/2009
Number of Days to Update: 22	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 11/13/2008	Source: Yolo County Department of Health
Date Data Arrived at EDR: 12/03/2008	Telephone: 530-666-8646
Date Made Active in Reports: 01/30/2009	Last EDR Contact: 01/12/2009
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/13/2009
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2005	Source: Department of Environmental Protection
Date Data Arrived at EDR: 06/15/2007	Telephone: 860-424-3375
Date Made Active in Reports: 08/20/2007	Last EDR Contact: 12/11/2008
Number of Days to Update: 66	Next Scheduled EDR Contact: 03/09/2009
	Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 09/30/2007	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/04/2007	Telephone: N/A
Date Made Active in Reports: 12/31/2007	Last EDR Contact: 02/03/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 05/04/2009
	Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/21/2008	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 11/26/2008	Telephone: 518-402-8651
Date Made Active in Reports: 12/11/2008	Last EDR Contact: 11/26/2008
Number of Days to Update: 15	Next Scheduled EDR Contact: 02/23/2009
	Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2007	Source: Department of Environmental Protection
Date Data Arrived at EDR: 09/11/2008	Telephone: N/A
Date Made Active in Reports: 10/02/2008	Last EDR Contact: 12/08/2008
Number of Days to Update: 21	Next Scheduled EDR Contact: 03/09/2009
	Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 10/07/2008	Source: Department of Environmental Management
Date Data Arrived at EDR: 10/10/2008	Telephone: 401-222-2797
Date Made Active in Reports: 10/28/2008	Last EDR Contact: 12/15/2008
Number of Days to Update: 18	Next Scheduled EDR Contact: 03/16/2009
	Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2007	Source: Department of Natural Resources
Date Data Arrived at EDR: 08/22/2008	Telephone: N/A
Date Made Active in Reports: 09/08/2008	Last EDR Contact: 01/05/2009
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/06/2009
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation

Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

HEBER DUNES SRVA
HEBER ROAD AT STATE ROUTE 7
IMPERIAL COUNTY, CA 92249

TARGET PROPERTY COORDINATES

Latitude (North):	32.71830 - 32° 43' 5.9"
Longitude (West):	115.3915 - 115° 23' 29.4"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	650746.6
UTM Y (Meters):	3621012.0
Elevation:	34 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	32115-F4 CALEXICO, CA
Most Recent Revision:	1991

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

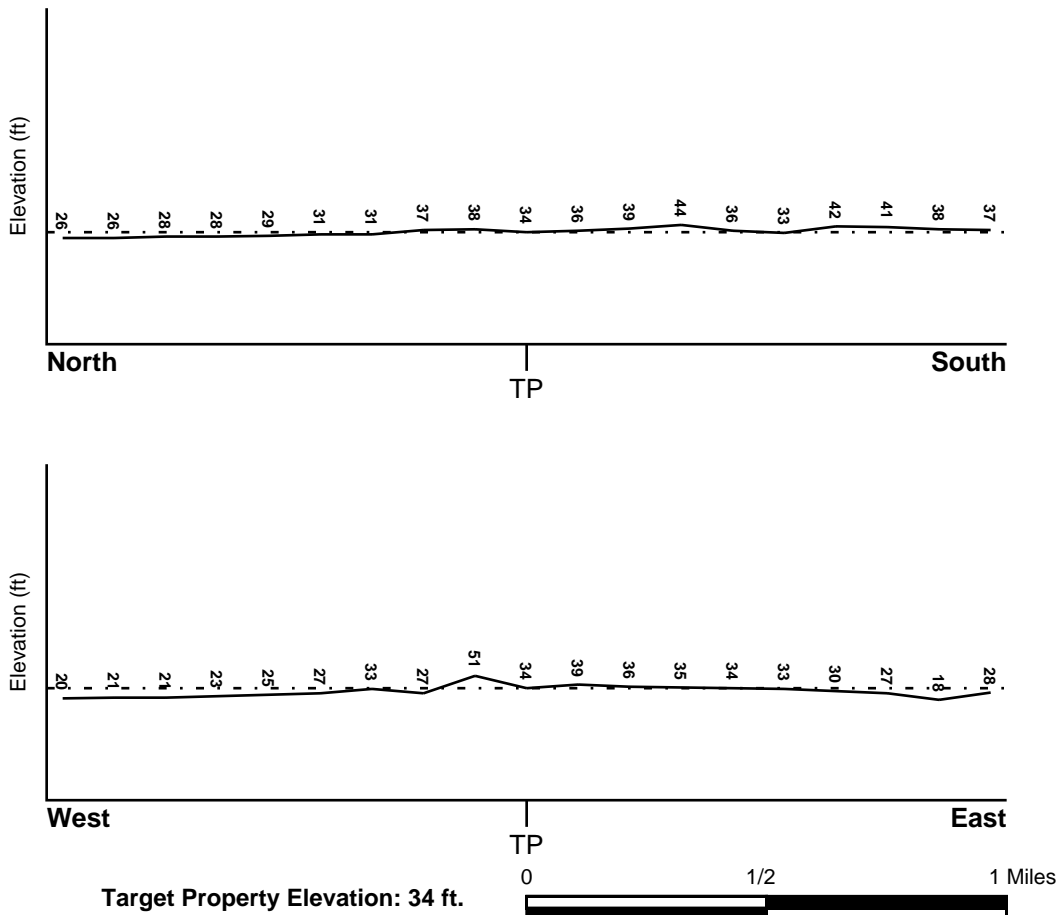
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u>	FEMA Flood <u>Electronic Data</u>
IMPERIAL, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0600651025B

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	NWI Electronic <u>Data Coverage</u>
CALEXICO	Not Available

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data:*

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

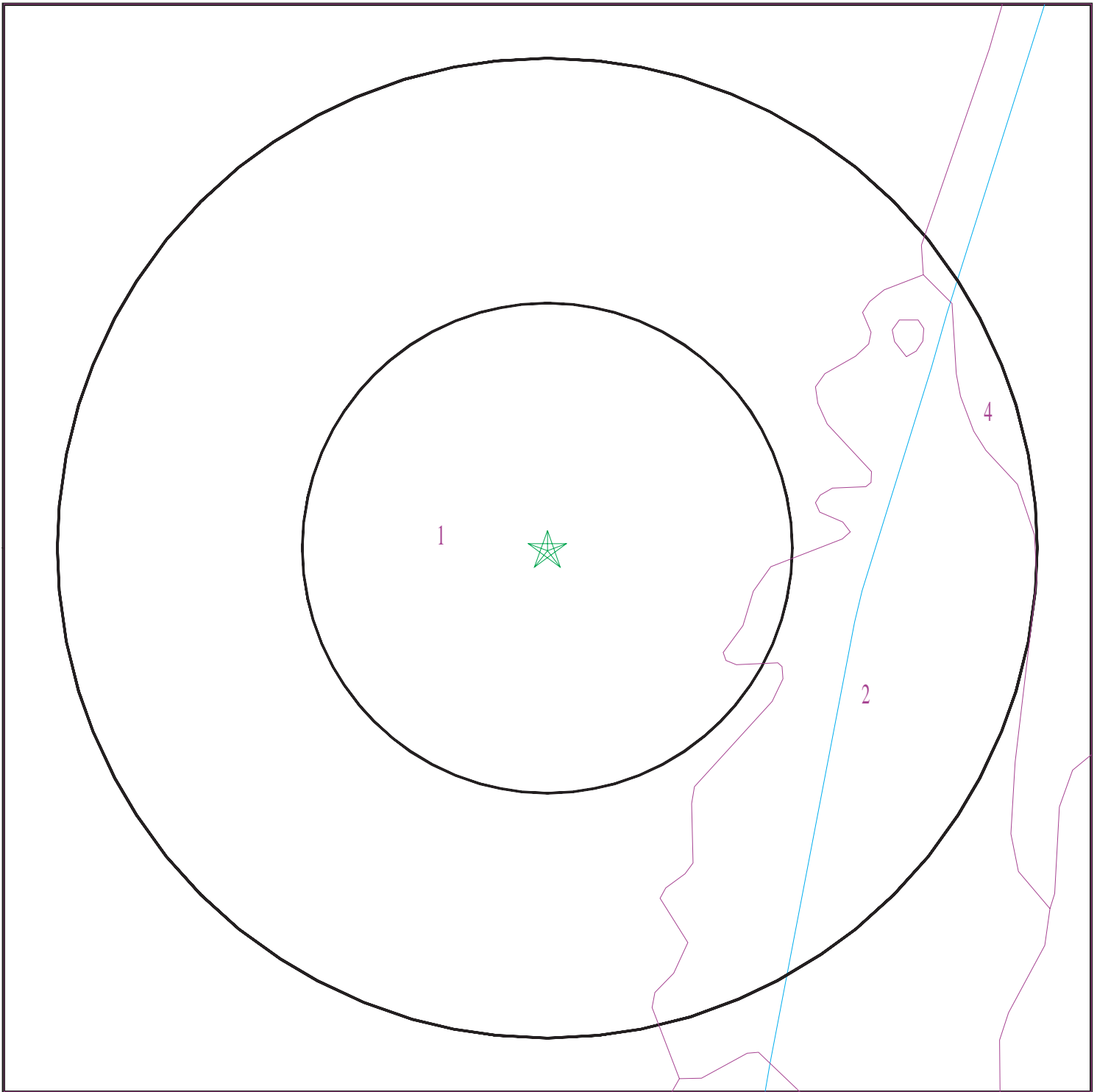
Era: Cenozoic
System: Quaternary
Series: Quaternary
Code: Q (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 2419249.2s



- ★ Target Property
- SSURGO Soil
- Water

0 1/16 1/8 1/4 Miles



SITE NAME: Heber Dunes SRVA
ADDRESS: Heber Road at State Route 7
Imperial County CA 92249
LAT/LONG: 32.7183 / 115.3915

CLIENT: Wright Env. Services Inc.
CONTACT: John Lynch
INQUIRY #: 2419249.2s
DATE: February 11, 2009 1:38 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Rositas

Soil Surface Texture: fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 122 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9
2	9 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: Meloland

Soil Surface Texture: very fine sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 76 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.42 Min: 0.01	Max: 8.4 Min: 7.4
2	11 inches	25 inches	stratified loamy fine sand to silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.42 Min: 0.01	Max: 8.4 Min: 7.4
3	25 inches	70 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.42 Min: 0.01	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: Water

Soil Surface Texture: very fine sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 4

Soil Component Name: Holtville

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 76 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
2	11 inches	24 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
3	24 inches	35 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
4	35 inches	59 inches	loamy very fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

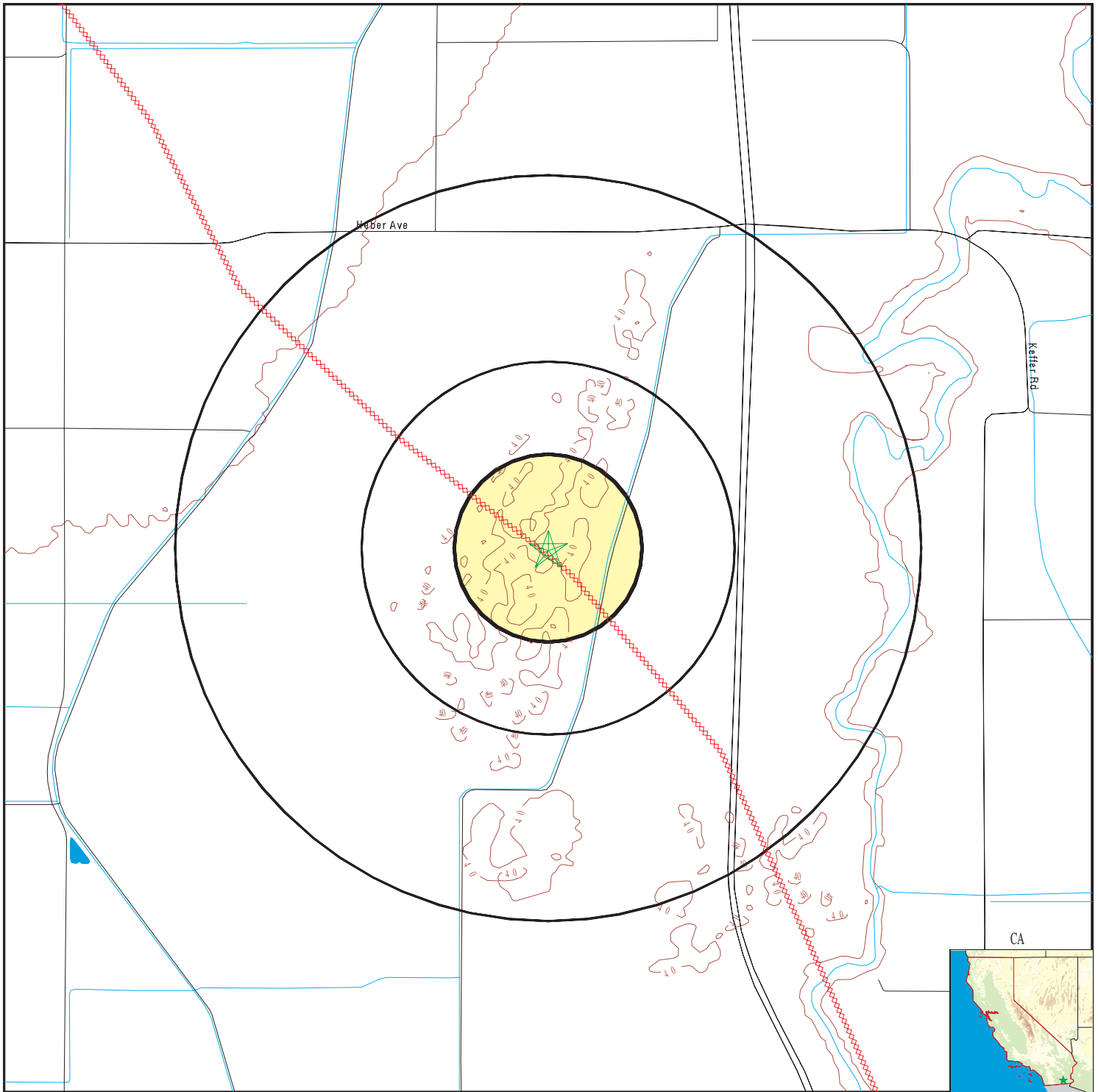
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

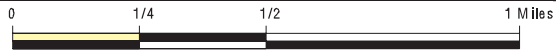
STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 2419249.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons



- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



SITE NAME: Heber Dunes SRVA
 ADDRESS: Heber Road at State Route 7
 Imperial County CA 92249
 LAT/LONG: 32.7183 / 115.3915

CLIENT: Wright Env. Services Inc.
 CONTACT: John Lynch
 INQUIRY #: 2419249.2s
 DATE: February 11, 2009 1:38 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for IMPERIAL County: 3

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for IMPERIAL COUNTY, CA

Number of sites tested: 2

<u>Area</u>	<u>Average Activity</u>	<u>% <4 pCi/L</u>	<u>% 4-20 pCi/L</u>	<u>% >20 pCi/L</u>
Living Area - 1st Floor	1.450 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database

Source: Department of Water Resources

Telephone: 916-651-9648

California Drinking Water Quality Database

Source: Department of Health Services

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations

Source: Department of Conservation

Telephone: 916-323-1779

RADON

State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX C

Interview and Research Documentation

Sources of Information

Contact or Author	Document or Organization	Date of Contact or Document	Phone Number/ Contact	Information
Environmental Data Resources, Inc.	Inquiry No. 2419249.2s Heber Dunes SRVA Heber Road at State Highway 7, Heber, California,	Feb. 11, 2009	1/800/352-0050	Regulatory State and Federal Database Radius Search, Sanborn Map Search, City Directory Search, Aerial Photographs and Topographic Maps.
County of Imperial	Building Department	Feb. 17, 2009	Desk Staff	Check for building permits/site information for property APN/address.
County of Imperial	Environmental Health Dept.	March 4, 2009	Files Clerk	Check for any tank or hazmat files for property APN/address.
San Diego State Univ. Soil Ecology and Restoration Group	Heber Dunes Vegetation and Wildlife Survey	Nov. 15, 1998	Files Clerk	Vegetation and animal habitat studies for the SVRA site.
State of California	California Geology	December 1979	California Geological Survey	Imperial Valley Earthquake 15 October, 1979.
State of California	Fault Rupture Hazard Zones in California	1994	California Geological Survey	Active fault rupture zones on Calexico map in Heber Dunes area.
State of California	Colorado Basin Regional Water Quality Control Board	Feb 17, 2009	Web site	Check for any tank or hazmat or WDR files for property APN/address.
State of California	Dept. of Toxic Substances CUPA for Imperial County	Feb. 11, 2009	Ms. Bobbie Jensen	Check for any tank or hazmat or WDR files for property APN/address.
State of California	Dept. of Water Resources	June 1974 revised 2003	Bulletin No. 118	General groundwater information for the property region.
State of California	Fault Activity Map of California and Adjacent Areas	1994	Div. of Mines and Geology	General fault information for the property region.
Victor Herrick	Heber Dunes SRVA	July 30, 2008	Staff	Short interview history of subject property.
Planert, M. and Williams, J. S.	U. S. Geological Survey, Groundwater Atlas of the U. S.; Segment 1, California and Nevada	1995	USGPO	Regional groundwater occurrence, quality and movement in the Imperial Valley region

Christopher M. Palmer

RESUME OF QUALIFICATIONS

REPRESENTATIVE EXPERIENCE

Mr. Palmer has diversified experience in hydrogeologic and engineering geologic studies in California and other States. He has performed and supervised hundreds of investigations for contaminant soil and groundwater assessment, sampling, and groundwater monitoring well design and installation, and aquifer data analysis and report preparation. Additional work includes onsite sewage wastewater absorption system testing and Phase One ESAs. Mr. Palmer is also experienced in regulatory negotiation and compliance for underground storage tank petroleum, solvent, and metals contamination, shallow soil pesticide contaminants, and development and implementation of plans for soil and groundwater site cleanup and site "closure" (no further work required).

Project experience includes assessments at military and industrial sites, RCRA RI/FS studies, onsite wastewater disposal for residential and light commercial development, municipal landfill site investigations and expansion of municipal and hazardous waste disposal sites. Mr. Palmer has provided contaminant hydrogeology instruction through university extension classes and to professional societies and government agencies, and has authored professional journal publications and the book "Principles of Contaminant Hydrogeology (1991; 1996)."

EDUCATION

California State University, Fresno, B. A. Geology, Jan. 1975.

California State University, Fresno, M. A. Geology, Dec. 1978.

Continuing Education classes in hydrogeology, chemistry, regulations, 1981-present.

CERTIFICATIONS

OSHA 29 CFR 1910.120 Hazardous Waste Training (40 hr., with 8 hr. updates).

PROFESSIONAL REGISTRATIONS

State of California Professional Geologist No. 3989; Certified Engineering Geologist No. 1262; Certified Hydrogeologist No. 246.

State of Arkansas Registered Geologist No. 320.

State of Florida Professional Geologist No. 471.

State of Pennsylvania Registered Geologist No. 892.

PROFESSIONAL SOCIETIES

Member, National Groundwater Association.

Member, Association of Engineering Geologists

Member, Groundwater Resources Association of California



Heber Dunes SRVA

Heber Road at State Route 7
Imperial County, CA 92249

Inquiry Number: 2419249.3
February 11, 2009

Certified Sanborn® Map Report

Certified Sanborn® Map Report

2/11/09

Site Name:

Heber Dunes SRVA
Heber Road at State Route 7
Imperial County, CA 92249

Client Name:

Wright Env. Services Inc.
707 E. 11th Street
Tracy, CA 95376

EDR Inquiry # 2419249.3

Contact: John Lynch



The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Wright Env. Services Inc. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Heber Dunes SRVA
Address: Heber Road at State Route 7
City, State, Zip: Imperial County, CA 92249
Cross Street:
P.O. # NA
Project: 9641-09
Certification # 3171-4DB6-AB4F



Sanborn® Library search results
Certification # 3171-4DB6-AB4F

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

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Heber Dunes SRVA

Heber Road at State Route 7
Imperial County, CA 92249

Inquiry Number: 2419249.5
February 13, 2009

The EDR Aerial Photo Decade Package

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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Please contact EDR at 1-800-352-0050
with any questions or comments.

