PRAIRIE CITY
STATE VEHICULAR RECREATION AREA

Draft
Environmental Impact Report

State Clearinghouse Number 2013062008

October 2015

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Prepared for:

California State Parks
Off-Highway Motor Vehicle Recreation Division

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TABLE OF CONTENTS

Section Page

SUMMARY S-1
- S.1 Project Overview S-1
- S.2 Environmental Effects Eliminated from Further Analysis S-2
- S.3 Summary of Impacts and Mitigation S-2
- S.4 Areas of Known Controversy S-3
- S.5 Issues to be Resolved S-3
- S.6 Summary of Alternatives Considered S-4

1 INTRODUCTION 1-1
- 1.1 Type, Purpose, and Intended Use of This Environmental Impact Report 1-1
- 1.2 General Plan Process and Public Participation 1-2
- 1.3 Comments Received on the Scope of the DEIR 1-4
- 1.4 Focus of the EIR 1-4
- 1.5 Environmental Review Process 1-5
- 1.6 Subsequent Environmental Review Process 1-5
- 1.7 DEIR Contents and Organization 1-6

2 PROJECT DESCRIPTION 2-1
- 2.1 Environmental Setting and Prairie City SVRA Use Characteristics 2-1
- 2.2 Project Background 2-11
- 2.3 Project Objectives 2-14
- 2.4 General Plan Components 2-15

3 ENVIRONMENTAL ANALYSIS 3-1
- 3.1 Aesthetics 3.1-1
- 3.2 Air Quality 3.2-1
- 3.3 Biotic Resources 3.3-1
- 3.4 Cultural Resources 3.4-1
- 3.5 Geology, Soils, Minerals, and Paleontological Resources 3.5-1
- 3.6 Greenhouse Gas Emissions 3.6-1
- 3.7 Hazards and Hazardous Materials 3.7-1
- 3.8 Hydrology and Water Quality 3.8-1
- 3.9 Noise 3.9-1
- 3.10 Public Services and Utilities 3.10-1
- 3.11 Transportation and Traffic 3.11-1

4 CUMULATIVE ANALYSIS 4-1
- 4.1 Introduction 4-1
- 4.2 Geographic Scope 4-1
- 4.3 Cumulative Forecasting Methodology 4-2
- 4.4 Cumulative Impact Analysis 4-4

5 OTHER CEQA-REQUIRED ANALYSIS 5-1
- 5.1 Environmental Effects Eliminated from Further Analysis 5-1
- 5.2 Unavoidable Significant Environmental Impacts 5-2

5.3 Significant Irreversible Environmental Changes 5-2
5.4 Growth-Inducing Impacts 5-4

6 ALTERNATIVES TO THE PROPOSED PROJECT 6-1
6.1 Alternatives Considered During the Planning Process 6-2
6.2 No-Project Alternative 6-7
6.3 Reduced Footprint Alternative 6-9
6.4 Identification of the Environmentally Superior Alternative 6-11

7 REFERENCES 7-1

8 REPORT CONTRIBUTORS 8-1

Appendices

Appendix A: Prairie City SVRA NOP and Public Comments
Appendix B: Air Quality and Greenhouse Gas Emission Calculations
Appendix C: Noise Fundamentals and Noise Modeling Results
Appendix D: Traffic Report

Figures

Figure 2-1. Vicinity Map 2-4
Figure 2-2. Prairie City SVRA Land Use 2-5
Figure 2-3. Planning Area 2-10
Figure 2-4. Use Areas 2-23
Figure 2-5. Potential Facilities 2-28
Figure 3.5-1. Soil Types in the Planning Area 3.5-3
Figure 3.6-1. 2012 California Greenhouse Gas Emissions by Sector 3.6-4
Figure 3.6-2. 2005 Sacramento County Greenhouse Gas Emissions by Sector 3.6-5
Figure 3.7-1. Aerojet Site—Relationship with All Operable Units and Existing and Proposed Extraction Wells 3.7-4
Figure 3.7-2. Aerojet Areas 39, 40, and 41 Relative to the Planning Area 3.7-5
Figure 3.7-3 Area 39 of the Former Aerojet Operations Facility, Located within the Planning Area 3.7-7
Figure 3.9-1. Noise Measurement Locations 3.9-3
Figure 3.9-2. Existing Modeled Traffic Noise Contours 3.9-4
Figure 3.11-1. Prairie City SVRA and Roadways in the Vicinity 3.11-2
Figure 3.11-2. Year 2030 Traffic Volumes, Weekday PM Peak Hour 3.11-12
Figure 3.11-3. Year 2030 Traffic Volumes, Saturday Midday Peak Hour 3.11-13
Figure 3.11-4. Year 2030 Traffic Volumes, Saturday Special Event 3.11-14
Figure 4-1. Cumulative Project Locations 4-7
Figure 6-1. Reduced Footprint Alternative 6-16