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Date EDR Searched Historical Sources:

Aerial Photography February 13, 2009

Target Property:

Heber Road at State Route 7

Imperial County, CA 92249

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
1996	Aerial Photograph. Scale: 1"=666'	Flight Year: 1996	USGS
2002	Aerial Photograph. Scale: 1"=666'	Flight Year: 2002	USGS
2005	Aerial Photograph. Scale: 1"=484'	Flight Year: 2005	EDR



INQUIRY #: 2419249.5

YEAR: 1996

| = 666'





INQUIRY #: 2419249.5

YEAR: 2002

— = 666'





INQUIRY #: 2419249.5

YEAR: 2005

| = 484'





Heber Dunes SRVA

Heber Road at State Route 7
Imperial County, CA 92249

Inquiry Number: 2419249.4
February 11, 2009

The EDR Historical Topographic Map Report

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

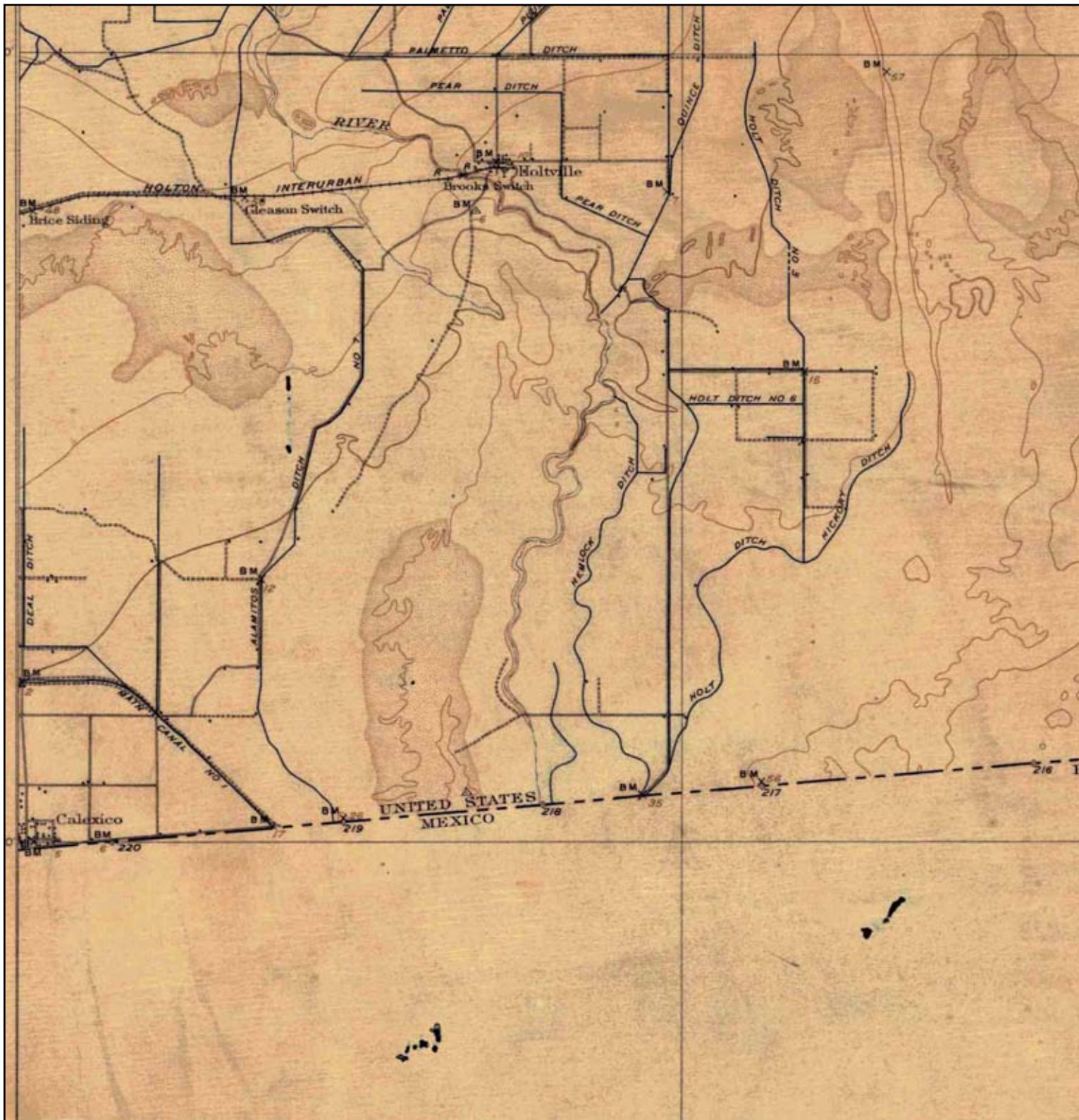
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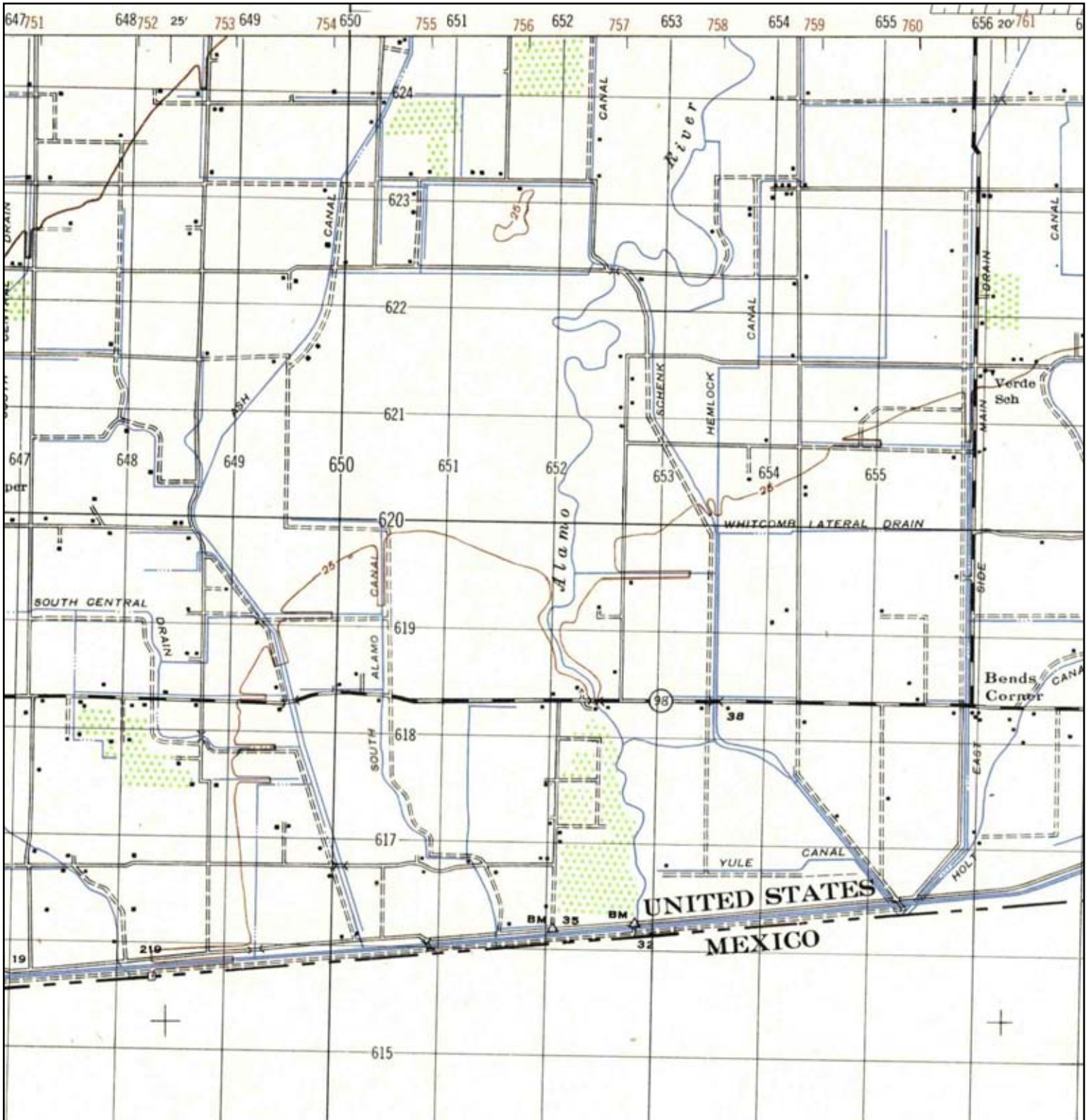
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Historical Topographic Map



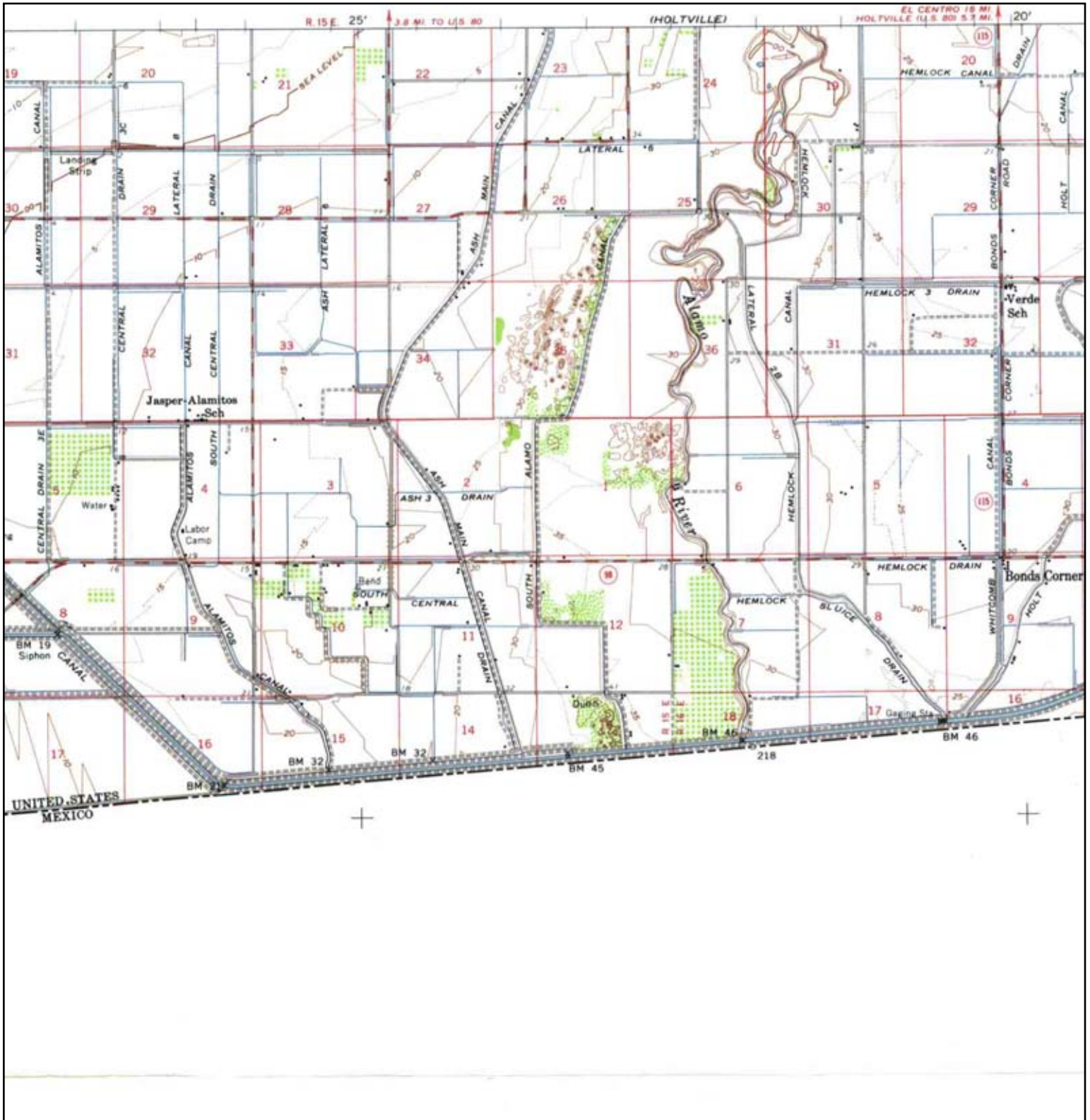
	TARGET QUAD NAME: HOLTVILLE MAP YEAR: 1907	SITE NAME: Heber Dunes SRVA ADDRESS: Heber Road at State Route 7 Imperial County, CA 92249 LAT/LONG: 32.7183 / 115.391	CLIENT: Wright Env. Services Inc. CONTACT: John Lynch INQUIRY#: 2419249.4 RESEARCH DATE: 02/11/2009
	SERIES: 30 SCALE: 1:125000		


Historical Topographic Map



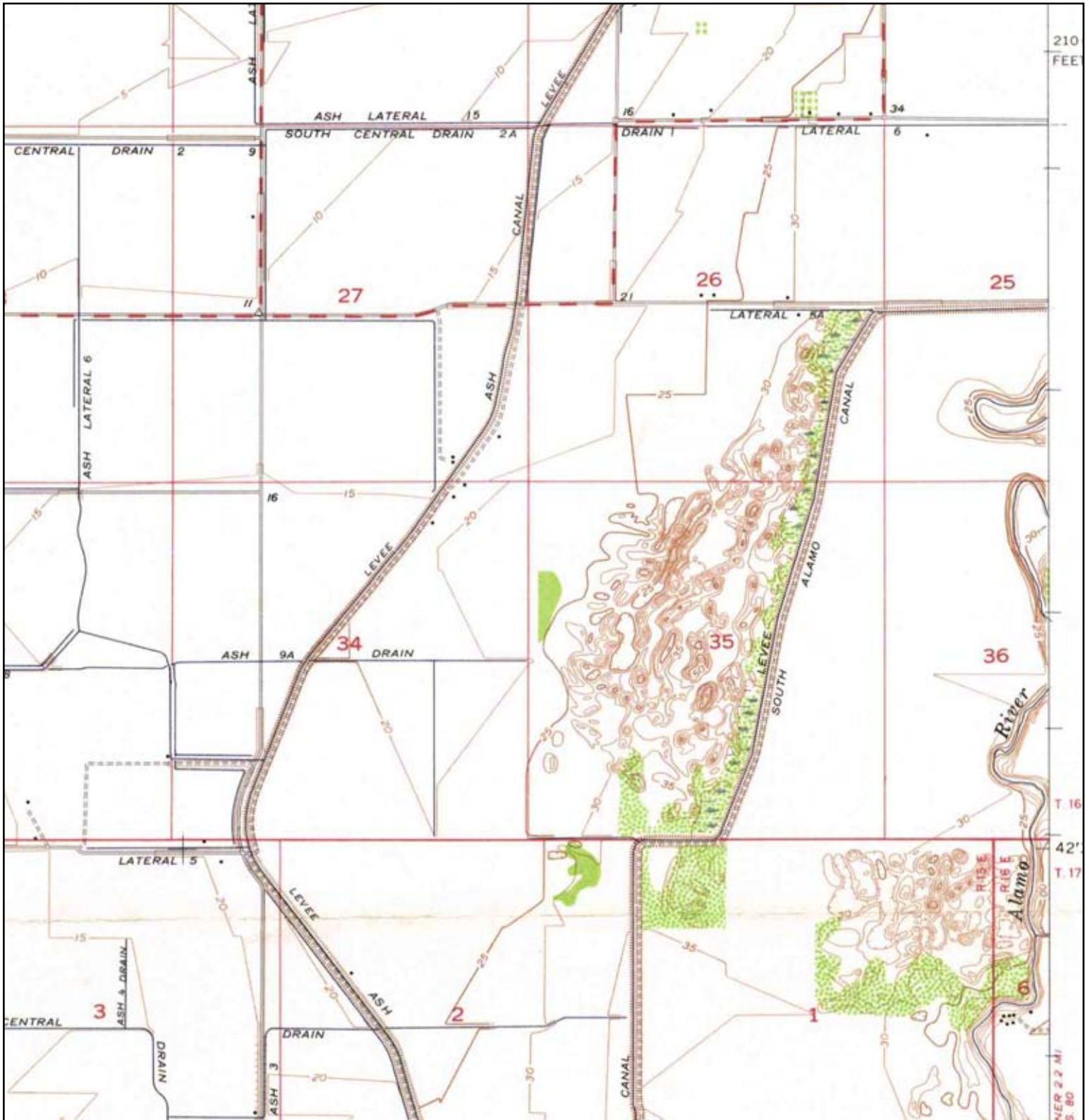
	TARGET QUAD NAME: CALEXICO MAP YEAR: 1947	SITE NAME: Heber Dunes SRVA ADDRESS: Heber Road at State Route 7 Imperial County, CA 92249 LAT/LONG: 32.7183 / 115.391	CLIENT: Wright Env. Services Inc. CONTACT: John Lynch INQUIRY#: 2419249.4 RESEARCH DATE: 02/11/2009
	SERIES: 15 SCALE: 1:50000		


Historical Topographic Map



	TARGET QUAD NAME: CALEXICO MAP YEAR: 1957	SITE NAME: Heber Dunes SRVA ADDRESS: Heber Road at State Route 7 Imperial County, CA 92249 LAT/LONG: 32.7183 / 115.391	CLIENT: Wright Env. Services Inc. CONTACT: John Lynch INQUIRY#: 2419249.4 RESEARCH DATE: 02/11/2009
	SERIES: 15 SCALE: 1:62500		

Historical Topographic Map



 N	TARGET QUAD NAME: CALEXICO MAP YEAR: 1957	SITE NAME: Heber Dunes SRVA ADDRESS: Heber Road at State Route 7 Imperial County, CA 92249 LAT/LONG: 32.7183 / 115.391	CLIENT: Wright Env. Services Inc. CONTACT: John Lynch INQUIRY#: 2419249.4 RESEARCH DATE: 02/11/2009
	SERIES: 7.5 SCALE: 1:24000		

The EDR Environmental LienSearch™ Report

**HEBER DUNES
IMPERIAL COUNTY
IMPERIAL COUNTY, CA 92249**

Project Number 02419249.7

February 19, 2009



The Standard in Environmental Risk Information

440 Wheelers Farm Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report includes results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers follows established procedures to:

- search for parcel information, legal description, and ownership based on client supplied address information;
- research indexes and title repositories;
- obtain a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument (title, parties involved, and description); and
- provide a copy of the deed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

HEBER DUNES
HEBER RD. AT STATE RTE 7
IMPERIAL COUNTY, CA 92249

RESEARCH SOURCE

Sources: Imperial County

DEED INFORMATION

Type of Deed: WD QCD Other DEED

Title is vested in: The State of California, acting by and through The Department of Parks and Recreation

Title received from: The County of Imperial

Deed Dated: July 10, 2007
Deed Recorded: December 14, 2007
Document No.: 2007-046211

LEGAL DESCRIPTION

Description: Legal attached as Exhibit "A"

Assessor's Parcel Number: 055-190-029; 055-190-037; 055-280-022; 055-280-023; 055-280-025; 055-280-029

ENVIRONMENTAL LIEN

Environmental Lien: Found Not Found

If yes:

1st Party:

2nd Party:

Dated:
Recorded:
Book:
Page:
Comments:

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found Not Found

Limitations as to the use of the property can be found in the deed attached as Exhibit "A"

EDR Environmental LienSearch™ Report

EXHIBIT A

Recorded in Official Records, Imperial County

12/14/2007
2:00 PM
IV

Dolores Provencio
County Clerk / Recorder

FA First American Title

**RECORDING REQUESTED BY:
FIRST AMERICAN TITLE**

Doc#: 2007-046211

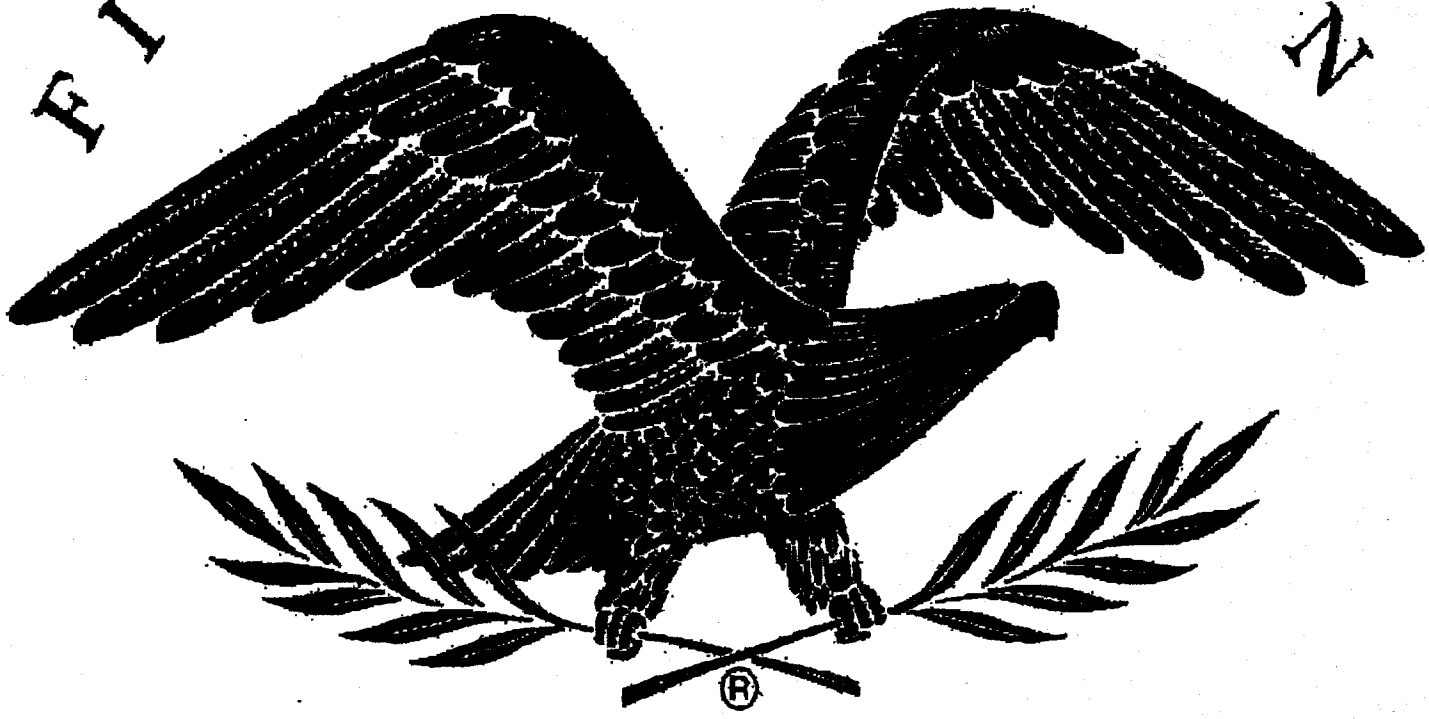
Titles:	1	Pages:	8
Fees			0.00
Taxes			0.00
Other			0.00
PAID			00.00



**WHEN RECORDED RETURN TO:
STATE OF CALIFORNIA
DEPT. OF PARKS AND RECREATION
ONE CAPITOL MALL, SUITE 500
SACRAMENTO, CA 95814**

**Exempt from recording fees
pursuant to Govt. Code 27383
and documentary transfer tax
pursuant to revenue and taxation
code section 11922
DOCUMENT TITLE: GRANT DEED**

FIRST AMERICAN



Mail Tax Statement To Return Address Above

WHEN RECORDED MAIL TO

STATE OF CALIFORNIA
Department of Parks and Recreation
Acquisition and Real Property Services Division
One Capitol Mall, Suite 500
Sacramento, CA 95814-

OFFICIAL STATE BUSINESS - EXEMPT FROM RECORDING FEES PURSUANT TO GOVT. CODE §27383 AND DOCUMENTARY TRANSFER TAX PURSUANT TO REVENUE AND TAXATION CODE SECTION 11922

Grant Deed

Agency: Department of Parks and Recreation
Project: Heber Dunes Acquisition - Heber Dunes SVRA
Parcel(s): DPR Parcel # 13362 DGS Parcel # 10473

APN(S): 55-190-29 & 37, 55-280-22,23,25 & 29, County of Imperial

COUNTY OF IMPERIAL, a political subdivision of the State of California

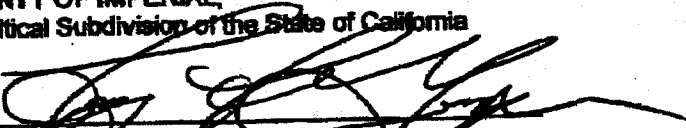
hereby GRANTS to the STATE OF CALIFORNIA, acting by and through the Department of Parks and Recreation, the following described real property situated in the State of California, County of Imperial, described as follows:

See Exhibit "A"
consisting of two (2) pages attached hereto
and by this reference made a part hereof.

The property will be managed exclusively for sustainable off-highway motor vehicle recreational purposes consistent with provisions of Chapter 1.25, Sections 5090.01 et. seq., of the Public Resources Code for the California State Parks' Off-Highway Motor Vehicle Recreation Division. The real property described in this Grant Deed along with existing and subsequent improvements, facilities and infrastructure shall be returned to the County of Imperial if the property ceases to be used as a State vehicular recreation area or is permanently closed, or changes its designated off-highway vehicle use, or is leased, rented or assigned for purposes that preclude or are inconsistent with off-highway vehicle use. If said property should revert to the County for any of the aforementioned reasons, the County will use this property exclusively for off-highway vehicle use.

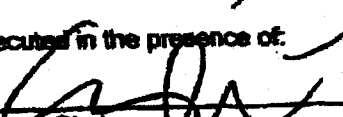
GRANTOR


COUNTY OF IMPERIAL,
a Political Subdivision of the State of California

By 
Larry L. Grogan, Chairman
Board of Supervisors
Authorized by the Board of Supervisors this
10th day of July, 2007

THE UNDERSIGNED GRANTOR DECLARES THAT
DOCUMENTARY TRANSFER TAX IS \$ 00
-- COMPUTED ON FULL VALUE OF PROPERTY CONVEYED, OR
-- COMPUTED ON FULL VALUE LESS VALUE OF LIENS
OR ENCUMBRANCES REMAINING AT TIME OF SALE,
-- UNINCORPORATED AREA
-- CITY OF _____

Executed in the presence of:


County Clerk
Board of Supervisors
County of Imperial
State of California


SYLVIA BERMUDEZ
Clerk of the Board of Supervisors

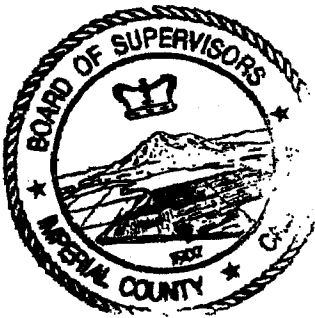
ALL PURPOSE ACKNOWLEDGEMENT

**STATE OF CALIFORNIA
BOARD OF SUPERVISORS
COUNTY OF IMPERIAL**

} **SS**

On July 10, 2007 before me, Sylvia Bermudez, Clerk of the Board of Supervisors personally appeared Larry L. Grogan personally known to me to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal:



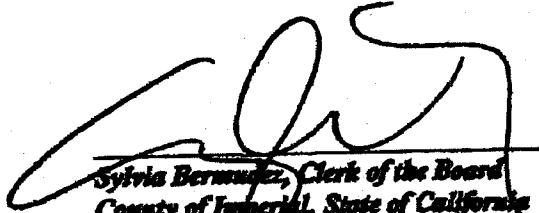

Sylvia Bermudez, Clerk of the Board
County of Imperial, State of California

EXHIBIT "A"

Legal Description

Real property in the unincorporated area of the County of Imperial, State of California, described as follows:

PARCEL 1:

EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 26, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE UNITED STATES GOVERNMENT PLAT OF RE-SURVEY APPROVED FEBRUARY 6, 1909, AND ON FILE IN THE UNITED STATES LAND OFFICE.

EXCEPTING THEREFROM THAT PORTION THEREOF LYING EAST OF THE SOUTH ALAMO CANAL AS LOCATED ACROSS SAID PROPERTY ON JANUARY 2, 1952, AS CONVEYED TO MARY DIANE MAGGIO, BY DEED DATED JANUARY 2, 1952, AND RECORDED APRIL 17, 1952, AS INSTRUMENT NO. 34, AND BOOK 838, PAGE 522 OF OFFICIAL RECORDS.

PARCEL 2:

THAT PORTION OF THE WEST HALF OF THE SOUTHEAST QUARTER OF SECTION 26 AND THAT PORTION OF LOT 2 OF SECTION 35, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE UNITED STATES GOVERNMENT PLAT OF RE-SURVEY APPROVED FEBRUARY 6, 1909, AND ON FILE IN THE UNITED STATES LAND OFFICE, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF THE WEST HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 26; THENCE SOUTH $0^{\circ}07'25''$ WEST, ALONG THE EAST LINE OF SAID WEST HALF OF SOUTHEAST QUARTER OF SECTION 26, A DISTANCE OF 203.11 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH $0^{\circ}00'25''$ WEST, ALONG SAID EAST LINE, A DISTANCE OF 2,438.79 FEET TO THE SOUTHEAST CORNER OF THE WEST HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 26, SAID POINT ALSO BEING THE NORTHEAST CORNER OF LOT 2, SECTION 35; THENCE SOUTH, ALONG THE EAST LINE OF SAID LOT 2, A DISTANCE OF 209.89 FEET TO THE SOUTHEAST CORNER THEREOF; THENCE SOUTH $89^{\circ}53'40''$ WEST, ALONG THE SOUTH LINE OF SAID LOT 2, A DISTANCE OF 953.40 FEET TO A POINT 20 FEET EAST, MEASURED AT RIGHT ANGLES, OF THE EAST LINE OF THE CONCRETE LINED DITCH AS SAID DITCH IS NOW ESTABLISHED; THENCE NORTH $19^{\circ}47'25''$ EAST, PARALLEL TO AND 20 FEET DISTANT FROM THE EAST LINE OF SAID DITCH, A DISTANCE OF 2,818.79 FEET TO THE POINT OF BEGINNING.

PARCEL 3:

LOTS 9, 10 AND 11 OF SECTION 35, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA.

EXCEPTING THEREFROM THAT PART OF LOT 9 OF SAID SECTION 35, LYING EASTERLY OF THE WESTERLY RIGHT OF WAY LINE OF THE SOUTH ALAMO CANAL.

PARCEL 4:

LOTS 12 AND 13 IN SECTION 35, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, COUNTY OF IMPERIAL, STATE OF CALIFORNIA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF LOT 12, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE EASTERLY 1504.8 FEET, MORE OR LESS, ALONG THE NORTH LINE OF SAID LOT 12 TO THE NORTHEAST CORNER OF SAID LOT 12, THENCE SOUTHERLY 2640 FEET, MORE OR LESS, ALONG THE EAST LINE OF SAID LOT 12 AND LOT 13 TO THE SOUTHEAST CORNER OF SAID LOT 13; THENCE WESTERLY 1504.08 FEET, MORE OR LESS, ALONG THE SOUTH LINE OF SAID LOT 13 TO THE SOUTHWEST CORNER OF SAID LOT 13; THENCE NORTHERLY 2640 FEET, MORE OR LESS, ALONG SAID LOT 13 AND LOT 12 TO THE NORTHWEST CORNER OF SAID LOT 12 AND THE TRUE POINT OF BEGINNING.

PARCEL 5:

THAT PORTION OF LOT 8 OF SECTION 35, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE RE-SURVEY PLAT THEREOF BY SURVEYOR GENERAL'S OFFICE MAY 2, 1913, DESCRIBED AS FOLLOWS:

LYING WESTERLY OF THE WESTERLY RIGHT OF WAY LINE OF THE SOUTH ALAMO CANAL AS SHOWN ON RECORD OF SURVEY MAPS IN BOOK 2, AT PAGE 12 OF RECORD SURVEYS ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF IMPERIAL COUNTY.

PARCEL 6:

A PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 35, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE RE-SURVEY PLAT THEREOF BY SURVEYOR GENERAL'S OFFICE MAY 2, 1913, DESCRIBED AS FOLLOWS:

THAT PORTION OF SAID SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 35, LYING WESTERLY OF THE WESTERLY RIGHT OF WAY LINE OF THE SOUTH ALAMO CANAL. SAID PARCEL CONTAINING 31.3 ACRES, MORE OR LESS, AS SHOWN ON RECORD OF SURVEY MAPS IN BOOK 2, AT PAGE 12 OF RECORD SURVEYS ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF IMPERIAL COUNTY.

PARCEL 7:

A PORTION OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE RE-SURVEY PLAT THEREOF BY SURVEYOR GENERAL'S OFFICE MAY 2, 1913, DESCRIBED AS FOLLOWS:

THAT PORTION OF SAID SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 35, LYING NORTHERLY AND WESTERLY OF THE NORTHERLY AND WESTERLY RIGHT OF WAY LINE OF THE SOUTH ALAMO CANAL. SAID PARCEL CONTAINING 13.8 ACRES, MORE OR LESS, AS SHOWN ON RECORD OF SURVEY MAPS IN BOOK 2, AT PAGE 12 OF RECORD SURVEYS ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF IMPERIAL COUNTY.

PARCEL 8:

A PORTION OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 16 SOUTH, RANGE 15 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE RE-SURVEY PLAT THEREOF BY SURVEYOR GENERAL'S OFFICE MAY 2, 1913, DESCRIBED AS FOLLOWS:

THAT PORTION OF SAID NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 35, LYING WESTERLY OF THE WESTERLY RIGHT OF WAY LINE OF THE SOUTH ALAMO CANAL. SAID PARCEL CONTAINING 13.8 ACRES, MORE OR LESS, AS SHOWN ON RECORD OF SURVEY MAPS IN BOOK 2, AT PAGE 12 OF RECORD SURVEYS ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF IMPERIAL COUNTY.

//////////////////////////////////////END OF DESCRIPTION//////////////////////////////////////

CERTIFICATE OF ACCEPTANCE

Agency Department of Parks and Recreation
Project Heber Dunes SVRA
Heber Dunes Acquisition
Agency Parcel No. 13362
DGS Parcel No. 10473
APN 55-190-29 & 37
55-280-22, 23, 25, & 29
County of Imperial

This is to certify that, pursuant to Sections 11005, 15853 and 27281 of the California Government Code, the interest in real property conveyed by the Grant Deed dated July 10, 2007, from the COUNTY OF IMPERIAL, a political subdivision of the State of California, to the STATE OF CALIFORNIA, acting by and through the Department of Parks and Recreation is hereby accepted by the undersigned officer on behalf of the State Public Works Board pursuant to authority conferred by resolution of said Board duly adopted September 14, 2007, and the Grantee consents to the recordation thereof by its duly authorized officer.

Note to Recorder: If this certificate is for a correction deed, all corrections and/or changes to the previously recorded deed must be reviewed and accepted by the State prior to recording a correction deed. All correction deeds require a new Certificate of Acceptance dated subsequent to recordation of the original deed or the most recent correction deed, if any.

Accepted **STATE OF CALIFORNIA**
State Public Works Board

By: 
JERRY LEONG
Assistant Administrative Secretary

Dated: 9/17/07

Approved **DEPARTMENT OF PARKS AND RECREATION**

By: 
STEPHEN R. LEHMAN, DEPUTY DIRECTOR
Acquisition and Development

Dated: 7/27/07

Approved **DEPARTMENT OF GENERAL SERVICES**

By: 
JAMES S. MARTIN, Assistant Chief
Real Estate Services Section

Dated: 9-14-07

Approved **DEPARTMENT OF FINANCE**

By: 
MICHAEL C. GENEST, Director

Dated: 9/26/07

APPENDIX C

Interview and Research Documentation
County of Imperial File for 1997 Hazardous Materials Dumping
San Diego State University Soil Ecology and Restoration Group

ASTM
X3. USER QUESTIONNAIRE

INTRODUCTION

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (The Brownfields Amendments), the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

RESPONSES FOR HEBER DUNES STATE VEHICULAR RECREATION AREA

- (1.) Environmental cleanup liens that are files or recorded against the site (40CFR 312.25). *Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?*

In reviewing my information and to the best of my knowledge, I am not aware of any recorded or unrecorded environmental cleanup liens against the property.

- (2.) Activity and land use limitations (AULs) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26). *Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?*

I am not aware of any recorded or unrecorded land use limitations on the property.

- (3.) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28). *As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?*

I have no specialized knowledge or experience and I am not involved in the same line of business as the former occupants.

- (4.) Relationship of the purchase price to the fair market value of the property (40 CFR 312.30). *Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?*

The property was not purchased, but given to the State by Imperial County to run as an SVRA. The only restriction was that if the property ceases to be used as a SVRA, or is closed, or changes its designated off-highway vehicle use, or is leased, rented or assigned, the property will revert back to the County, to be used exclusively for off-highway vehicle use.

- (5.) (Commonly known or reasonably ascertainable information about the property (40 CFR 312.30). *Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,*
- (a) *Do you know the past uses of the property?*
 - (b) *Do you know of specific chemicals that are present or once were present at the property?*
 - (c) *Do you know of any spills or other chemical releases that have taken place at the property?*
 - (d) *Do you know of any environmental cleanups that have taken place at the property?*

In reviewing my information and to the best of my knowledge, I am not aware of any chemical uses, spills, releases, or cleanup activities on the property.

- (6.) The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31). *As the user of the ESA, based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property?*

In reviewing my information I am not aware of any indicators that would suggest the presence or likely presence of contamination of the property.

COUNTY OF IMPERIAL

Imperial County Public Health Department
 Division of Environmental Health
 Main Street Professional Building
 797 Main Street, Suite B
 El Centro, CA 92243
 TEL: (760) 336-8530
 FAX: (760) 352-1309

DEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEH

FAX TRANSMITTAL

DEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEHSDEH

DATE:	3/10/09		
TO:	John Lynch		
BUSINESS/AGENCY:	Wright Environmental Services		
PHONE NUMBER:	(209) 603-3394		
FAX NUMBER:	(209) 832-5152		
FROM:	Environmental Health		
SUBJECT:	File Search: Heber Dunes		
NUMBER OF PAGES: (INCLUDING COVER SHEET)	20		
CONFIRMATION REQUESTED	<input type="checkbox"/>	YES	<input type="checkbox"/> NO
<p>This fax contains legally privileged and confidential information intended only for the individual or entity named within the message. If the reader of this message is not the intended recipient, or the agent responsible to deliver it to the intended recipient, you are hereby notified that any review, dissemination or copying of this communication is prohibited. If this communication was received in error, please notify us by faxing back and delete the original copy sent.</p>			



COUNTY OF IMPERIAL
PUBLIC HEALTH DEPARTMENT

DIVISION OF ENVIRONMENTAL HEALTH
797 Main Street, Ste. B • El Centro, CA 92243
Phone (760) 336-8530 • FAX (760) 352-1309

ROBIN HODGKIN, M.P.A.
Director

STEPHEN W. MUNDAY, M.D., M.S.
Health Officer

March 6, 2009

Wright Environmental Services, Inc.
John Lynch
2395 E. Pescadero Ave.
Tracy, CA 95304

Subject: Request for File Review of , Sate Recreational Vehicle Area, 1610 Heber Dunes Rd.,
Heber, CA 92249
APN: 055-190-29, 055-190-37, 055-280-22, 055-280-23, 055-280-25, and 055-250-29

Dear Mr. Lynch,

This Division has reviewed its files for information regarding hazardous materials stored at or near the property referenced.

This review indicates that there was a hazardous material spill on or around the area listed above. The Division files include information about reported hazardous materials released. Division files also include information about reported hazardous material inventories (Chapter 6.95, California Health and Safety Code).

Our file search is not to be considered conclusive evidence that a problem does not exist with regard to hazardous discharge or spills.

If you would like information regarding underground storage tanks it can be obtained from the Imperial County Planning/Building Department at (760) 482-4236.

Please note that as of January 01, 2005, we are no longer the Law Enforcement Agency for Toxic Spills. If you need further information you will need to contact the Department of Toxic Substance Control at the Calexico Field Office, 301 Heber Ave, Calexico, CA 92231. Phone Number (760) 768-7107.

If you need further assistance or have any questions regarding this file search, please do not hesitate to contact this Division at (760) 336-8530.

Sincerely,


Lily Ruvalcaba
Environmental Health Division



COUNTY OF IMPERIAL
PUBLIC HEALTH DEPARTMENT

DIVISION OF ENVIRONMENTAL HEALTH
797 Main Street, Ste. B • El Centro, CA 92243
Phone (760) 336-8530 • FAX (760) 352-1309

ROBIN HODGKIN, M.P.A.
Director

STEPHEN W. MUNDAY, M.D., M.S.
Health Officer

March 10, 2009

Wright Environmental Services, Inc.
John Lynch
2395 E. Pescadero Ave.
Tracy, CA 95304
Phone (209) 603-3394
Fax (209) 832-5152

Billable Fees for Hazardous Material File Search Copies

Subject properties: State Recreational Vehicle Area, 1610 Heber Dunes Rd., Heber, CA 92249
APN: 055-190-29, 055-190-37, 055-280-22, 055-280-23, 055-280-25, and 055-250-29

16 pages x ¢.09 per copy = \$1.44

If you have any questions please feel free to call.

Lily Ruvalcaba
Sincerely,

Lily Ruvalcaba

RIGHT ENVIRONMENTAL SERVICES, INC.

County of Imperial

Date	Type	Reference
3/9/2009	Bill	Heber Dunes

Original Amt.	Balance Due	Discount	Payment
1.44	1.44		1.44
		Check Amount	1.44

3/9/2009

Service First/Checkin 9641

1.44

DELUXE BUSINESS FORMS 1-800-328-0304 www.deluxeforms.com

IMPERIAL COUNTY
 ENVIROMENTAL
 HEALTH SERVICES
 797 MAIN ST SUITE-B
 EL CENTRO, CA 92243
 760-336-8530

DATE 03/10/2009 TUE TIME 12:15

CHECK #	#2508
PBAL	\$0.00
HAZDS MATERIALS	\$1.44
NONADD #	6637
NONADD #	30909
CHECKS PAID	\$1.44
TOTAL	\$1.44
CHECK	\$1.44
CLERK 1	003902 00000

FROM IMPERIAL CO. SHERIFF'S OFFICE

(THU) 11. 6' 97 17:26/ST, 16:40/ NO, 406019/11 P.

K/S

IMPERIAL COUNTY SHERIFF'S OFFICE
BOATING SAFETY & ENFORCEMENT
UNDERWATER SEARCH & RECOVERY
328 APPLESTILL ROAD - P.O. BOX 1040
EL CENTRO, CALIFORNIA 92244 - 1040

FAX TRANSMISSION COVER SHEET

OREN R. FOX
SHERIFF-CORONER-MARSHAL

OFFICE # (619) 339-6311
FAX # (619) 339-6348

DATE: 11.05.97 NUMBER OF PAGES: FIVE
(including cover sheet)

TIME SENT: 1500 HRS.

TO: (NAME): ALLEN SMITH / ROGER VINCE

OFFICE, UNIT OR ORGANIZATION: ENVIRONMENTAL HEALTH SERVICES

LOCATION: 939 MAIN STREET, EL CENTRO

FAX NUMBER: 352-1309 PHONE NUMBER: 339-4203

SUBJECT: CR# 97110055 (PAINT DUMPING)

FROM: (NAME): TONY L. ROUMOTAS, SR., CMDE.

FAX NUMBER: 339-6348 PHONE NUMBER: 339-6359

LOCATION: 328 APPLESTILL RD., EL CENTRO, CA

COMMENTS OR SPECIAL INSTRUCTIONS: _____

IMPORTANT/CONFIDENTIAL: This communication is intended only for the individual or entity to which it is addressed. This message contains information from the County of Imperial, Sheriff-Coroner's Office, which may be privileged, confidential and exempt from disclosure under applicable law. If the reader of this communication is not the intended recipient or the employee, or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copy of this communication is strictly prohibited.

Vertical text on the right margin, possibly a date stamp or routing mark.

FROM IMPERIAL CO. SHERIFF'S OFFICE

(THU) 11. 0' 97 17:27/ST, 16:40/ NO. 406017711 2
97110055

11/02/97
22:58

Imperial County Sheriff's Office
Deputy Report

Page: 355
1

Incident Number: 9711-0055
Nature: ILLEGAL DUMPING

Case Numbers:

Addr: HEBER SANDS DUNES-WSIDE Area:
City: Heber St: CA Zip: 92249 Contact:

Complainant: 65166 Alert Codes:

Lst: MIRANDA Est: FRANK Mid: R
DOB: **/**/** SSN: - - Adr: 1104 KEEFER
Rac: Sx: Tel: (760)356-4722 Cty: Heber St: CA Zip: 92249

Reported: OTHR All Other Reportable Offe
Observed:
Offense
Codes: OTHR All Other Reportable Offe

Circumstances:

Responding Officers: Watson, R. 548
Champagne, D. 599
Hall, W. 582

Respsnl Officer: Watson, R. Agency: ALSO
Received By: Flores, N. Last RadLog: 18:43:49 11/02/97 CMPLT
How Received: T Telephone Clearance: NR No Report Taken

When Reported: 16:47:28 11/02/97 Disposition: INA Disp Date: 11/02/97

Occurrd between: 16:47:28 11/02/97 Judicial Sts:
and: 16:47:28 11/02/97 Misc Entry:

Modus Operandi:
Factor Description Method

INVOLVEMENTS:
Date Description Relationship

“CONFIDENTIAL”
FOR COURT PURPOSES ONLY”

-Rauhotas

FROM IMPERIAL CO. SHERIFF'S OFFICE

(THU) 11. 0 97 17:27/ST. 16:40/ NO. 406019 / (11 P. 3

9711005.