Tables

Table 1-1. Location of CEQA-Required Content 1-7
Table 2-1. Use Areas 2-19
Table 3.2-1. National and California Ambient Air Quality Standards 3.2-2
Table 3.2-2. California and National Attainment Statuses for the Sacramento Metropolitan Air Quality Management District 3.2-5
Table 3.2-3. Baseline (2013) and Projected (2030) Operational Emissions of Air Pollutants 3.2-17
Table 3.2-4. Alternate Baseline (2004) and Projected (2030) Operational Emissions of Air Pollutants 3.2-18
Table 3.4-1. Cultural Studies Conducted in or Adjacent to Prairie City SVRA 3.4-2
Table 3.4-2. Previously Recorded Cultural Resources within or Adjacent to Prairie City SVRA. 3.4-3
Table 3.5-1. Planning Area Soil Characteristics 3.5-5
Table 3.6-1. Summary of Operational Greenhouse Gas Emissions from Implementation of the Prairie City SVRA General Plan 3.6-7
Table 3.7-1. State Water Resources Control Board Spills, Leaks, Investigations, and Cleanup Program Cases within Prairie City SVRA 3.7-11
Table 3.9-1. Summary of Noise Measurements 3.9-5
Table 3.9-2. Summary of Existing (2013) Traffic Noise Levels Modeled in the Vicinity of the Planning Area 3.9-6
Table 3.9-3. Summary of Reference Noise Measurements 3.9-14
Table 3.9-4. Exterior Noise Levels (dBA) vs Distance (feet) 3.9-15

Table 3.9-5. Future (2030) Noise Levels Modeled for Traffic in the Vicinity of the Planning Area 3.9-19
Table 3.9-6. Typical Noise Levels Caused By Construction Equipment1 .... 3.9-21
Table 3.11-1. Year 2030 Traffic Volumes at Prairie City SVRA.... 3.11-15
Table 3.11-2. Year 2030 Intersection Levels of Service 3.11-16
Table 3.11-3. 2030 Roadway Levels of Service 3.11-16
Table 3.11-4. Year 2030 Intersection Levels of Service—Special Event 3.11-17
Table 3.11-5. Year 2030 Roadway Levels of Service—Special Event 3.11-18
Table 4-1. Geographic Scope of Cumulative Impacts 4-2
Table 4-2. Regional Growth Projections 4-3
Table 4-3. Cumulative Projects.... 4-5

ACRONYMS AND OTHER ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
4WD	four-wheel-drive
AB	Assembly Bill
Aerojet	Aerojet Rocketdyne
afy	acre-feet per year
ANSI	American National Standards Institute
ARB	California Air Resources Board
ATV	all-terrain vehicle
BACM	best available control measure
Basin Plan	*Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region*
bioswale	biofiltration swale
BMP	best management practice
BOU	Boundary Operable Unit
B.P.	Before Present
CAAQS	California ambient air quality standards
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CALVENO	California Vehicle Noise
CBC	California Building Standards Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
Central Basin	Central Sacramento County Groundwater Basin
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey

CHP	California Highway Patrol
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide–equivalency
Connector	Capital SouthEast Connector Project
Connector JPA	Capital SouthEast Connector Project Joint Powers Authority
County General Plan	*Sacramento County General Plan of 2005–2030*
CR	Cultural Resources Management (goals and guidelines)
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
dB/DD	A-weighted decibels per doubling of distance
DEIR	draft environmental impact report
diesel PM	particulate matter exhaust from diesel-fueled engines
DOC	California Department of Conservation
DTSC	California Department of Toxic Substances Control
EB	eastbound
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIR	final environmental impact report
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Noise
FPASP	*Folsom Plan Area Specific Plan*
FTA	Federal Transit Administration
General Plan	*Prairie City State Vehicular Recreation Area General Plan*
Geo	Geology (goals and guidelines)
GHG	greenhouse gas
GWP	global warming potential
HHERA	human health and ecological risk assessment