11/02/97
22:58

Imperial County Sheriff's Office
Deputy Report

Page: 35

Imperial County Sheriff's Department
Investigative Report

Crime Report: 9711-0055

Deputy R. Watson #548

Crime Classification:

374.8 (b) PC. Hazardous Material / Illegal Dumping

Synopsis:

On 11/2/97, at approximately 1652 hours, I, Deputy Watson, was dispatched to the vicinity of Heber Beach in reference to an illegal dumping of possible hazardous materials.

Victim(s):

state of California
County Of Imperial

Suspect(s):

Unknown

Witnesses:

1. Deputy R. Watson
Imperial County Sheriff's Office
328 Applestill road, El Centro, Ca.
339-6311
2. Deputy D. Champagne - Scientific Investigations
Imperial County Sheriff's Office
328 Applestill road, El Centro, Ca.
339-6349
3. POIRIEZ, Brad
Imperial County Air Pollution
150 S. 9th street, El Centro, Ca.
339-4606
4. SEAMEN, Joe (Fireman / Captain - Investigator)
Imperial County Fire Department
2414 La Brucherie road
Imperial, Ca.
355-1164
5. BELTRAN, Albert (Fireman)
Imperial County Fire Department
2414 La Brucherie road,
Imperial, Ca.
355-1164
6. SMITH, Allan (Environmental Task Force)

**"CONFIDENTIAL"
FOR COURT PURPOSES ONLY**

FROM IMPERIAL CO. SHERIFF'S OFFICE

(THU) 11, 6' 97 17:27/ST, 16:40/ NO, 406014/11 P, 4

97110056

11/02/97
22:50Imperial County Sheriff's Office
Deputy Report

Page: 35!

356-4312
Unknown address

7. MIRANDA, Frank 11/10/53 (R/P)
1104 Keffer road, rural Holtville, Ca.
256-4722

Evidence: (Scene Photographs taken and evidence collected by Deputy Champagne).

1. Tire impressions photographed; front tires appearing approx. 8" in width with four grooves. Rear tires different in visual pattern, approx. 10" in width, with Z-shaped knobby tire patterns.
2. (1) Shoe impression photographed; approx. 13" work boot impression consistent with a Chippewa brand boot, the impression entering and leaving the dumping area.
3. (1) barefoot pattern impression near the dumping site. The impression was consistent with a small person or a child.
4. Photographs of the scene to include; plastic and metal containers containing liquid substance in labelled containers, such as; paint, epoxy reducers, activators and lacquers. Adjacent to the containers unknown liquid substances from the containers were present on the ground.
5. (2) cans CORCHEM CN-511-A Activator, (1) Qt. containers and (1) can CORCHEM CN-401-A Activator, (1) Pint container collected by Deputy Champagne for fingerprinting.

Property:

1. Approx. (30) five gallon containers contain various paints.
2. Approximately (100) one gallon containers containing various paints, reducers, activators and lacquers.
3. Approx. (30) quart container with reducers.

Vehicles:

Unknown

Narrative:

On 11/2/97, at approximately 1652 hours, I, Deputy Watson, was dispatched to meet with R/P, Frank MIRANDA, at his residence, located at 1104 Keffer road. Dispatch advised that Mr. MIRANDA would direct this deputy to the vicinity where he located numerous containers of possibly illegally dumped paints.

Arriving at the location, I met with Mr. MIRANDA. I transported MIRANDA to the eastside of Heber Beach along the Alamo cement lined

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FROM IMPERIAL CO. SHERIFF'S OFFICE

(THU) 11. 6 '97 17:28/ST. 16:40/ NO. 406019331 P. 5

9711005

11/02/97
22:58

Imperial County Sheriff's Office
Deputy Report

Page: 35

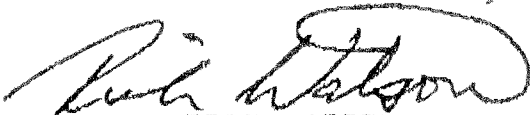
canal, approximately seven tenths of a mile south of Heber road.

Arriving at the scene MIRANDA showed this deputy a pile of five gallon container, along with numerous one gallon and quarts container. (refer to the property list). The container were illegally dumped near the east tree line adjacent to Heber Beach. Both Mr. MIRANDA and I could smell a strong odor of what appeared consistent with paint fumes lingering in the air. I transported Mr. MIRANDA home and request for advised dispatch to respond County Fire, an EPA representative and the Sheriff's Office Identification unit. Dispatch advised she was in the process of dispatching the agencies.

I advised dispatch that I would meet the responding agencies on Heber road adjacent to Heber Beach. Brad POIREZ arrived and identified himself as an employee of the Imperial County Air Pollution Control. POIREZ and I then waited the arrival of County Fire personnel, an EPA representative and Deputy Champange. Firemen BELTRAN and SEAMEN arrived at are location. BELTRAN was in telephone contact with EPA Agent Al SMITH. BELTRAN indicated that they would evaluate the scene and determine if EPA Agent SMITH was needed. The units then proceeded to the scene. Fireman BELTRAN and Fireman SEAMAN evaluated the pile of container indicating that the containers were of paints, activators, reducers and lacquers. Fireman BELTRAN related that the materials were considered hazardous material and liquid substances from the various container were spilled onto the ground. Fireman BELTRAN notified EPA Agent SMITH once more via telephone. BELTRAN indicated that SMITH would evaluate the scene during the AM hours. Air Pollution Control representative POIREZ advised that he would direct EPA Agent to the scene during the AM hours.

Scientific Investigator Champange collected three canisters; (2) CORCHEM #CN-151 ACTIVATOR (1) Qt. and (1) CORCHEM CN-401-A (1) Pint from the illegal dumped pile of materials. CHAMPANGE collected the three canisters to subsequently be examined for fingerprints. (Refer to evidence).

Case referred to the Environmental Protection Agency.



Responsible LEO:

11/3/97

Approved by:



Date

"CONFIDENTIAL"
FOR COURT PURPOSES ONLY

NOV-02-97 SUN 09:14 PM IMPERIAL CO FIRE DEPT # 6192326104

P.03

REMARKS

Imperial County Fire Dept.

For Incident: 97250935 Exposure: 00 DATE: 11/02/97 TIME: 17:42

ON NOVEMBER 2, 1997 AT APPROXIMATELY 1742 HOURS ENGINE 2829 WAS DISPATCHED TO HEBER ROAD AND HEBER BEACH TO AN ILLEGAL DISPOSAL PAINT DUMP. UPON ARRIVAL WE MET WITH S.O. DEPUTY RICK WATSON HE STATED THAT SOMEONE HAD DUMP SOME HOUSE PAINT. WE FURTHER INVESTIGATED THE DUMP SCENE, WE FOUND APPROXIMATELY 30-5 GALLONS BUCKETS, 80-1 GALLONS CANS, AND NUMEROUS PINT AND QUART SIZE CANS OF WATER AND OIL BASE LATEX PAINTS. THERE WERE ALSO PAINT THINNERS AND REDUCERS. WE ADVISED OUR DISPATCHED TO NOTIFIED ALLEN SMITH OF COUNTY ENVIRONMENTAL HEALTH OF THE SITUATION. S.O. DEPUTY CHAMPANE TOOK PHOTOGRAPHS AND EVIDENCE FROM THE SCENE. THE SCENE WAS SECURE AND WE RETURNED TO HEADQUARTERS.

S.O. CR # 97110055

Page 1

VEHICLE INFORMATION

Imperial County Fire Dept.

ID	INCIDENT NO.	EXP. NO.	MO	DAY	YEAR	TIME
3-025	95250935	00	11	02	97	17:42

UNDR	ID	TYPE	DESCRIPTION		
29	2829	2029	1987 E-ONE 1000 PUMPER		
CTION TAKEN	2	RUN TIME	PUMPING TIME	RUN MILES	RUN COST
		01:14	00:00	20	68.00

PERSONNEL INFORMATION

PERSONNEL INFORMATION

ID	NAME	JOB	TIME	COST
2910	JOSE SEAMAN	FIRE CAPTAIN	01:14	46.00
2924	ALBERT BELTRAN	FIRE FIGHTER II	01:14	46.00

NOV-02-97 SUN 02:13 PM IMPERIAL CO. FIRE DEPT # 0123526104

P.01

STATE OF CALIFORNIA FIRE INCIDENT REPORT

SECTION A
FDID 13-025
CHANGE DELETE

Imperial County Fire Dept.
FIRE DEPARTMENT
Station 2 STATION

C	F	I	R	S	I
YEAR 97	INCIDENT NUMBER 97250935	EXPOSURE 00			
MULTI-AGENCY INCIDENT NUMBER :	AGENCY YEAR	INCIDENT			

DATE 11/02/97	WEEKDAY 1	DISPATCH 17:42	ARRIVAL 17:55	END TIME 18:56	ADDITIONAL DAYS 0	FIRST IN 2829	DISTRICT HBR
------------------	--------------	-------------------	------------------	-------------------	----------------------	------------------	-----------------

SITUATION(S) FOUND
49 Hazardous Condition, Standby ILLEGAL PAINT DUMP
AUTOMATIC AID
9 Auto/Mutual Aid Unclassified
WEATHER
1 Clear

METHOD OF ALARM
1 Telephone Direct to Fire Dept
PROPERTY MANAGEMENT
1 Private Tax-Paying Prop

TEMPERATURE
89F

ADDRESS
HEBER ROAD AND HEBER SAND DUNES

APARTMENT 00000	ZIP CODE 92249-0000	CENSUS TRACT 0000.00	FIRE HAZARD SEVERITY ZONE
--------------------	------------------------	-------------------------	---------------------------

PERSONNEL RESPONDED : CAREER 2	VOLUNTEER 0	NUMBER APPARATUS RESPONDED :	ENGINE 1	TRUCK 0	RESCUE 0	OTHER 0
-----------------------------------	----------------	------------------------------	-------------	------------	-------------	------------

INVOLVEMENT CODE	NAME (LAST, FIRST, M.I.)	PHONE
------------------	--------------------------	-------

ADDRESS	STATE	ZIP
---------	-------	-----

INVOLVEMENT CODE	NAME (LAST, FIRST, M.I.)	PHONE
------------------	--------------------------	-------

ADDRESS	STATE	ZIP
---------	-------	-----

GENERAL PROPERTY USE 93 Wild Land OCCUPIED AT TIME OF INCIDENT	SPECIFIC PROPERTY USE 931 Open Land, Field STRUCTURE TYPE	BUILDING CODE OCCUPANCY TYPE STRUCTURE STATUS
--	---	--

IF HOSTILE PROPERTY INVOLVED IN IGNITION	MOBILE PROPERTY TYPE 98 Mobile Property Type N/A MODEL	VEHICLE LICENSE	STATE	YEAR
	VEHICLE IDENTIFICATION NUMBER	MAKE	I.C.C./D.O.T. PERMIT	
		DRIVER'S LICENSE	STATE	

COMPLETE FOR ALL FIRES

SECTION B

ACTION(S) TAKEN	FIRE ORIGIN AREA	FIRE ORIGIN LEVEL	FORM OF HEAT	IGNITION FACTOR	HORIZONTAL DISTANCE
-----------------	------------------	-------------------	--------------	-----------------	---------------------

SEX	AGE	SEX	AGE	METHOD OF EXTINGUISHMENT	TYPE OF MATERIAL IGNITED	FORM OF MATERIAL IGNITED
-----	-----	-----	-----	--------------------------	--------------------------	--------------------------

CONTRIBUTING FACTOR(S)

ESTIMATED PROPERTY LOSS \$	ESTIMATED CONTENTS LOSS \$	FUEL MODEL	ACRES BURNED
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IF EQUIPMENT INVOLVED	EQUIPMENT TYPE	YEAR	MAKE	MODEL	SERIAL NUMBER
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NOV-02-97 SUN 09:14 PM IMPERIAL CO FIRE DEPT # 2193526104

P.02

FOID 13-025	STATION 2	YEAR 97	INCIDENT NUMBER 97250935	EXPOSURE 00	DATE 11/02/97	DISPATCH TIME 17:42
SECTION C COMPLETE FOR STRUCTURE FIRE						
CONSTRUCTION TYPE	ROOF COVERING	STORIES	EXTENT OF FLAME DAMAGE	EXTENT OF SMOKE DAMAGE		
TYPE OF MATERIAL GENERATING MOST SMOKE		AVENUE OF SMOKE TRAVEL		FORM OF MATERIAL GENERATING MOST SMOKE		
DETECTION SYSTEM : TYPE	POWER SUPPLY	PERFORMED		REASON FOR FAILURE		
EXTINGUISHING SYSTEM : TYPE	PERFORMED	REASON FOR FAILURE	SPRINKLER HEAD(S) TYPE	HEAD(S) ACTIVATED		
SECTION D COMPLETE FOR ANY FIRE CASUALTY						
FIRE-SERVICE CASUALTY : INJURIES		FATALITIES	NON-FIRE-SERVICE FIRE CASUALTY : INJURIES		FATALITIES	
0		0	0		0	
SECTION E COMPLETE FOR E. M. S.						
HIGHEST LEVEL OF FIRE-SERVICE CARE CAPABLE OF BEING PROVIDED ON SCENE			HIGHEST LEVEL OF FIRE-SERVICE CARE PROVIDED ON SCENE			
HIGHEST LEVEL OF OTHER CARE CAPABLE OF BEING PROVIDED ON SCENE			HIGHEST LEVEL OF OTHER CARE PROVIDED ON SCENE			
NUMBER OF PATIENTS						
E.M.S. TYPES OF SITUATIONS FOUND						
NUMBER OF PATIENTS TRANSPORTED BY :		FIRE DEPARTMENT	PRIVATE AMBULANCE	CORNER	OTHER	
SECTION F COMPLETE FOR HAZ MAT						
OES CONTROL NO.		HAZ MAT RELEASE AREA		HAZ MAT RELEASE LEVEL		
RELEASE FACTORS						
CONTRIBUTING FACTOR(S)						
ESTIMATED CHEMICALS RELEASED		EQUIPMENT TYPE INVOLVED		INCIDENT DISPOSITION		
HAZMAT ACTION(S) TAKEN						
HAZMAT ID SOURCES, PERSONNEL :		HAZMAT ID SOURCES, REFERENCE :		FIRE SERVICE HAZMAT CASUALTY - INJURED:		
FATALS:		NON-FIRE-SERVICE HAZMAT CASUALTY - INJURED:		FATALITIES:		
SECTION G OTHER ACTIONS TAKEN AND SPECIAL STUDIES						
OTHER ACTION(S) TAKEN						
7A Investigate						
SPECIAL STUDIES : LOCAL						
1a	1b	1c	1d			
2a	2b	2c	2d			
3a	3b	3c	3d			
4a	4b	4c	4d			
SPECIAL STUDIES : STATEWIDE						
5a	5b	5c	5d			
6a	6b	6c	6d			

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-99)
Please print or type. Form designed for use on alpha (12-pit) paper.

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA CALL 1-800-852-7550.

GENERATOR

FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address		311549		96731549	
IMPERIAL CO. ENV. HEALTH MSC PO BOX 806, SACRAMENTO, CA 95812					
4. Generator's Phone ()	5. Transporter 1 Company Name	6. US EPA ID Number			
(916) 323-2600	CONSOLIDATED WASTE IND.	CAE98394034			
7. Transporter 2 Company Name		8. US EPA ID Number			
9. Designated Facility Name and Site Address		10. US EPA ID Number			
CROSBY AND OVERTON 1620 WEST 16TH STREET LONG BEACH, CA 90803		CA7028403			
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers	13. Total Quantity	14. Unit Wt/Vol	15. Waste Number
a. WASTE PAINT RELATED MATERIAL, 3. UN 1263, PG III (D001.COMMODITY PACK)		No. Type			
		0014 C F 0156 010 P			
b. NON RCRA HAZARDOUS WASTE SOLID (SPILL CLEANUP)		0102 Dm 0060 010 P			
c.					
d.					
15. Special Handling Instructions and Additional Information		A-10574 B-10575			
WEAR APPROPRIATE SAFETY EQUIPMENT AT ALL TIMES. EMERGENCY CONTACT: CMI/SCOTT SOLEN (909)625-6645 FAX: (97-1)-111-1077 / PHONE: 705500 / INVOICE # 001-0603028					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.					
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name		Signature	Month	Day	Year
Jeff Lamoure		<i>[Signature]</i>	11	07	97
17. Transporter 1 Acknowledgment of Receipt of Materials		Signature	Month	Day	Year
Printed/Typed Name		<i>[Signature]</i>	11	07	97
EDWARD Calderon					
18. Transporter 2 Acknowledgment of Receipt of Materials		Signature	Month	Day	Year
Printed/Typed Name					
19. Discrepancy Indication Space					
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name		Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

Environmental Services

Pursuant to Section 56264.124, Appendix IX, Restriction, Notification & Certification Requirements
NON RCRA LAND DISPOSAL RESTRICTION NOTIFICATION

Generator Name Imperial County Environmental Health
Phone: 916-323-3600 EPA ID# CAS111111013
Manifest 916731549 Profile # 10574, 10575

The waste(s) identified on the above referenced manifest and bearing the California waste numbers identified below is subject to the Land Disposal restrictions of CCR, Title 22, Chapter 13, Section 66263.7(a)

Is this waste Non-Hazardous? If yes, complete Section C. Yes No

A. WASTE IDENTIFICATION California Waste Numbers 214, 352
Check the appropriate boxes.

- Non-RCRA metal-containing aqueous waste identified in 22 CCR 66262.107(a).
 - PCB waste identified in 22 CCR 66262.110.
 - Non-RCRA metal-containing solid waste identified in 22 CCR 66262.106(a) (3). Prohibition effective date 1/1/95.
 - Non-RCRA aqueous and liquid waste containing any organic compound identified by EPA Test Methods 3030, 3140, 3150, 3240 and/or 3270 identified in 22 CCR 66262.112. Prohibition effective date 1/1/95.
 - Non-RCRA solid waste containing any organic compound measured by Methods 3030, 3140, 3150, 3240 and/or 3270 identified in 22 CCR 66262.113. Prohibition effective date 1/1/95.
- Other Non-RCRA California-regulated waste.

B. HANDLING METHOD

Check the appropriate box.

- The waste identified above must be treated to meet the applicable standards in 22 CCR, Division 4.5, Chapter 13, Article 11.
- The waste identified above meets the applicable treatment standard, no additional treatment required 22 CCR Section 66062.7(a)(2).
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in CCR Title 22, Division 4.5, Chapter 13, Article 11 and all applicable prohibitions set forth in CCR Title 22 Section 66062.112 or RCRA Section 3004(d) U.S.C. Section 6924(d) I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.
- The waste is subject to a variance. The expiration date of the variance is indicated _____.
- The Non-RCRA waste identified above is not currently restricted from land disposal.

C. GENERATOR CERTIFICATION

This notification & certification is based on the following waste stream information:

(A) Chemical/Physical Analysis of the waste; (B) Generator knowledge of the waste; or (C) Both

I hereby certify that all information supplied above and on all associated documents is complete and accurate to the best of my knowledge and that no omissions or errors exist.

Signature [Signature] Title Registered Environmental Health Specialist Date 11/7/87

NOTE: It is the generator's responsibility to maintain LDR copies for five years
060906

u:\handfor

LAND DISPOSAL RESTRICTION NOTIFICATION FORM (LDRNF)

For Wastes Subject to the Treatment Standards Found in 40 CFR 268

INSTRUCTIONS: Complete Part I, check and complete Part II. Complete and sign Part III, if applicable.

PART I. Generator, Reference and Manifest Information

Generator Name: Imperial County Environmental EPA ID # CAS III III 013
 Address: DTSC 10 BOX 806 City: Sacramento
 State: CA Zip: 95812 Manifest Number: 96731549

This stream is (check one) wastewater (Per Section 40 CFR 268.2(D)(1)(2)(3)) non-wastewater.

PART II. Waste subject to Land Disposal Restrictions

Pursuant to 40 CFR 268.7(a), I hereby notify that this waste shipment contains one or more of the following waste(s) restricted to the land disposal restrictions for which applicable treatment standards are set forth in 40 CFR, 268.40 or 42 USCS, 6924(d).

EPA Hazardous Waste Numbers

F listed Solvents (check all that apply)

- F001, F002, F003, F004 or F005 (Underlying constituents must be identified. Use Form LDRN-1A)
- F005 Containing 2-Nitropropane or 2-Ethoxyethanol
- F001-F005 Containing carbon disulfide, cyclohexanone, methanol, or a combination of these constituents as the sole F001-5 regulated constituent.

Other Wastes

List all D.F.K.U. or P Codes (if any) F001, D003, etc.	Subcategory (if any) See LDRN-1B	Wastewater or Non-wastewater		CRO Profile Number	Applicable California Codes
		WW	NWW		
D001	>10% TOC		X	10574	214
none			X	10575	352

Hazardous Debris Notification

This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45
 Contaminants subject to treatment (please list waste codes applicable to the debris)

FACILITY: Note that "Contaminants Subject to Treatment" are those constituents applicable to a waste code listed above for which a BDAT treatment standard is established in 40 CFR 268.40, including underlying constituents where applicable.

Defined: An underlying constituent includes any constituent listed in 268.43, Table LTS-1 (Treatment Standards, except zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above constituent specific GTS treatment standard.

The waste is a characteristic hazardous waste D001 or D002 which is intended for treatment/disposal in a CWA system, CWA-equivalent system, or Class I SDWA system. Underlying Hazardous Constituents (UHC's) are NOT required to be identified.

The waste is a characteristic hazardous waste D001 High TOC Ignitable Liquids Subcategory (i.e., greater than or equal to 10% TOC). Pursuant to 40 CFR 268.40, the waste must be treated using organic recovery (RORGs) or combustion technology. UHC's are NOT required to be identified.

Check here if the waste is a D012-17 non-wastewater or a D013-43 that is intended to be treated in a CWA system, CWA-equivalent system, or Class I SDWA system. If so, the waste is EXEMPT from the LDR regulations, and no further information is required.

Deadline Extensions and Variances
 Certain wastes may be subject to a deadline extension or variance (e.g. treatability variance, case-by-case extension). Describe below any extension that applies to a waste in this waste shipment (include dates and waste codes).

NOTICE: This section must be completed (attach additional sheets if necessary)
 Basis for this certification. Describe the knowledge upon which the certification is made.

ARE THERE ANY CONSTITUENTS WHICH DO NOT MEET APPLICABLE LDR TREATMENT STANDARDS? If yes, please list the constituents which require further treatment.

Waste Code	Constituent(s)

Signature: Jeff Lamour Printed Name: Jeff Lamour Date: 11/7/97

PART III Authorized Representative

Crosby & Overton Profile Number

10574, 10575

Manifest and Line Item Number associated with waste shipment

96731349, 11a 11b

CHECK THE APPROPRIATE CERTIFICATION

1. Generator's Certification (268.7(a)(2)(ii)) for waste that meets Treatment Standards

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and test through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR, Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

2. Waste Treated to Remove Characteristics (268.7(b)(5)(iv))

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification including the possibility of fine and imprisonment.

3. Debris Treated to meet Alternative Standards (268.7(d)(3)(iii))


I certify under penalty of law that the debris has been treated in accordance with the requirements of 40 CFR 268.45. I am aware that there are significant penalties for making a false certification including the possibility of fine and imprisonment.

4. Lab Packs to be Treated by Incineration (Certification must be completed.) Appendix IV Lab Packs

I certify under penalty of law that I have personally examined and am familiar with the waste and that the lab pack contains only wastes which have not been excluded under Appendix IV to 40 CFR Part 268 or solid wastes not subject to regulation under 40 CFR Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

5. Appendix V Lab Pack:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis testing or through knowledge of the waste and that the lab pack contains only organic waste specified in Appendix V to part 268 or solid wastes not subject to regulation under Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

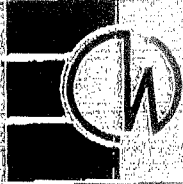
Signature		Print Name	Jeff Lamore
Title	REHS	Date	11/7/97

Waste Codes Which Carry Subcategory Designations

Waste Code	Regulatory Subcategory
D001	LOW TOC Subcategory, Non-CWA/Non-CWA-equivalent/non-Class I SDWA systems.
D001	LOW TOC Subcategory, CWA/CWA-equivalent/Class I SDWA systems.
D001	High TOC Ignitable Characteristic Liquids
D002	Corrosive Characteristic Wastes, Non-CWA/Non-CWA equivalent/non-Class I SDWA systems.
D002	Corrosive Characteristic Wastes, CWA, CWA-equivalent, or Class I SDWA systems.
D003	Reactive Sulfides Subcategory based on 261.23(a)(5).
D003	Explosives Subcategory based on 261.23(a)(6), (7) and (8).
D003	Other Reactives Subcategory based on 261.23(a)(1).
D003	Water Reactive Subcategory based on 261.23(a)(2), (3) and (4).
D003	Reactive Cyanides Subcategory based on 261.23(a)(5).
D006	Cadmium Containing Batteries.
D008	Lead Acid Batteries Subcategory.
D008	Radioactive Lead Solids Subcategory.
D009	Nonwastewaters High Mercury-Organic Subcategory
D009	Nonwastewaters High Mercury-Inorganic Subcategory
D009	Nonwastewaters that contain less than 260 mg/kg total mercury. (Low Mercury Subcategory).
D009	Elemental mercury contaminated with radioactive materials.
D009	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory.
D012-D043	Wastes that are managed in Non-CWA/non-CWA equivalent/Non-Class I SDWA systems only.
F003	F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001-5 solvents: carbon disulfide, cyclohexanone and/or methanol. (formerly 268.41(c)).
F005	F005 solvent waste containing 2-Nitropropane as the only listed F001-5 solvent.
F005	F005 solvent waste containing 2-Ethoxyethanol as the only listed F001-5 solvent.
F015	Light Ends Subcategory.
F023	Spent Filters/Aids and Desiccants Subcategory.
K069	Calcium Sulfate (Low Lead) Subcategory.
K069	Non-Calcium Sulfate (High Lead) Subcategory.
K071	Non-wastewaters from RMERC.
K071	Non-wastewaters not from RMERC.
K106	Non-wastewaters that contain greater than or equal to 260 mg/kg total mercury.
K106	Non-wastewaters, less than 260 mg/kg total mercury that are residues from RMERC.
K106	Non-wastewaters, less than 260 mg/kg total mercury not residues from RMERC.
P065	Non-wastewaters, regardless of their total mercury content, not incinerator or RMERC residues.
P065	Non-wastewaters, either incinerator or RMERC residues and greater than or equal to 260 mg/kg total mercury.
P065	Non-wastewaters residues from RMERC and contain less than 260 mg/kg total mercury.
P065	Non-wastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.
P092	Non-wastewaters, less than 260 mg/kg total mercury not residues from RMERC.
P092	Non-wastewaters, regardless of their total mercury content, not incinerator or RMERC residues.
P092	Non-wastewaters, either incinerator or RMERC residues and greater than or equal to 260 mg/kg total mercury.
P092	Non-wastewaters residues from RMERC and contain less than 260 mg/kg total mercury.
U151	Non-wastewaters that are incinerator residues and contain less than 260mg/kg total mercury.
U151	Non-wastewaters that contain less than 260 mg/kg total mercury and not RMERC residues.
U151	Elemental Mercury Contaminated with Radioactive Materials.

Appendix IV to Part 268-Wastes Excluded From Lab Packs Under the Alternative Treatment Standards of 268.42(c)

Hazardous waste with the following EPA Hazardous Waste Codes may not be placed in lab packs under the alternative lab pack treatment standards of 268.42(c)(INCIN): D009, F019, K003, K004, K005, K006, K062, K100, K106, P011, P012, P076, P078, U134, U151.



CONSOLIDATED WASTE INDUSTRIES, INC.

10680 SILICON AVE.

MONTCLAIR, CA 91763

(909) 482-2267

(800) 788-2167

ORDER DATE: 11/18/97

PAGE 21

BILLING ADDRESS

SERVICE ADDRESS

DEPT. OF TOXIC SUBSTANCE CONTROL
GREEN CONTRACTS & OFFICE SUPPLIES
P.O. BOX 8006
SANTA MONICA, CA 90408-0006

DEPT. OF TOXIC SUBSTANCE CONTROL
GREEN CONTRACTS & OFFICE SUPPLIES
P.O. BOX 8006
SANTA MONICA, CA 90408-0006

ORDER DATE

CUSTOMER P.O. NO.

ORDERED BY

TELEPHONE

CONTACT

DESCRIPTION OF WORK PERFORMED THIS DATE
PROVIDE EMPLOYMENT RECORDS
FOR UNEMPLOYED EMPLOYEES
AGENCY CONTROLLING BY 0900 AM CALIFATED BY 0900 AM

LABOR

1 RESPONSE REPRESENTATIVE
1 TRUCK DRIVER
2 CHEMICAL TECHNICIAN LEVEL 2
1 TRACTOR OPERATOR #31
5 1/2 HOURS

NAME	TITLE	TIME	
		FROM	TO
Joe Spadaro	EP	8:00 AM	10:45
Francisco Chavez	CT12	8:00 AM	10:45
Ed Calverton	T.D.	8:00 AM	10:45
Andres Gonzalez	CT12	8:00 AM	10:45

EQUIPMENT

TYPE	TITLE	TIME	
		FROM	TO
TRACTOR	J1	8:00 AM	10:45
TRUCK	#56	8:00 AM	10:45

96731549, ER-ER 97-11-06
Invoice # 00-0603028

MINIMUM DELIVERY CHARGE IS \$300.00
ADDITIONAL CHARGES FOR TRAVEL TIME? YES NO
ADDITIONAL CHARGES FOR SUBSISTENCE? YES NO

It is the responsibility of the waste generator to correctly identify the chemical composition of each load. In the event a load is rejected by the disposal site because its chemical contents have been incorrectly identified, this law requires that it be returned to the generator. Consolidated Waste Industries, Inc., or its division providing service, will impose freight charges for hauling the load to the disposal site and returning it to the generator. If you are not absolutely certain as to what chemicals are in your waste stream, have it tested by a State Certified Laboratory prior to disposal. Unless specifically assumed in writing by transport generator retains full responsibility for the choice of disposal site to which transport has been hired to transport generator's wastes and all attendant consequences thereto. Custody of generator's wastes is given over to transporter solely for the purposes of transporting the waste to generator's designated TSDP.

In the event of any litigation arising out of this agreement or any transaction contemplated hereby, the prevailing party shall be entitled to reasonable attorney's fees, expenses and costs. Term: Amount due and payable, net (15) days. Past due accounts are subject to a service charge of 1.5% per month (annual rate of 18%) or the maximum allowed by law.

Date: 11/18/97 Customer Signature: [Signature]

HEBER DUNES VEGETATION AND WILDLIFE SURVEY

**Prepared by:
Soil Ecology and Restoration Group
San Diego State University
San Diego, California**

**Lee McClenaghan
Thomas Zink
Fred Edwards
Lisa Heffernan
Dustin Wood**

**Prepared for:
California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division
Sacramento, California**

15 November 1998

**Dept. of Parks and Recreation
Ocotillo Wells District
P.O. Box 360/5172 Hwy 78
Borrego Springs, CA 92004**



Soil Ecology and Restoration Group (SERG)
College of Sciences
Biology Department
San Diego State University
San Diego, CA 92182-4614

Phone (619) 594-5697
Fax (619) 594-3483

e-mail: tzink@sunstroke.sdsu.edu

16 November 1998

David Amme
Department of Parks and Recreation
OHVMR
1725 23rd Street, Suite 220
Sacramento, CA 95816

Dear David,

Here is the final version of the report for Heber Dunes. We incorporated the changes/comments that were provided. To the question that was raised as to whether any permanent markers for the transects were established, the answer is no. Please let me know if there is anything else you need. We have enjoyed working at both Ocotillo Wells and Heber Dunes and would be very interested in any other survey work, or native habitat restoration work, that might be needed in the future. Thanks again.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas A. Zink", is written in a cursive style.

Thomas A. Zink

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ABSTRACT

The Off-highway Motor Vehicle Recreation Division of the California Department of State Parks and Recreation oversees a series of State Vehicular Recreation Areas (SVRAs) throughout the state. Each of these SVRAs is required to maintain an inventory of wildlife populations and their habitats, to have a wildlife protection program to sustain a viable species composition and to monitor the condition of wildlife habitat each year to ensure the habitat protection plans are being met. During the first half of 1998, the State Department of Parks and Recreation leased the Heber Dunes Park site from Imperial County and, since its main recreational feature is off-highway vehicle operation, placed it under the direction of the Ocotillo Wells State Vehicular Recreation Area organization. To bring this newly purchased site into alignment with the above mentioned requirements, the Soil Ecology and Restoration Group (SERG) of San Diego State University was contracted to conduct a one-time survey of Heber Dunes' vegetation, bird, mammal and reptile populations. The information collected will serve as the baseline data for all future surveys.

Vegetation surveys were conducted on five of six plant communities using a modified version of the California Native Plant Society (CNPS) field sampling protocol. Plant cover, plant density and substrate cover were analyzed. Bird population surveys were conducted during early morning and evening hours on three sites using the variable-circular plot method. Species composition, diversity and density were determined for each site. Reptile surveys were conducted on four sites using the time-constraint method during both early morning and evening hours. Species composition, density and diversity of reptile populations were determined for each site. Small mammal populations were surveyed through the use of live-trapping on four sites. Large mammal populations were determined through direct observation or signs. Species composition, density and diversity were determined for small mammals and occurrence determined for large mammals.

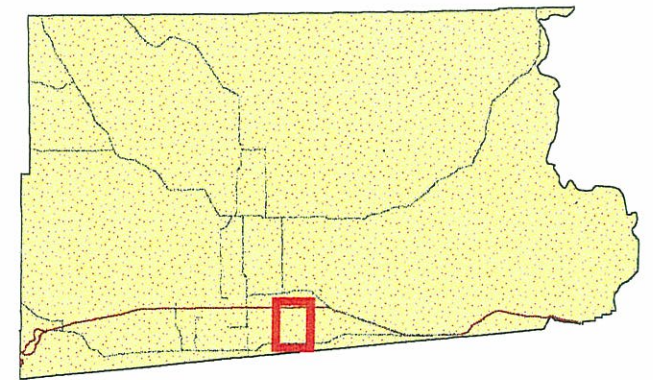
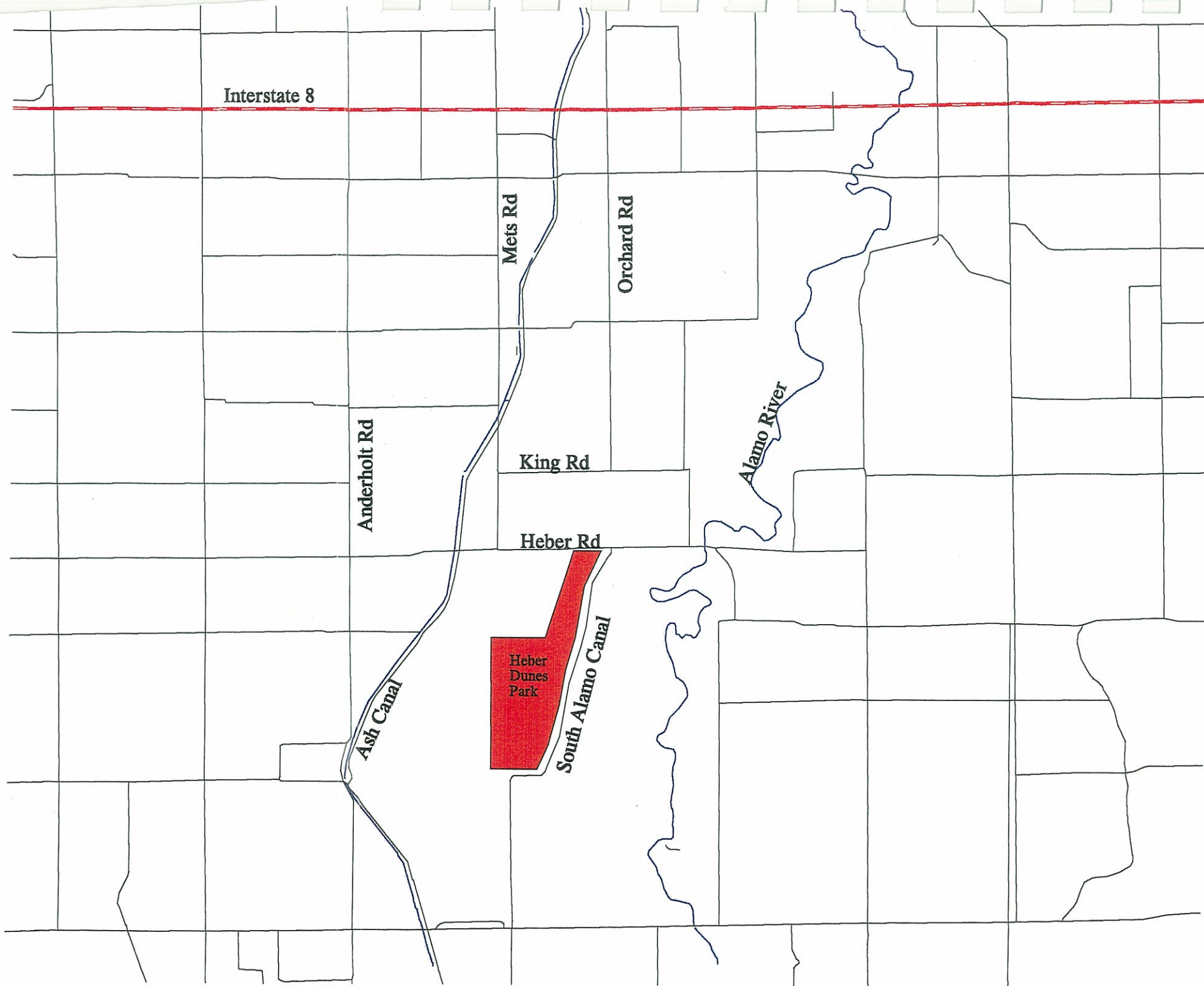
All data were provided to serve as baseline information for future surveys and for use in management decisions. Recommendations concerning habitat protection were also provided based on survey findings.

GENERAL INTRODUCTION

The Off-highway Motor Vehicle Recreation Division of the California Department of State Parks and Recreation oversees a series of State Vehicular Recreation Areas (SVRAs) throughout the state. Each of these SVRAs is required to maintain an inventory of wildlife populations and their habitats, to have a wildlife protection program to sustain a viable species composition, and to monitor the condition of wildlife habitat each year to ensure the habitat protection plans are being met. During the first half of 1998, the State Department of Parks and Recreation leased the Heber Dunes Park site from Imperial County and, since its main recreational feature is off-highway vehicle operation, placed it under the direction of the Ocotillo Wells State Vehicular Recreation Area organization. To bring this newly purchased site into alignment with the above mentioned requirements, the Soil Ecology and Restoration Group (SERG) of San Diego State University was contracted to conduct a one-time survey of Heber Dunes' vegetation, bird, mammal and reptile populations. The information collected will serve as the baseline data for all future surveys.

Heber Dunes is located in the Colorado Desert approximately nine miles southeast of El Centro and approximately seven miles northeast of Calexico (Figure 1). It is a small park, approximately 364 acres in size, bordered on the north by Heber Road, on the east by the South Alamo Canal and by agricultural fields to the west and south. The Heber Dunes area has an average annual maximum temperature of 88° F and an average minimum temperature of 56° F. Heber Dunes receives approximately 2.6 inches of precipitation per year, with most of it falling during the winter months (Figure 2). Geologically the Heber Dunes site is composed of Quaternary lake deposits approximately two million years in age. Soils are largely unconsolidated alluvium that are easily eroded by wind and water that have formed an area of sand dunes that cover the majority of the park.

All survey sampling was accomplished during the months of June and July 1998. Though the time of year prevented the inclusion of possible migratory bird species that might visit the site as they use the Pacific Flyway and the ephemeral annual desert wildflowers that appear only after the spring rains, the survey did include perennial vegetation and nonmigratory bird species, along with resident reptiles and mammals. Sample sites were selected with the aim at providing the most thorough coverage of the site within the financial and time constraints inherent in the project.



0.5 0 0.5 1 1.5 Miles

0.5 0 0.5 1 1.5 2 Kilometers

1:48,000

Source: Tiger Data



Figure 1. Location of Heber Dunes Park

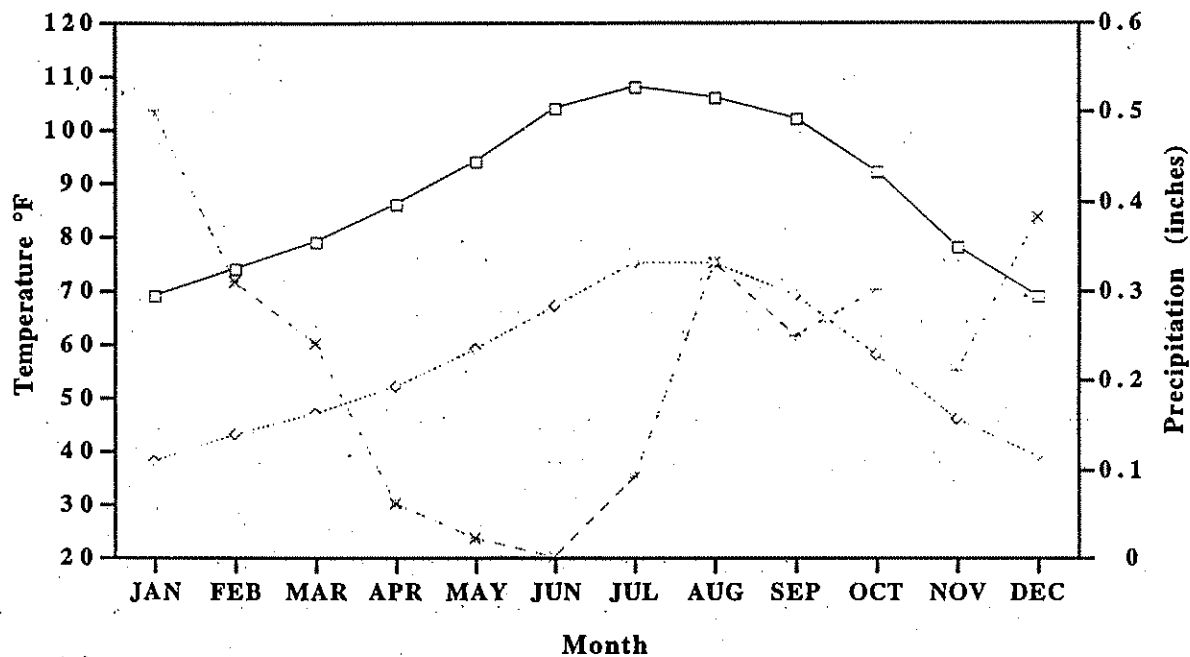


Figure 2 . Climate graph for Heber Dunes showing average maximum temperature (solid line), average minimum temperature (dotted line) and average precipitation (dashed line).