HMS	Habitat Monitoring System
IE	Interpretive and Educational (goals and guidelines)
lb/day	pounds per day
LDL	Larson-Davis Laboratories
L_{dn}	day-night average noise level
L_{eq}	energy-equivalent noise level (average of the sound energy occurring over a specified time period)
L_{max}	maximum noise level (highest instantaneous sound level measured during a specified period)
LOS	level of service
mg/m^3	milligrams per cubic meter
MLD	most likely descendant
mph	miles per hour
MT	metric ton(s)
NA	not applicable
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NASA	National Aeronautics and Space Administration
NB	northbound
NCMWC	Natomas Central Mutual Water Company
NDMA	n-nitrosodimethylamine
ng/L	nanograms per liter
NOP	notice of preparation
NORCOM	Northern Communications Center
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRM	Natural Resource Management (goals and guidelines)
OHMVR	Off-Highway Motor Vehicle Recreation
OHMVR Soil Standard	*2008 Soil Conservation Standard and Guidelines*
OHV	off-highway vehicle
OHV BMP Manual	*OHV BMP Manual for Erosion and Sediment Control*
OM	Operations and Maintenance (goals and guidelines)

OSHA	Occupational Safety and Health Administration
OU	operable unit
OU-5	Perimeter Groundwater Operable Unit
PM	particulate matter
$PM_{2.5}$	fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less
PM_{10}	respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less
ppb	parts per billion
ppm	parts per million
Prairie City SVRA General Plan	*Prairie City State Vehicular Recreation Area General Plan*
PRC	California Public Resources Code
RCRA	Resource Conservation and Recovery Act
RD/RA	remedial design and remedial action
RIS	remedial investigation supplement
ROD	record of decision
ROG	reactive organic gases
ROV	recreational off-highway vehicle
RV2013	Recreational Vehicle 2013
RWQCB	Regional Water Quality Control Board
SACMET	Sacramento Metropolitan Travel Demand Model
SACOG	Sacramento Area Council of Governments
Scoping Plan	Climate Change Scoping Plan
SCWA	Sacramento County Water Agency
sec	seconds
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMFD	Sacramento Metropolitan Fire District
SMUD	Sacramento Municipal Utility District
SO_2	sulfur dioxide
SPPO	State Parks peace officer
SSBMI	Shingle Springs Band of Miwok Indians
SSHCP	*South Sacramento Habitat Conservation Plan*
State Parks	California Department of Parks and Recreation

SVAB	Sacramento Valley Air Basin
SVRA	State Vehicular Recreation Area
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCE	trichloroethylene
TT	tourist trophy
U.S. 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
UTV	utility task vehicle
V/C	volume-to-capacity ratio
VELB	valley elderberry longhorn beetle
VEO	Visitor Experience and Opportunities (goals and guidelines)
VM	Visitor Management (goals and guidelines)
VOC	volatile organic compound
WB	westbound

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SUMMARY

This summary of the draft environmental impact report (DEIR) for the Prairie City State Vehicular Recreation Area (SVRA) General Plan (Prairie City SVRA General Plan or the General Plan) is provided in accordance with Section 15123 of the California Environmental Quality Act (CEQA) Guidelines. Section 15123 specifies that an environmental impact report (EIR) is to contain a brief summary of the proposed project and its consequences, presented in clear and simple language.

Implementing the Prairie City SVRA General Plan would not result in significant impacts on the environment. The summary briefly describes the project, and then identifies alternatives that would minimize several less-than-significant impacts; 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.