Western Regional Climate Center, Greg McCurdy, gmwrcc@dri.edu

VEGETATION SURVEY

Materials and Methods

An aerial photograph and ground truthing were used to define the vegetation at Heber Dunes Park into 11 specific vegetation regions composed of 6 different vegetation communities. The aerial photograph, taken in March 1998 and provided by the California Department of Parks and Recreation, Off-Highway Vehicle Division, was first imported into Arcview GIS and initial plant communities/regions identified. These preliminary designations were then groundtruthed over a four day period during June 1998 with final communities and regions established as seen in Figure 3.

Five of the six plant communities were sampled using a modified California Native Plant Society (CNPS) method (Sawyer and Keeler-Wolfe, 1995) to determine species cover, density and ground substrate (Appendix 1). The Tamarisk/Sand dune community was not sampled by transect due to the large scale and large distances between individual trees. Transects were not randomly assigned but were established in areas which best represented the vegetation for each community (Figure 4). Plant cover was measured using a 50 meter (m) tape with intersecting points every 0.5 m for a total of 100 points per transect. Absolute cover was calculated for each species over the entire transect. Relative cover, the proportion of the total plant cover belonging to each species, was also determined.

Plant density, expressed as the number of plants per hectare, was calculated for each species and determined by counting numbers of plants within 2.5 m on each side of the transect line for a total sample area of 250 m².

Substrate at each 0.5 m point was noted and listed as either litter or bare sand. Additional plant species identified during the conduct of the sampling but not found on the transects were noted and compiled to prepare an overall species list.

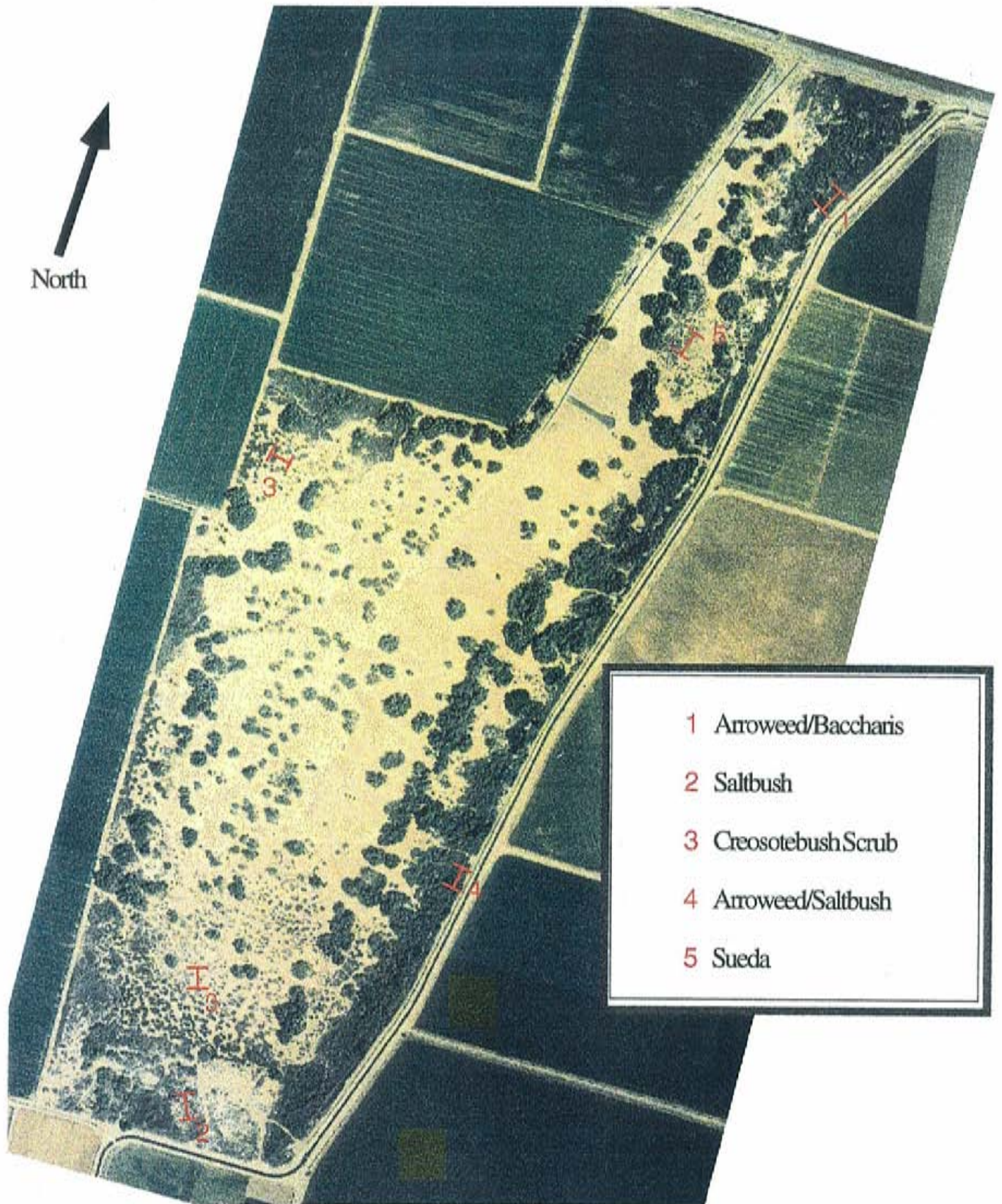


Figure 4. Vegetation survey transect locations

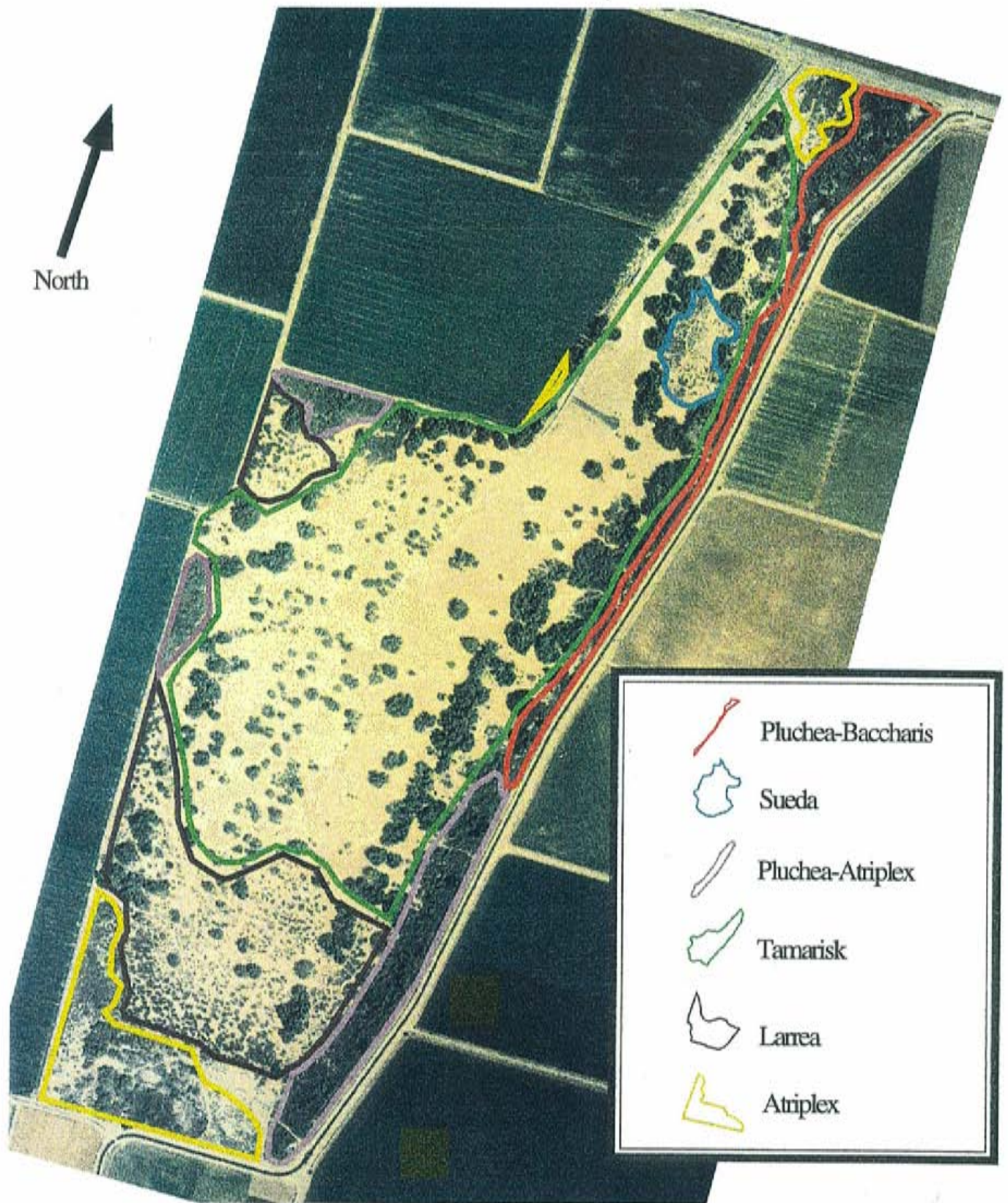


Figure 3. Vegetation communities of Heber Dunes

Results

Detailed descriptions of each community are listed below. A summary of the information recorded in the vegetation transects is found in Table 1. The sum of percent cover of individual species in an area may exceed 100% due to canopy overlap. A species list of all plants found in Heber Dunes in June 1998 is tabulated in Table 2.

Plant Community Descriptions

1) Sueda

The Sueda community covers approximately 5 acres or 1.5 % of the park and is located in the northeast quadrant of the park. This community is dominated by *Sueda moquinii* (sueda) which covers 34% of the shrub layer. Density of *Sueda* is relatively high at 136 plants per hectare. This area is surrounded by tamarisk and a few scattered mesquite. Off Highway vehicle(OHV) activity in this vegetation region is mild to moderate with activity confined to well used trails.

2) Creosotebush scrub

This vegetation community, dominated by *Larrea tridentata* (creosote bush), occurs in two different vegetation regions. The largest region occurs in the southwest portion of the park covering approximately 47 acres. The smaller second portion, located along the central western edge of the park, covers 5.6 acres. Both portions together cover roughly 15.5 % of the park. *Larrea* percent cover in the larger southern region is 53% while in the smaller region coverage was slightly higher at 63%. A large number of *Oligomeris linifolia* were observed in the under story, but did not occur on the transect. The larger southern region had densities of 2120 and 1720 plants per hectare for *Larrea tridentata* and *Oligomeris linifolia* respectively. The smaller western section had a density of 640 plants per hectare for *Larrea tridentata*.

A disturbance gradient is readily apparent in the larger southern *Larrea* vegetation region. It appears that heavy OHV disturbance has reduced the size and density of *Larrea* shrubs located along the northern edge of this region nearest the highly used central sand dune/tamarisk area. The larger less disturbed *Larrea* shrubs can be seen as a darker band on the southern edge of this vegetation zone. Both *Larrea* vegetation regions contain scattered tamarisk and numerous arrowweed shrubs.

Table 1
Summary of plant species information for vegetation transects

Community	Species	Percent Cover	Relative Cover	Density #/Ha	Relative Density
Sueda	<i>Sueda moquinii</i>	34	100	136	100
	Substrate - litter	56			
	Substrate - sand	44			
Larrea (1)	<i>Larrea tridentata</i>	53	100	2120	55
	<i>Oligomeris linifolia</i>			1720	45
	Substrate - litter	53			
	Substrate - sand	47			
Pluchea-Baccharis	<i>Baccharis emoryi</i>	61	52.1	2400	48.4
	<i>Pluchea sericea</i>	56	47.9	2560	51.6
	Substrate - litter	100	100		
Pluchea-Atriplex	<i>Atriplex lentiformis</i>	42	84.7	640	23.5
	<i>Baccharis emoryi</i>	58	40.3	1360	50
	<i>Pluchea sericea</i>	12	8.3	400	14.7
	<i>Tamarix ramosissima</i>	32	22.2	320	11.8
	Substrate - litter	56			
	Substrate - sand	44			
Atriplex	<i>Atriplex lentiformis</i>	42	29.2	2920	70.2
	<i>Baccharis emoryi</i>	5	3.5	40	1
	<i>Pluchea sericea</i>	17	11.8	1200	28.9
	Substrate - litter	69			
	Substrate - sand	31			
Larrea (2)	<i>Larrea tridentata</i>	63	100	640	100
	Substrate - litter	58			
	Substrate - sand	42			

Table 2
List of plant species

Family	Species	Common Name
Arecaceae	<i>Baccharis emoryi</i>	Baccharis
	<i>Helianthus annuus*</i>	Sunflower
	<i>Washingtonia filifera</i>	California fan palm
Asteraceae	<i>Pluchea sericea</i>	Arrowweed
Boraginaceae	<i>Tiquilia plicata</i>	Tiquilia
	<i>Cryptantha sp.</i>	Cryptantha
Brassicaceae	<i>Brassica nigra*</i>	Black mustard
Chenopodiaceae	<i>Atriplex elegans</i>	Wheelscale
	<i>Atriplex lentiformis</i>	Big saltbush
	<i>Atriplex canescens</i>	Fourwing saltbush
	<i>Salsola tragus*</i>	Russian thistle
	<i>Suaeda moquinii</i>	Bush seepweed
Fabaceae	<i>Prosopis glandulosa</i>	Honey mesquite
Malvaceae	<i>Sphaeralcea ambigua</i>	Apricot mallow
Poaceae	<i>Schismus barbatus*</i>	Schismus
Resedaceae	<i>Oligomeris linifolia</i>	Narrowleaf oligomeris
Salicaceae	<i>Populus fremontii</i>	Fremont's cottonwood
	<i>Salix goodingii</i>	Black willow
Tamaricaceae	<i>Tamarix ramosissima</i>	Tamarisk
Zygophyllaceae	<i>Larrea tridentata</i>	Creosotebush
* Exotic Species		

3) Arrowweed/Baccharis

This vegetation community occurs in only one vegetation region which is a long, narrow section along the eastern edge of the park. The community covers approximately 14 acres, or 4% of the park, and is dominated by *Pluchea sericea* (arrowweed) and *Baccharis emoryi* (baccharis). Additional species of interest found within this vegetation region, but not on the transects, are *Prosopis glandulosa* (mesquite), *Populus fremontii* (Fremont cottonwood) and *Salix gooddingii* (Goodding's black willow). Total relative percent cover was 100 % and included overlapping shrub canopies of *Pluchea* at 48% and *Baccharis* at 52%. While not represented in the vegetation transect data, this area is being invaded extensively by tamarisk. OHV activity in this vegetation region is nearly impossible due to the extremely dense vegetation. *Baccharis* density was estimated at 2400 shrubs per hectare and *Pluchea* at 2560 shrubs per hectare.

4) Arrowweed/Saltbush

Structurally the Arrowweed/Saltbush community is very similar to the Arrowweed/Baccharis vegetation complex, with 100% percent cover in both communities. The main differences in the Arrowweed/Saltbush community is a high percent cover of *Atriplex lentiformis* and tamarisk. Heber Dunes has three vegetation regions that contain variations on the Arrowweed/Saltbush vegetation complex. The largest lies in the southwest corner of the park and covers approximately 16.5 acres. Two smaller regions lie on the western edge of the park and cover 2.5 and 3.4 acres each. The sum of Arrowweed/Saltbush vegetation communities cover approximately 6.6% of Heber Dunes. The relative percent cover in the largest Arrowweed/Saltbush region includes: 29% *Atriplex lentiformis*, 40% *Baccharis emoryi*, 8% *Pluchea sericea* and 22% *Tamarix ramosissima*. As in the Arrowweed/Baccharis community, OHV activity in the Arrowweed/Saltbush regions is nearly impossible due to the extremely high density. The following shrub densities were calculated: 640 *Atriplex* shrubs per hectare; 1360 *Baccharis* shrubs per hectare; 400 *Pluchea* shrubs per hectare; and 320 *Tamarix* shrubs per hectare.

5) Saltbush

The Saltbush community occurs in three different vegetation regions covering almost 7% of the park. The largest vegetation region containing the Saltbush community is found at the south western tip of the park and covers approximately 19.5 acres. To the north are found two smaller Saltbush regions which cover 3.1 and 0.2 acres. This

community is dominated by *Atriplex lentiformis*. The largest region contains 29% *Atriplex lentiformis*, 11.8% *Pluchea sericea* and 3.5% *Baccharis emoryi*. In this vegetation community, *Atriplex* also had the highest density with 2920 shrubs per hectare, *Pluchea* the second highest at 1200 shrubs per hectare and *Baccharis* the lowest with only 40 shrubs per hectare. OHV activity in the Saltbush community is moderate with most activity confined to numerous well worn trails.

6) Tamarisk/Sand dune

The Tamarisk community, located in the central section of the park, is dominated by *Tamarix ramosissima* and covers 181 acres, or 53% of the total acreage of the park. *Tamarix* was observed to be the principal plant species present from a ground survey of the community. The remains of several annual herbaceous species in the understory were observed, including; *Tiquilia plicata*, *Cryptantha sp.*, *Atriplex elegans*, *Salsola tragus* and *Schismus barbatus*. The large scale and large distances between individual tamarisk trees in this community made 50 meter vegetation transects impractical. Percent cover of *Tamarix* was therefore estimated at 30% from the aerial photograph. Intense OHV activity in this area along with the sandy soil substrate has resulted in large bare sandy expanses with only a scant covering of native and exotic annuals.

Discussion

Five communities, Sueda, Creosotebush scrub, Arrowweed/Baccharis, Arrowweed/Saltbush and Saltbush scrub, contain all of the native perennial plant biodiversity at Heber Dunes. Taken together these vegetation communities account for roughly 160 acres or 47% of the park. The Tamarisk/Sand dune community accounts for the remaining 53% of the park. The Tamarisk/Sand dune community is virtually devoid of native perennial plant diversity, due in part due to OHV activity and the windblown sandy substrate.

Sampling in early June, after the springtime flush of annual species had passed, dictated that this project would serve only as a preliminary survey focusing on perennial plant biodiversity. Of the annual plant species encountered, most were past accurate identification due to advanced senescence and only a few could be identified. It does appear that the Tamarisk/Sand dune community contains endemic dune species, such as *Abronia villosa* and *Oenothera deltoides*, and should be re-

sampled in the future under appropriate conditions to gain a more accurate flora of the community.

The boundaries for each community were determined from a 1998 aerial photograph with ground surveys and may be arbitrary where no clear cut boundaries exist. Six 50 meter transects were used to describe the vegetation communities identified in this report, but, because of the large area involved, adding more vegetation transects may shift the relative coverage occupied by each species and result in a more accurate picture of each community composition. Additional transects placed in some of the smaller vegetation regions identified in this report could potentially shift boundary edges or influence management decisions regarding preservation.

BIRD SURVEY

Materials and Methods

Three sampling plots were selected for the survey to cover the three major habitat communities that exist at the Heber Dunes site (Figure 5). Sampling was conducted between the hours of 5:30 AM and 9:30 AM and 5:30 PM and 8:30 PM, the hours of peak bird activity. All three plots were surveyed during both morning and evening time allotments.

The Arrowweed/Baccharis plot consisted of a one kilometer long transect along the eastern border of the Heber Dunes site. The Saltbush/Creosotebush scrub plot and the Tamarisk/Sand dune plot each consisted of a one half kilometer transect. All three plots were sampled through the use of the variable-circular plot method (Reynolds, et al., 1980). Ten station points for the elongated Arrowweed/Baccharis and five station points for the other two smaller plots, approximately 100 meters apart, were established from which the observer would listen and watch for bird activity for a period of five minutes, recording each individual sighting/vocalization by noting species and distance, in meters, to its location. Any birds flushed or heard during the transit from one station to the next were recorded with distance measured from the upcoming station.

Data collected from the variable-circular sampling method were used to determine species composition, species density and species diversity. Species composition was determined by simply listing all species of birds that were observed during the survey, plus noting those species of birds that were seen during the survey but not while conducting the actual sampling along the established transects. This included travel time between sampling sites, the time spent returning to the beginning of each transect once the sampling had been completed, and the set up time just prior to commencing the transect walk.

For species density, the distance from the stations where the number of birds observed begins to decline (the point of inflection) was determined by plotting for each species the number of individuals seen in concentric bands around all stations in each type of habitat. Then the number of birds per area per band was plotted and the density in each converted to a standard of birds/m². The number of birds in the

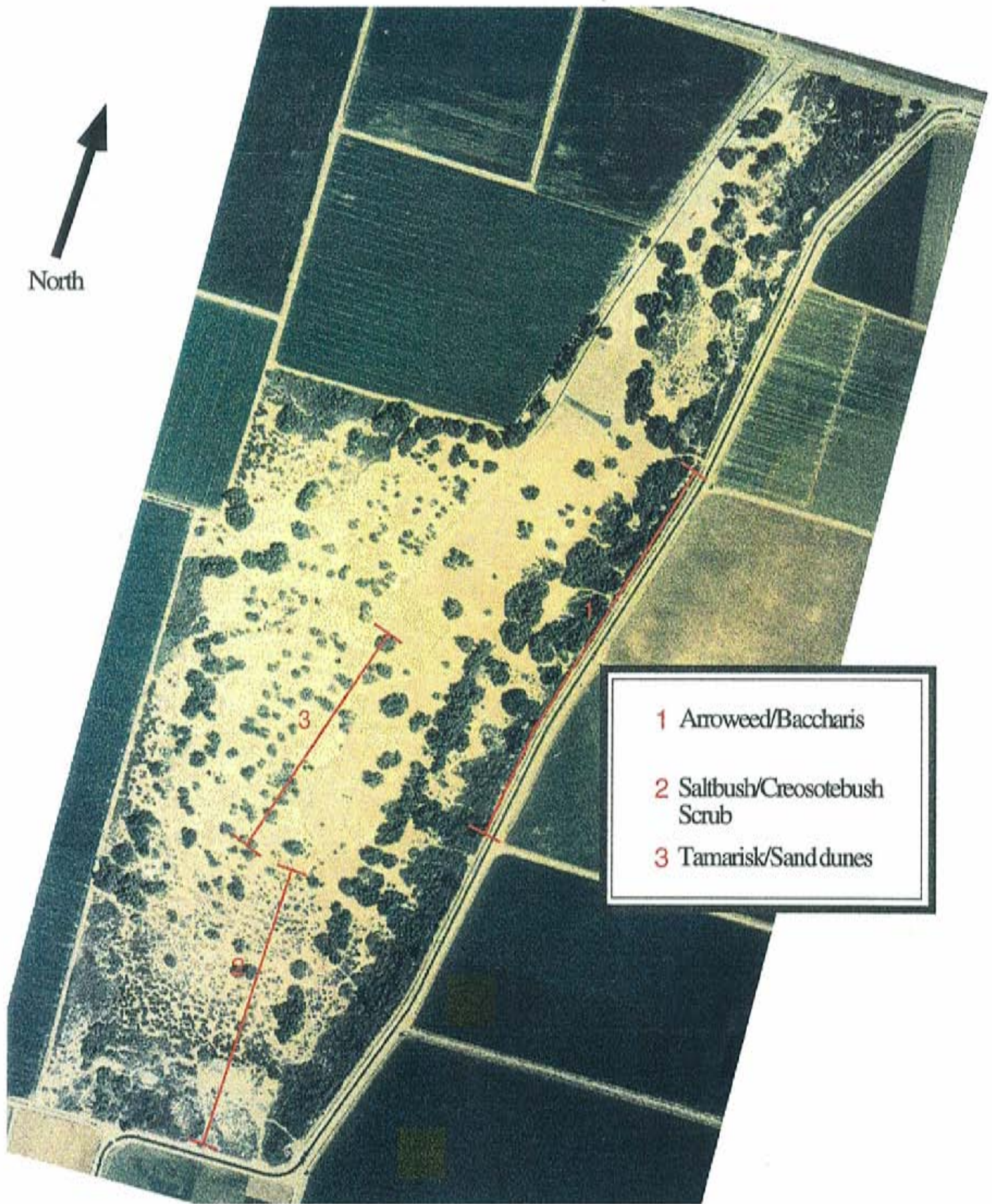


Figure 5. Bird survey transect locations

habitat was then determined by summing the number of individuals counted within the circle of radius x (the inflection point), dividing by the area (πr^2) and converting the resultant density to a standard area (birds/hectare). This procedure rejected all observations outside the circle of radius x .

For species diversity, the Shannon-Wiener function was used (Krebs, 1989). Diversity is a measure of uncertainty in knowing the species of the next individual encountered in a sample. The following formula was used:

$$H = \sum_{i=1}^s (p_i) (\log_e p_i)$$

where H is the measure of diversity, s is the number of species and p_i is the proportion of individuals of species i . If there is low diversity (low uncertainty) H approaches 0. There is no upper limit to H . Evenness (J) was also determined using the formula $J = H / H_{\max}$ where $H_{\max} = \log s$.

Results

Twenty-seven different species were observed during the sampling of Heber Dunes with a total of 332 individuals counted. A comprehensive list is seen in Table 3. Of these twenty-seven species, eight were identified during non-sampling times and were not including in determining species density and diversity. Also, two species, the cattle egret and the white-faced ibis, were observed as transient flyovers and were also not included in the determination of either density or diversity. By far the most abundant bird was the red-winged blackbird with a total of 100 individuals sighted on all three plots. The next most abundant species was the mourning dove with a total of 58 individuals sighted, also on all three plots. The only other species with more than 20 sightings was the rough-winged swallow with 24 individuals observed.

The Saltbush/Creosotebush scrub plot had the most species observed with a total of 14 different species and a total individual count of 94. The Arrowweed/Baccharis plot had 13 different species with an individual count of 161. The centrally located Tamarisk/Sand dune plot had the lowest number of both species and individuals observed with 6 and 37 respectively (Table 4).

Table 3
Comprehensive list of bird species

Common Name	Scientific Name	Total Number
Abert's towhee	<i>Pipilo aberti</i>	11
barn owl(1)	<i>Tyto alba</i>	1
black-headed grosbeak(1)	<i>Pheucticus melanocephalus</i>	1
black phoebe	<i>Sayornis nigricans</i>	5
black-capped gnatcatcher	<i>Polioptila melanura</i>	5
blue grosbeak	<i>Guiraca caerulea</i>	3
brown-headed cowbird	<i>Molothrus ater</i>	14
cattle egret(2)	<i>Bubulcus ibis</i>	20
common grackle(1)	<i>Quiscalus quiscula</i>	15
Gambel's quail	<i>Lophortyx gambelii</i>	1
ground dove	<i>Columbina passerina</i>	12
killdeer(1)	<i>Charadrius vociferus</i>	1
Le Conte's thrasher(1)	<i>Toxostoma lecontei</i>	3
lesser nighthawk	<i>Chordeiles acutipennis</i>	5
mockingbird(1)	<i>Mimus polyglottos</i>	2
mourning dove	<i>Zenaida macroura</i>	58
red-winged blackbird	<i>Agelaius phoeniceus</i>	100
roadrunner(1)	<i>Geococcyx californianus</i>	3
rough-winged swallow	<i>Stelgidopteryx ruficollis</i>	24
sage sparrow(1)	<i>Amphispiza belli</i>	1
sparrow hawk	<i>Falco sparverius</i>	4
verdin	<i>Auriparus flaviceps</i>	16
western bluebird	<i>Sialia mexicana</i>	1
western kingbird	<i>Tyrannus verticalis</i>	14
western meadowlark	<i>Sturnella neglecta</i>	2
white-faced ibis(2)	<i>Plegadis chihi</i>	9
white-winged dove	<i>Zenaida asiatica</i>	17

(1) observed outside survey times

(2) transient flyover

Table 4
Bird species list by plot

Species / Scientific Name	Creosote/saltbush scrub	Arrowweed/Baccharis shrub	Tamarisk/Sand dune
Abert's towhee	10		1
<i>Pipilo aberti</i>			
barn owl			
<i>Tyto alba</i>			
black-headed grosbeak			5
<i>Pheucticus melanocephalus</i>			
black phoebe			
<i>Sayornis nigricans</i>			
black-capped gnatcatcher	4		1
<i>Polioptila mirianura</i>			
blue grosbeak			3
<i>Guiraca caerulea</i>			
brown-headed cowbird	6		7
<i>Molothrus ater</i>			
cattle egret			
<i>Bubulcus ibis</i>			
common grackle			
<i>Quiscalus quiscula</i>			
Gambel's quail	1		
<i>Lophortyx gambelii</i>			
ground dove	6		4
<i>Columbina passerina</i>			
killdeer			
<i>Charadrius vociferus</i>			
Le Conte's thrasher			
<i>Toxostoma lecontei</i>			
lesser nighthawk	2		3
<i>Chordeiles acutipennis</i>			
mockingbird			
<i>Mimus polyglottos</i>			
mourning dove	21		29
<i>Zenaidura macroura</i>			
red-winged blackbird	16		63
<i>Agelaius phoeniceus</i>			
roadrunner			
<i>Geococcyx californianus</i>			
rough-winged swallow	2		22
<i>Stelgidopteryx ruficollis</i>			
sage sparrow			
<i>Amphispiza belli</i>			
sparrow hawk	2		2
<i>Falco sparverius</i>			
verdin	6		10
<i>Auriparus flaviceps</i>			
western bluebird			
<i>Sialia mexicana</i>			
western kingbird	9		5
<i>Tyrannus verticalis</i>			
western meadowlark	2		
<i>Sturnella neglecta</i>			
white-faced ibis			
<i>Plegadis chihui</i>			
white-winged dove	7		10
<i>Zenaidura macroura</i>			
Total Species	14	13	6
Total sightings	94	161	37

Four species were observed on all three plots: ground dove; brown-headed cowbird; mourning dove; and red-winged blackbird. Four species were observed at only one plot; black phoebe and western bluebird were seen only at the Arrowweed/Baccharis shrub plot while Gambel's quail and western meadowlark were seen only at the Creosote/Saltbush scrub plot (Table 4).

Bird density ranged from a high of 84 birds per hectare at the Saltbush/Creosotebush scrub plot to a low of 21 birds per hectare at the Tamarisk/Sand dune plot. The Arrowweed/Baccharis plot had a density of 54 birds per hectare. Species diversity was highest in the Saltbush/Creosote scrub habitat with a diversity index of 2.33. Arrowweed/Baccharis shrub habitat was next with a diversity index of 1.90 with the Tamarisk/Sand dune habitat having the lowest diversity index of 1.27 (Table 5).

Discussion

Two of the three plots, Saltbush/Creosote scrub and Arrowweed/Baccharis shrub, demonstrated both high species composition and high total number of individuals sighted. The common denominator between these two plots is that the majority of the vegetation in both these habitats is native, unlike the exotic tamarisk trees that form the vast majority of the vegetation in the Tamarisk/Sand dune plot. The greater number of plant species and overall amount of cover provided by the Saltbush/Creosote scrub and Arrowweed/Baccharis shrub habitats is probably the primary reason for the relatively large number of both species and individuals observed in these two plots.

Both the Saltbush/Creosote scrub and Arrowweed/Baccharis shrub plots also had much greater density and diversity numbers than did the Tamarisk/Sand dune plot, again demonstrating that the two habitats dominated by native vegetation are the most productive bird habitats at Heber Dunes. Density numbers for both native plots are very high in relation to those found even in the most productive habitats at the Ocotillo Wells State Vehicular Recreation Area which had densities of 42 and 35 birds per hectare at San Felipe Wash and Barrel Springs respectively (McClenaghan, et al. 1997). Such high densities at Heber Dunes is not unexpected considering it provides the only native habitat in an area dominated by agricultural fields for miles in every direction.

Table 5
bird species density and diversity summary

Sample Plot	Species (#)	Density (# per hectare)	Diversity (SDI)	Evenness (SDJ)
Saltbush/Creosote Scrub	14	84	2.33	2.03 .88
ArrowWeed/Baccharis	13	54	1.9	1.71 .74
Tamarisk/Sand dune	6	21	1.27	1.63 .71

Diversity indices for the Saltbush/Creosote scrub and Arrowweed/Baccharis shrub habitats are very similar to the highest indices found at Ocotillo Wells SVRA; 2.36 for San Felipe Wash and 1.86 at Quarry Wash. This would appear to indicate that species diversity for the two native plant habitats at Heber Dunes is normal for a Colorado Desert site.

It appears that Heber Dunes is serving as an oasis in the middle of an agricultural desert for a large number of birds, in both number of species and number of individual birds. This can be seen in the very high number of species and individuals observed in the two native habitats, even at a time when migratory species had already passed through the area. The native habitat provided by Heber Dunes, small as it is, provides food, nesting sites, perching sites and protection from predators for a large number of resident birds and, in all probability, for a large number of migratory birds as well during the spring and autumn months.

REPTILE SURVEY

Materials and Methods

Four sites within Heber Sand Dune Park were sampled. Each site was sampled once in the morning and once in the evening. Sites were sampled in the morning between 8:00 AM and 12:00 PM and in the evening between 9:00 PM and 12:00 AM, the most active times for diurnal and nocturnal species respectively. The method used for sampling involved walking line transects in conjunction with time constraint searches as described by Donnelly and Guyer (1994).

Each site consisted of three transects, 100 m in length, extending north, southwest, and southeast from a location within the habitat (Figure 6). Each 100 m transect was sampled for a period of 20 minutes by starting from the beginning of the transect and walking the transect until time expired. All bushes, rocks, boards, and other debris were searched within a 30 meter belt width (15 meters on each side) along each transect. Lanterns and head lamps were used during evening sampling periods. An attempt was made to sight identify all reptiles within the transect. Also, an effort was made to record incidental species within the park between sample periods.

Species density was determined by dividing the total number of specimens recorded at a site by the total area surveyed for each site which was calculated to be 9000 m². This number was then converted to a standard area (reptiles/hectare). For species diversity, the Shannon-Wiener function was used (Krebs, 1989). Diversity is a measure of uncertainty in knowing the species of the next individual encountered in a sample. The following formula is used:

$$H = \sum_{i=1}^s (p_i) (\log_e p_i)$$

where H is the measure of diversity, s is the number of species and p_i is the proportion of individuals of species i. If there is low diversity (low uncertainty) H approaches 0. There is no upper limit to H. Evenness (J) was also determined using the formula $J = H / H_{\max}$ where $H_{\max} = \log s$.

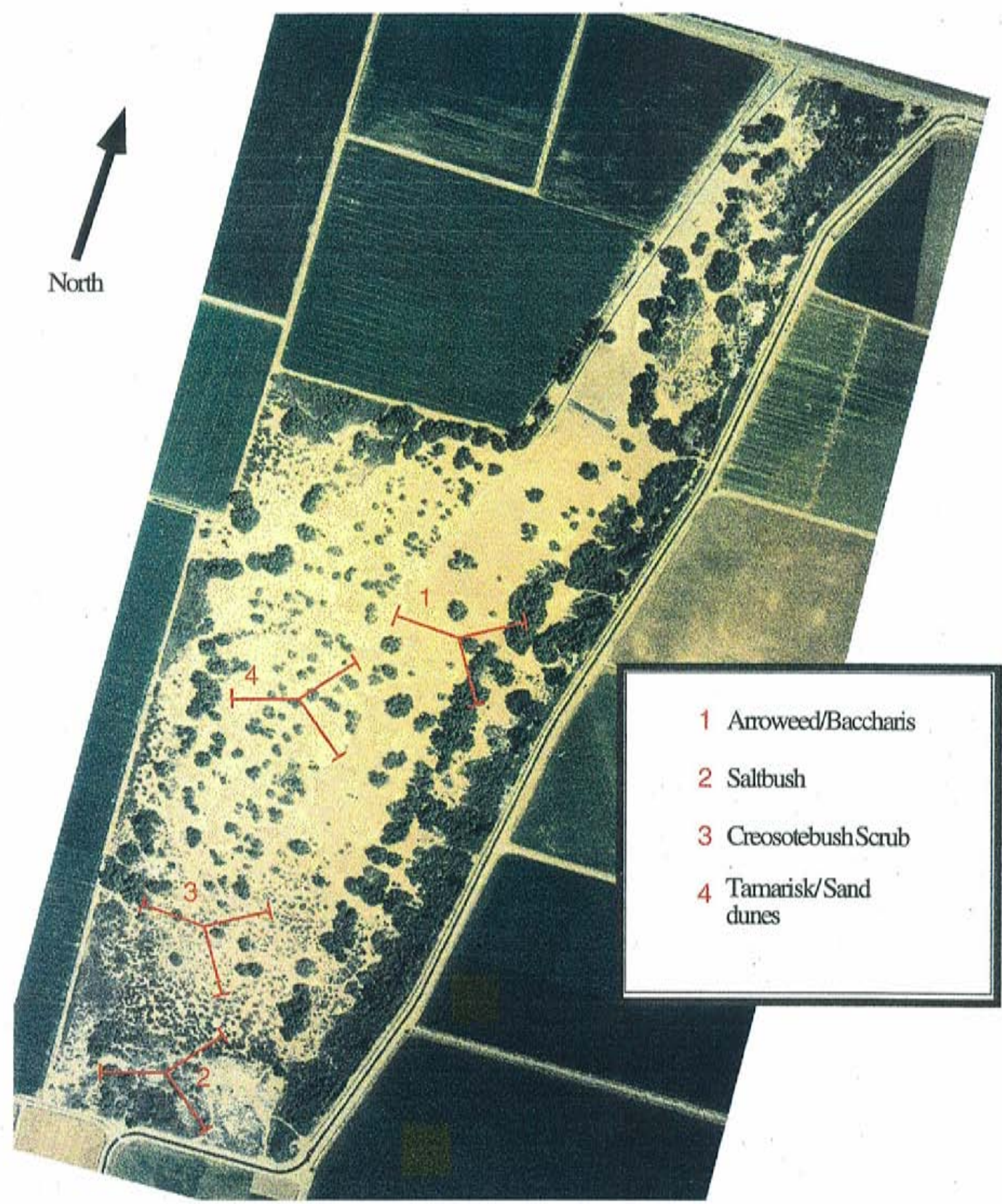


Figure 6. Reptile survey transect locations

Results

Table 6 shows that a total of 5 species were found throughout the four sites sampled, all of which were observed during the sample periods. No incidental species were observed while surveying, however, at least three different snake tracks were observed in the Creosotebush scrub and the Saltbush scrub sites. One type of track was identified as a sidewinder (*Crotalus cerastes*) while the other track was most likely a gopher snake (*Pituophus melanoleucus*). The total number of specimens recorded throughout the four sites was 25. The total number of reptile species and sightings recorded for each site is listed in table 7.

The Saltbush scrub site had the highest number of reptiles observed with 10 sightings. Most of the sighted reptiles were western whiptails (*Cnemidophorus tigris*). The only other reptile observed was one side-blotched lizard (*Uta stansburiana*). The Creosotebush scrub had the next highest number of reptiles observed with a total of 7 sightings, 5 of which were long-tailed brush lizards (*Urosaurus graciosus*), one western whiptail (*Cnemidophorus tigris*), and one long-nosed snake (*Rhinocheilus lecontei*). The Tamarisk/Sand dune and Arrowweed/ Baccharis sites both had lower numbers of species observed, however the Tamarisk/ Sand dune was the only site where sidewinders were observed.

The most abundant species appears to be the western whiptail (*Cnemidophorus tigris*) with a total of 11 sightings over three of the four sites. A total of 6 Side-blotched Lizards (*Uta stansburiana*) were recorded over three of the four sights. All other species were observed two or less times with the exception of the long-tailed brush lizard (*Urosaurus graciosus*) which was recorded 5 times, but was only found in the Creosotebush Scrub.

Density ranged from 3 reptiles/hectare to 11 reptiles/hectare over the four sites sampled. The Arrowweed/ Baccharis site had the lowest density (3 reptiles/hectare). The Saltbush scrub had the highest density (11 reptiles/ hectare). The other two sites (Tamarisk/Sand dune, Creosotebush scrub) had densities of 6 and 8 reptiles/hectare respectively (Table 8).

Diversity, measured using the Shannon-Wiener function, ranged from $H=0.32$ to $H=0.80$ (Table 8). The Saltbush scrub had the lowest diversity ($H=0.32$) since the

Table 6
Comprehensive list of reptile species

Species Common Name	Species Scientific Name	Total Number
Long-tailed Brush Lizard	<i>Urosaurus graciosus</i>	5
Side-blotched Lizard	<i>Uta stansburiana</i>	6
Western Whiptail	<i>Cnemidophorus tigris</i>	11
Sidewinder	<i>Crotalus cerastes</i>	2
Long-nosed Snake	<i>Rhinocheilus lecontei</i>	1

Table 7

Reptile species list by plot

SPECIES	Creosotebush Scrub	Saltbush scrub	Tamarisk/Sand dune	Arrow weed/Baccharis
Long-tailed Brush Lizard <i>Urosaurus graciosus</i>	5			
Side-blotched Lizard <i>Uta stansburiana</i>		1	3	2
Western Whiptail <i>Cnemidophorus tigris</i>	1	9		1
Sidewinder <i>Crotalus cerastes</i>			2	
Long-nosed Snake <i>Rhinocheilus lecontei</i>	1			
Total Species	3	2	2	2
Total Sightings	7	10	5	3

Table 8
 Reptile species density and diversity summary

Sample Sites	Species (#)	Density (#/hectare)	Diversity (SDI)	Evenness (SDJ)
Creosotebush scrub	3	8	0.80	1.67 ^{0.73}
Saltbush scrub	2	11	0.32	1.06 ^{.46}
Tamarisk/Sand dune	2	6	0.67	2.23 ^{.97}
Arrowweed/Baccharis	2	3	0.63	2.09 ^{.91}

western whiptail comprised the majority of sightings within that habitat. The Creosotebush scrub exhibited the highest diversity ($H=0.80$) of all sites because it was the only site where more than two reptile species were observed.

Discussion

Overall, the reptile survey produced a relatively low number of species, with the total number of reptiles observed at each of the sites ranging from 3 to 10. Three of the four habitats supported just 2 reptile species, with the Creosotebush scrub habitat supporting 3 species. However, based on observations it is likely that the Saltbush scrub site supports more than two reptile species. During survey times many snake tracks were observed within this habitat, and at least 2 different tracks were identified (*Crotalus cerastes*, *Pituophus melanoleucus*). Altogether a total of 5 reptile species were observed within the Herber Dunes Park.

The most productive sites, measured in terms of density and diversity, were the Creosotebush scrub and the Saltbush scrub. Although the diversity of the Saltbush scrub was low, the results do not reflect the high occurrence of snake tracks which are evidence that more species of reptiles utilize this habitat. It is also likely that the two habitats (Creosotebush scrub, Saltbush scrub) share the same species composition. Although the results of the survey do not portray this trend, the habitat preferences of the types of species observed in the two scrub sites are similar, and the two habitats are located adjacent to each other. One exception are the long-tailed brush lizards (*Urosaurus graciosus*). They most likely occur within the Creosotebush scrub only. These lizards are exclusively arboreal and typically inhabit creosote.

The Tamarisk/Sand dune site and the Arrowweed/Baccharis site exhibited similar diversity measurements ranging from $H=0.63$ to $H=0.67$. The low density/abundance of reptiles on the Arrowweed/Baccharis site was somewhat unexpected, since the vegetation cover was extensive and many arthropods were found within this habitat. However, this site was somewhat difficult to search for reptiles due to the vegetation cover. Pit-fall traps similar to those utilized by Case and Fisher (1995) would be a better method of sampling for reptiles in this habitat.