S.1 PROJECT OVERVIEW

Prairie City SVRA is a showcase for off-highway vehicle (OHV) recreation. The SVRA offers enthusiasts of all ages a variety of terrain types and trails, an extensive selection of tracks, and an array of OHV-related facilities and special events. OHV recreational opportunities include trails and tracks for motorcycles, all-terrain vehicles (ATVs), four-wheel-drive vehicles, recreational OHVs, karts, and quarter midgets. Prairie City SVRA hosts numerous special events throughout the year including the Hangtown Motocross Classic, AMP Dodge Amateur MX National, Nor Cal Rock Racing and Valley Off Road Racing Association races, and the Prairie City Mountain Bike Race Series. Existing facilities include multiple restrooms, day-use sites for picnicking and staging, and recreational facilities that include OHV trails, the Prairie City Motocross Track, a motocross practice track, ATV practice track, 70cc beginner kids' track and 110cc intermediate kids' track, quarter midget track, go-kart track, mini MX track, 4x4 and obstacle area, the Environmental Training Center, and a concession store.

All units operated by the California Department of Parks and Recreation (State Parks) must have a general plan prepared before developing new facilities that may result in the permanent commitment of resources. 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. A master plan for Prairie City SVRA was adopted in 1991; however, the Prairie City SVRA General Plan outlined in this DEIR is this unit's first general plan.

The project considered in this DEIR is the implementation of the Prairie City SVRA General Plan. The General Plan is a guidance document intended for use over many years, and it outlines goals and guidelines that apply to the entire SVRA. The goals and guidelines address existing issues and provide ongoing management guidance that can be implemented to achieve the SVRA's long-term vision:

> Prairie City State Vehicular Recreation Area (SVRA) will provide high-quality off-highway vehicle (OHV) recreation and other recreational opportunities, while protecting natural and cultural resources. Prairie City SVRA will develop and maintain a family-oriented model of an urban OHV recreation area that is flexible, responsive, and provides a high level of quality customer service. Opportunities will be provided for family and community outreach through environmental awareness, environmental stewardship, and safety training programs at this multiuse OHV recreation area.

In addition to long-range planning, the General Plan includes multiple improvements to SVRA facilities. Proposed improvements include a visitor center, an overnight camping area, enhanced spectator facilities, improved circulation, a multiuse special-events area, and relocation of the ranger station, Twin Cities District office, kart track, and dirt oval track (currently known as the mini MX track) from their current locations. The General Plan also includes five use areas, each with different characteristics, activities or allowable uses, and resources and related management mandates.

The five Prairie City SVRA use areas are the developed use area, distributed OHV recreation use area, route and trails system use area, stormwater management use area, and vernal pool management use area. These use areas are described in Chapter 2, “Project Description,” of the DEIR and Chapter 4, “The Plan,” of the General Plan.

The Prairie City SVRA General Plan provides a description of much of the physical and regulatory setting and the project description used for the CEQA analysis in this DEIR. General Plan Chapter 2, “Existing Conditions,” describes the geographical, physical, and management setting, including resource conditions and planning influences. General Plan Chapter 4 identifies proposed use areas and management goals and guidelines. These elements combine to serve as the project description used for this CEQA analysis.

S.2 ENVIRONMENTAL EFFECTS ELIMINATED FROM FURTHER ANALYSIS

The topics of agriculture and forestry resources, land use, population and housing, and recreation were eliminated from full analysis in the DEIR because no potential exists for significant environmental effects related to these issues to result from implementation of the Prairie City SVRA General Plan. See Chapter 5, “Other CEQA-Required Analysis,” for additional discussion.

S.3 SUMMARY OF IMPACTS AND MITIGATION

This DEIR provides a detailed analysis of the potentially significant environmental impacts of the Prairie City SVRA General Plan. The environmental analysis found that with incorporation of project design features, implementation of goals and guidelines as directed by the General Plan, and adherence to regulatory requirements (e.g., Off-Highway Motor Vehicle Recreation [OHMVR] Division requirements and guidelines, regulatory agency requirements, and state and federal regulations), implementation of the General Plan would result in less-than-significant environmental impacts in all of the issue areas analyzed. These issue areas include:

- Aesthetics
- Air quality
- Biotic resources
- Cultural resources
- Geology, soils, minerals, and paleontological resources
- Greenhouse gas emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Noise
- Public services and utilities
- Transportation and traffic

No mitigation measures are required for the impacts identified for these resource areas because the impacts were found to be less than significant.