MAMMAL SURVEY

Materials and Methods

Live-trapping was utilized to assess diversity and abundance of small mammal species in the four predominate vegetation communities (Saltbush, Creosotebush scrub, Tamarisk/Sand dune, and Arrowweed/Baccharis) at Heber Dunes (Figure 7). In each habitat type, Sherman live-traps were set out along line transects; a 10 m interval between trap stations was used. Traps were baited with mixed birdseed and set late in the afternoon, checked shortly after sunrise the next morning, and then closed for the day to avoid trap mortality for any diurnal species that may have been present (e.g. *Spermophilus tereticaudus*). This protocol was followed for three consecutive nights (July 20-22, 1998) for the Saltbush (25 traps), Creosotebush (50 traps) and Tamarisk/Sand dune (50 traps) transects and for two consecutive nights (July 21-22, 1998) for the Arrowweed/Baccharis (25 traps) transect. Size of habitat determined number of traps used. The presence of other mammal species was assessed through direct observations of individuals or signs of their activity (e.g. tracks).

Animals that were captured were identified as to species and sex. Upon their initial capture, each animal was marked in the ear by a spot of black ink from an indelible marking pen; these marks were used to distinguish animals captured for the first time from those previously captured ("recaptures"). All captured animals were released at the point of their capture.

Species diversity for each habitat type was quantified using the Shannon-Wiener function:

$$H = \sum_{i=1}^s (p_i)(\log_e p_i)$$

where H is the measure of species diversity, s is the number of species and p_i is the proportion of individuals of species i (Krebs, 1989). Abundances of species on plots was estimated using the standard measurement of number of individuals captured per 100 trap-nights of trapping effort. Evenness (J) was also determined using the formula $J = H / H_{\max}$ where $H_{\max} = \log s$.

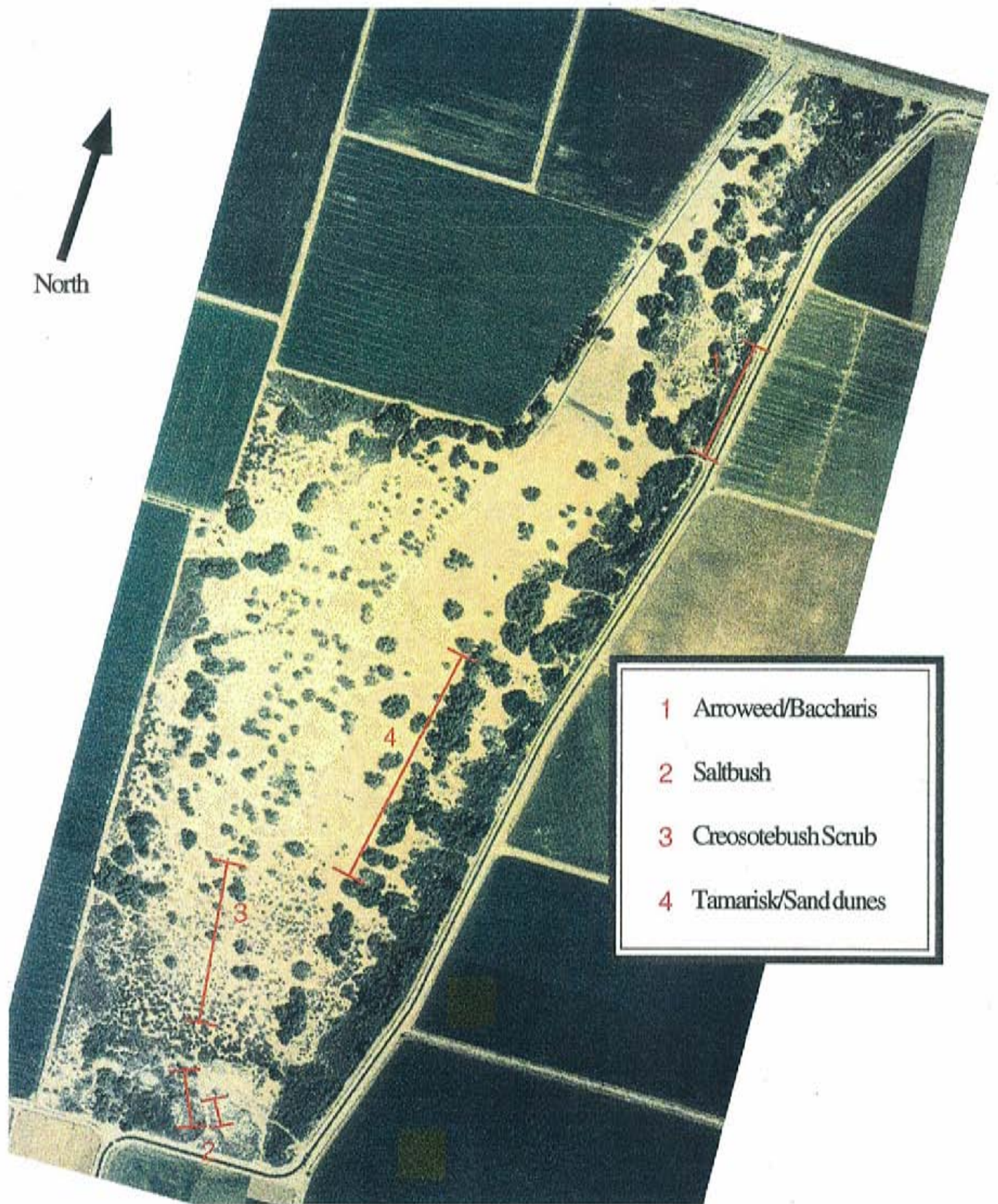


Figure 7. Mammal survey transect locations

Results

Small Mammals

The live-trapping survey consisted of 425 trap-nights of trapping effort. During the survey, 39 different individuals were captured a total of 44 times for a trapping success rate of 10.4%. A total of three species of small mammals were captured during the study. None of the species captured have been designated as "endangered" or "threatened" by either federal or state agencies.

A summary of results from the live-trapping survey is presented in Table 9. The desert pocket mouse (*Chaetodipus penicillatus*) was the most abundant species at the Heber Dunes site, accounting for 82% of all individuals captured; the remaining captures were evenly distributed between the deer mouse (*Peromyscus maniculatus*, 10%) and the cactus mouse (*Peromyscus eremicus*, 8%). *Chaetodipus penicillatus* was also the most widely distributed species, with individuals of the species being captured in all four habitat types. *Peromyscus maniculatus* was captured in the Saltbush and Tamarisk/Sand dune habitats, while *P. eremicus* was captured in the Saltbush and Creosotebush habitats.

Species diversity indices (H) for each habitat type are presented in Table 9. Numbers of rodent species captured in each habitat were generally low, varying between 1 and 3 species. Similarly, species diversity indices (H) reflect the low numbers of species present, ranging between 0.000 (1 species, Arrowweed/Baccharis habitat) to 0.908 (3 species, Saltbush habitat). Pooling all data, H for the Heber Dunes site was estimated at 0.593.

Relative abundances for each habitat type were estimated as the number of individuals capture/100 trap-nights (Table 9). Rodent abundances were highest in the Saltbush and Creosotebush communities, with estimated abundances of 14.7 and 10.7 individuals/100 trap-nights, respectively. Rodents were considerably less abundant in the Tamarisk/Sand dune and Arrowweed/Baccharis communities (6.0 individuals/100 trap-nights in both habitats). The abundance and diversity estimated for the Tamarisk/Sand dune habitat solely reflects animals living in the tamarisk which were captured in traps set along the dune-tamarisk interface.

Table 9
Mammal species survey summary

SPECIES	Creosotebush	Scrub	Saltbush scrub	Tamarisk/Sand dune	Arrow weed/Baccharis	Total
Deer mouse			2	2		4
<i>Peromyscus maniculatus</i>						
Cactus mouse	1		2			3
<i>Peromyscus eremicus</i>						
Desert pocket mouse	15		7	7	3	32
<i>Chaetodipus penicillatus</i>						
Number captured	14 16		16	9	3	39 44
Abundance	14.7		10.7	6	6	9.2
Number of species	2		3	2	1	3
Diversity (SDI)	0.234		0.908	0.53	0	0.593
Evenness (SDJ)	0.77, 3.4		1.9, 8.3	1.76, 7.6	*	1.24, 5.4

Large Mammals

In addition to rodents, several other mammalian species inhabit the Heber Dunes site. The presence of these species was confirmed either through direct observation of the animals or through observation of signs left by animals. A list of these species can be found in Table 10. Audubon's cottontail (*Sylvilagus audubonii*) was abundant at the site, particularly in habitats adjacent to neighboring agricultural fields. Black-tailed jackrabbits (*Lepus californicus*) were present, though much less abundant than the cottontails. Several roundtailed ground squirrels (*Spermophilus tereticaudus*) were observed running down burrows along the perimeter road in the southern part of the site and tracks of coyotes (*Canis latrans*) were observed in the Tamarisk/Sand dune and Creosotebush habitats. The presence of the spotted skunk (*Spilogale putorius*) is based upon the finding of the tail of a dead individual in the Saltbush habitat.

Discussion

Probably the most striking pattern to emerge from this survey is the low diversity and abundance of rodents at the Heber Dunes site. Rodent communities at the site consisted of only 1-3 species and diversity indices (H) were less than 1.000 in all four habitats. Several species frequently found in desert habitats, such as the little pocket mouse (*Perognathus longimembris*) and the desert wood rat (*Neotoma lepida*), appear to be absent from Heber Dunes. Particularly noteworthy in this regard is the absence of kangaroo rats (genus *Dipodomys*): Kangaroo rats are perhaps the most common rodents occurring in Creosotescrub and Tamarisk/Sand dune habitats and some species, such as *D. deserti*, are blow-sand specialists that are restricted to dunes and other areas with soft, sandy soils. The absence of kangaroo rats and other rodent species from Heber Dunes was unexpected since suitable habitat for these animals is fairly abundant at the site.

The most likely explanation for this pattern is the extinction of species following the spatial isolation of Heber Dunes from the rest of the Colorado Desert. Heber Dunes is a "habitat island" surrounded by a "sea" of agricultural land. Extinction rates on islands are a function of island size; small islands typically support small populations that are more susceptible to extinction through random processes or "demographic

Table 10
Large mammal species list

Species	Source of documentation
Coyote <i>Canis latrans</i>	Tracks observed
Black-tailed jackrabbit <i>Lepus californicus</i>	Individuals observed
Audubon's cottontail <i>Sylvilagus audubonii</i>	Individuals observed
Roundtailed ground squirrel <i>Spermophilus tereticaudus</i>	Individuals observed
Spotted Skunk <i>Spilogale putorius</i>	Remains of dead individual observed

stochasticity" (*sensu* Gilpin and Soule, 1986) than large islands. In addition, colonization rates of islands by non-volant mammals are generally low and considerably less than rates of extinction (Brown, 1971).

With an area of 364 acres, Heber Dunes is clearly a "small island" for mammals and its small mammal community has probably been subjected to extinctions since its isolation. It is not possible to unambiguously identify what processes may have contributed to these extinctions. The impact of off-road vehicle activity is probably negligible, given that this activity is largely confined to unvegetated dunes which probably never supported rodent populations. One possible factor contributing to the extinction of small mammals such as *Dipodomys* may be competition from the dense ant populations which inhabit Heber Dunes (pers. obs.). Brown and Davidson (1977) and others have shown an inverse relationship between ant and rodent diversity and abundance in desert ecosystems, reflecting the fact that these taxa compete interspecifically for food (seeds).

RECOMMENDATIONS

Vegetation

OHV activity in the Tamarisk/sand dune community does not appear to be a threat to plant biodiversity at Heber Dunes. This area should remain open to OHV use. However in the Creosotebush and Saltbush communities, OHV activity poses a threat to long term sustainability. In the Creosotebush community the effects of OHV activity are already apparent. Density is considerably lower and a reduction in shrub height are apparent in high traffic areas adjacent to the Tamarisk/Sand dune community. Bare areas and roads, where camping or refuse dumping has occurred, are present in the Saltbush community. Continued traffic will increase the size of these disturbed areas. We recommend OHV traffic in the Creosotebush and Saltbush communities be confined to well defined trails or, if possible prohibited all together. A series of trail closures at strategic points would facilitate vegetation recovery and direct the flow of traffic through the areas.

Competitive displacement of native species by *Tamarix* occurs throughout Heber Dunes. Removal of *Tamarix* should be a priority within the Arrowweed/Baccharis and Arrowweed/Saltbush communities where *Tamarix* is in direct competition with natives for water and space. In the Tamarisk/Sand dune community, the bulk of Heber Dunes, *Tamarix* removal should not be a priority. In this area the tamarisk trees actually provide a shady, favorable environment for recreation. Heber Dunes is one of the few remaining undeveloped areas within the El Centro region. Removal of *Tamarix* should be coordinated with plantings of *Populus*, *Salix*, and *Prosopis glandulosa* using seed and cuttings collected from Heber Dunes. In this way the unique genetic material of the region will be preserved for future restoration and agriculture land rehabilitation programs.

Birds

Heber Dunes serves as an oasis for a large number of birds by providing habitat for nesting, perching, feeding and protection amid a sea of agricultural land. Due to their innate mobility, birds have the opportunity to move as habitat is degraded beyond the capability to sustain viable populations. It appears that such movement has occurred in the Heber Dunes area. As more and more native habitat has been removed and

replaced with agricultural land, birds have been forced to move to remaining native habitat.

The situation has now been reached that Heber Dunes is the only native habitat remaining for miles. This can be seen in the very high number of individuals observed at Heber Dunes, mainly in the southern area of Saltbush and Creosotebush scrub habitats. To ensure that this last stand of native habitat is protected from further degradation, it is recommended that the southern section of Heber Dunes be protected from future OHV activity. Only by such actions will this last remaining native habitat be saved for not only the local desert species, but for the many migratory species that invariably depend upon this last island of native habitat for food, rest and protection during their spring and fall migrations.

Reptiles

If one of the goals of this monitoring program is to determine the reptile species composition within select habitats, it is recommended that more thorough sampling be performed. Time of day is an important factor since there are both diurnal and nocturnal species of reptiles found in the same habitat. Care must be taken to sample for both diurnal and nocturnal reptiles in order to obtain an accurate measure of diversity and density. Also utilizing tracking methods as described by Lillywhite (1982) to determine estimates of density and diversity might be profitable to supplement the rare opportunity of observing some of the snake species that occur within Heber Dunes. In addition, sampling should be carried out more than once each year. It is suggested that sampling be performed at each site at least once in early spring and early summer (April through July). Substantial sampling effort is needed to accurately determine what the species diversity of a study site might be.

The Creosotebush scrub was the most productive of the different habitats surveyed in this study. Nevertheless, more effort is required to accurately determine the diversities of all the study sites, especially the Saltbush scrub and Arrowweed/Baccharis sites. It is highly probable that more species of reptiles utilize these habitats. The pit-fall trapping method as described by Case and Fisher (1995) is recommended for the Arrowweed/Baccharis site due to the thick vegetation cover.

Overall, it is recommended that the southern section of Heber Dunes Park be protected from further OHV activity to salvage the last remaining native desert habitat within many miles. Heber Dunes serves as an island community for numerous desert reptile species that cannot migrate to other areas once this habitat disappears. If OHV activity continues within the Saltbush and Creosotebush scrub habitats, both communities will soon be degraded beyond the capability to maintain viable reptile populations.

Mammals

Heber Dunes is a small "island" of native habitat in a "sea" of agricultural lands. The isolation of this habitat from any nearby surrounding native vegetation communities appears to have had an effect on the mammal population within the park site. Mammals, especially small mammals, do not have the ability to move from such islands as birds do, and the low species composition and diversity found at Heber Dunes reflects this.

A comparison of trapping results from the four habitat types reveals only small, insignificant difference between habitats with respect to the diversity and abundance of small mammals; in all habitats, diversity and abundance were both low. Given the low diversity and lack of any endangered or threatened species at the site, it is difficult to argue, at least on basis of these trapping results, that any special protection or management should be afforded any of the habitats examined. However, the protection of the southern section of the park, which includes the Saltbush scrub and Creosotebush scrub, from further OHV damage should help maintain the limited small mammal population that has managed to survive. Also, from an esthetic standpoint, protection of the Creosotebush scrub habitat in the southern portion of the site might be desirable since this habitat presumably represents the dominant habitat surrounding the dunes prior to their isolation. It is therefore recommended that the southern portion of Heber Dunes Park be protected by prohibiting further OHV use in this area while allowing such activity to continue in the central Tamarisk/Sand dune section of the park.

APPENDIX 1

FIELD SAMPLING PROTOCOL

Point-intercept transect to determine cover: One hundred points were sampled along a randomly placed 50 meter (m) tape at 0.5 m intervals starting at 0.5 m and ending at 50 m. A one meter long, 1/4 inch round steel bar was placed vertically at each sampling, consistently on the same side of the tape.

All live species were counted that came in contact with the bar or in the case of overhanging vegetation, intercepted the upward projection of the bar. Trees, shrubs, and forbs were counted if the bar or its projection fell within the (visually determined) rounded outline of their canopies, even if no plant material was actually intercepted. Linear growth forms, such as annual grasses or protruding branches on shrubs or trees, were counted only if they touched the bar or passed through its vertical projection. If no vascular plants were intercepted at a sample point, it was recorded as "bare". Total cover was based simply on how many points were covered by vascular plants, regardless of the number of plant species overlapping a given point. In other words, total cover is based on how many points were not recorded as bare of vascular plants. Since several plants often overlapped a single point, the sum of individual species covers is generally more than the total cover.

Intercepted species were placed in either a "tree" layer (>2.5 m), a "shrub" layer (0.4 - 2.5 m) or a "herb" / "ground" layer (< 0.4 m). An individual plant was assigned to only one layer based on the highest point of the intercepted individual, measured vertically from the ground, not based on the height of the intercepted plant part. Since layer placement was determined by height only, a tree could be placed in the tree, shrub, or herb layers, depending on whether it was mature, a sapling, or a seedling. Similarly a tall herb or grass could be placed in the shrub or tree layer. If multiple individuals of the same species in the same layer were intercepted at a sample point, all were recorded in the field notes, but only counted as a single hit for that species. If two plants of the same species overlapped a point, but in different layers, they were each counted as a hit in their respective layer.

Ground cover of rock or mineral soil, litter, non vascular flora, or live plant stem were recorded at each sample point. Determinations were made independent of the determinations for vascular plants. Hence, a point covered by cryptobiotic crust could be recorded as "bare" with respect to vascular plants.

Percent cover was determined for a species simply by dividing the number of points covered by that species by the total number of sample points. Total cover is similarly determined. Relative cover for a species is determined by dividing the percent cover for that species by the sum of the percent covers for all species (not by total cover).

Plot count to determine perennial density: A 2.5 m band was defined on each side of the 50 meter tape to create a 250 m² plot. All live perennial herbs and grasses, shrubs and trees within the plot were counted, including those counted in the point-intercept transect. Plants were tallied by layer as described above. Shrubs and trees were generally clearly identifiable as individuals.

Species density is determined by extrapolating the number of individuals found on the combined plot area of 250 m² to a one acre area. Total density is based simply on the sum of all individuals of all species found on the plot. Relative density for a species is determined by dividing the number of individuals of that species by the total number of all individuals found on the combined plots.

Variable-circular sampling method for bird diversity: For each station, individuals were not only identified but distance from station determined in meters. Each station then was broken down into 20 meter distances ranging from 0 meters up to 150 meters (the largest distance any individuals were observed) with all individuals for each species placed into the appropriate column. A sample chart, used for the Arrowweed/Baccharis plot, is seen in Table 11. The point of inflection for each species, or distance that bird observations begin to decline, was then determined (indicated by a dotted line on Table 11). For each species, density was figured by summing the number of individuals within a circle of radius x (point of inflection), dividing by the area (πr^2) and converting it to a standard area (birds/hectare). An additional step was taken, by dividing the resulting number in half, for the Arrowweed/Baccharis plot only since all observations were confined to only a semi-circle area due to observation points being on the eastern edge of the park. This was necessary since the habitat was nearly

impenetrable and more thorough observations could be made from the raised canal road running along the eastern edge of the park

Using the Black phoebe as an example from Table 11, the point of inflection can be seen to be at 39 meters, indicated by the dotted line. This gave a total of 5 individuals for this species. The area of a circle with radius 39 meters is 4778 meters^2 , which is 0.48 hectare in size. Thus, the density of Black phoebe individuals per hectare would be 10. However, in this case, that number must be halved since the Arrowweed/Baccharis plot was only a semi-circle for the reasons described above. This gives a density per hectare of 5 Black phoebe individuals. The density of all bird species within the Arrowweed/baccharis habitat was then determined by adding up the density per hectare numbers for all species observed, giving a final density of 54 birds per hectare for the Arrowweed/Baccharis habitat.

Sample density worksheet

Distance (in meters) Area	0-19 1134 m2	20-39 4778 m2	40-59 10936 m2	60-79 19607 m2	80-99 30790 m2	100-149 69746 m2	Total # w/in inflection pt	Density per hectare
Western bluebird	1						1	5
Blue grosbeak	1	2					3	3
Red-winged blackbird	2	20	14		8	19	63	5
White-winged dove		1	5	3		1	9	3
Black phoebe	3	2					5	5
Western kingbird		4	1				4	4
Brown-headed cowbird		3			4		7	2
Black-capped gnatcatcher					1		1	1
Mourning dove	2	12	3	5		7	22	6
Verdin	3	7					10	10
Rough-winged swallow		2		20			22	6
Abert's towhee	1						1	1
Ground dove	1	2	1				3	3
Total								54

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End of Appendices