S.4 AREAS OF KNOWN CONTROVERSY

The following areas of known controversy were identified for the Prairie City SVRA General Plan and were taken into consideration during development of the General Plan goals and guidelines:

- Maximizing of OHV recreation acreage while protecting and preserving sensitive biological resources

- Recent and planned roadway improvements along White Road and access to the SVRA

- Accommodation of a large number of spectators and heavy traffic volumes generated by special events

- Stormwater management and water quality

- Growth of nearby cities and changes in land uses near the SVRA from industrial and agriculture to residential and commercial, and associated implications for the SVRA

S.5 ISSUES TO BE RESOLVED

The OHMVR Division of State Parks is the CEQA lead agency for this project. The lead agency must consider SVRA users' needs and desires, long-term planning, and the OHMVR Division's mission when determining the appropriate level of intensity of OHV use at Prairie City SVRA. It will be important for the OHMVR Division's decision makers to resolve the need for balance between developed, distributed

OHV recreation, and route and trail system use areas throughout the SVRA, and restrictions in some areas to protect on-site natural resources and water quality.

S.6 SUMMARY OF ALTERNATIVES CONSIDERED

CEQA requires an analysis of a range of potential alternatives to the proposed project that would reduce any significant impacts. However, as determined through analysis in this DEIR, implementation of the proposed project (the Prairie City SVRA General Plan) would cause no significant impacts. Therefore, no alternatives exist that could reduce or eliminate significant environmental impacts. However, the Reduced Footprint Alternative has the potential to further minimize several less-than-significant impacts.

The alternatives analysis evaluates each issue area compared with the proposed project. The following two project alternatives are considered in the alternatives analysis:

- No-Project Alternative
- Reduced Footprint Alternative

Under the No-Project Alternative, the portion of Prairie City SVRA currently open to the public would remain at 836 acres. Of this total, approximately 644 acres would be available for OHV recreation, 35 acres would be used as a buffer area to protect views and scenic quality along Scott Road, and approximately 160 acres would serve as an ecological reserve area. OHV use and social gatherings would continue in the portion of the SVRA currently open to the public. The 211-acre Yost property would not be available for OHV recreation and would remain in the current condition, and closed to the public. Use of the Barton Ranch acquisition area would be the same under the proposed General Plan or the No-Project Alternative; the property would continue to be used for water quality management purposes and would not be open to OHV recreation.

Current operation and management patterns in the existing SVRA, on the Yost property, and in the Barton Ranch acquisition area, including resource management and monitoring activities, would likely continue under the No-Project Alternative. The two new facilities proposed for the Yost property in the General Plan—the relocated district office and the multiuse special-events area—and the route and trail system use area would not be developed. Under the No-Project Alternative, the only activities on the Yost property and in the Barton Ranch acquisition area would be those designed to improve the SVRA's environmental and water quality conditions, meet regulatory agency requirements, and keep up with maintenance necessary to maintain safe conditions.

In the Reduced Footprint Alternative, the Yost property would be closed to OHV recreation to minimize or avoid impacts on the sensitive natural resources that occur on the property. The route and trail system use area would be restricted to a smaller area in the portion of the SVRA that is currently open to the public. Two potential facilities—the Twin Cities District Office and the multiuse special-events area—

would not be constructed on the Yost property. The district office would remain in its current location in the southwest portion of the SVRA and the multiuse special-events area would not be constructed in the SVRA. Development of all other potential new facilities identified in Chapter 2, “Project Description,” would still occur. Allowable uses on the Yost property would be limited to nonmotorized recreational opportunities like picnicking, wildlife viewing, and interpretative hikes. All goals and guidelines would be implemented as described in the General Plan. The Reduced Footprint Alternative is considered the environmentally superior alternative; however, this alternative does not meet the project objectives.

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1 INTRODUCTION

This draft environmental impact report (DEIR) evaluates the environmental effects of implementing the *Prairie City State Vehicular Recreation Area General Plan* (Prairie City SVRA General Plan or General Plan). The DEIR is intended to inform decision makers and the public about environmental consequences of implementing the General Plan; it includes a description of changes proposed in the preferred concept. The DEIR was prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.). The California Department of Parks and Recreation (State Parks), Off-Highway Motor Vehicle Recreation (OHMVR) Division, is the CEQA lead agency for this project.

This introductory chapter provides an overview of the environmental review process required by CEQA. The chapter also describes the background of the proposed project (the Prairie City SVRA General Plan), agency roles and responsibilities, and the contents and organization of this DEIR.

1.1 TYPE, PURPOSE, AND INTENDED USE OF THIS ENVIRONMENTAL IMPACT REPORT

CEQA states that the purpose of an environmental impact report (EIR) 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 state and local governmental agencies to consider the environmental impacts of projects over which they have discretionary authority and to balance a proposed project's benefits against its unavoidable environmental consequences. If the agency identifies environmental impacts as significant and unavoidable, it may still approve the proposed project if the agency believes that social, economic, or other benefits would outweigh the unavoidable impacts.

This DEIR was prepared by the OHMVR Division to assess the potential environmental impacts of approving and implementing the Prairie City SVRA General Plan. The DEIR addresses the project's potentially significant adverse effects on the physical environment, to the extent that such effects are reasonably foreseeable. The Prairie City SVRA General Plan is a planning document that provides a preferred concept for site use (General Plan Figure 4-2, "Potential Facilities"), including distinct use areas, and a broad set of goals and guidelines for future management and development, rather than specific and detailed projects. Thus, a program EIR was determined to be the appropriate CEQA document.

According to the CEQA Guidelines (Section 15168), a program EIR may be prepared for 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 the issuance of rules, regulations, or plans.
A program EIR allows a public agency to consider broad policy alternatives and programwide

mitigation measures during the early planning stages. Program-level EIRs and project-level EIRs have the same required contents. However, the levels of detail and analysis in the two types of documents differ because a program EIR analyzes a general conceptual design and location for the proposed alternatives, rather than providing a detailed analysis for a specific action (CEQA Guidelines, Section 15146).

This DEIR provides a first-tier analysis of the environmental effects of implementing the Prairie City SVRA General Plan. Future projects associated with the General Plan will be reviewed in light of the information in this DEIR, in compliance with Section 15152 of the CEQA Guidelines. If the OHMVR Division finds that a subsequent project would not result in new effects or require new mitigation measures, it can approve the activity as being within the scope of this DEIR. Should new effects not addressed in this DEIR be identified, the OHMVR Division would prepare an appropriate CEQA compliance document. That subsequent document would tier from this DEIR by incorporating the general discussions of the broader EIR by reference and focusing the analysis solely on the issues specific to the later project.

This DEIR will be used by lead, responsible, and trustee agencies that may have review authority over the project. The following agencies are among those expected to use the DEIR as a reference for future actions:

- State Parks
- California Department of Fish and Wildlife
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- Central Valley Regional Water Quality Control Board
- Sacramento County
- Sacramento Metropolitan Air Quality Management District

The General Plan must be approved by the Off-Highway Motor Vehicle Recreation Commission and the EIR must be certified by the OHMVR Division before the OHMVR Division may implement the Prairie City SVRA General Plan.

1.2 GENERAL PLAN PROCESS AND PUBLIC PARTICIPATION

General plans are broad-based policy documents that establish long-range management visions, goals, and guidelines and provide direction for future types of improvements, services, and programs. Developing general plans allows agencies to assess resource stewardship, facility development and management, and education and interpretive programs for the public. A general plan provides guidelines for managing and designating future land uses, which includes acquiring land and developing the facilities required to accommodate expected visitation and administrative needs.

The Prairie City SVRA General Plan provides a comprehensive framework to guide long-term development, ongoing management, and public use at Prairie City SVRA. The General Plan must remain flexible, general in scope, and consistent in its vision for the SVRA's future; it must accommodate changing conditions; and it must enable State Parks to solve future management problems.

Public and stakeholder input is important to the State Parks general plan process. State Parks seeks input at the outset and throughout the planning process; that input is essential to developing a general plan's recommendations, goals, and guidelines. An extensive public participation program was implemented as the Prairie City SVRA General Plan was developed. The goal of this outreach effort was to identify the community's ideas and desires for future management and use of Prairie City SVRA, and to understand concerns about the SVRA's future. The public participation program involved conducting an online survey; hosting introductory meetings with stakeholders and holding public meetings; providing site visits at Prairie City SVRA; distributing a fact sheet, posting information and activities on a project website, and emailing notices to interested parties; attending events to alert visitors and off-highway vehicle (OHV) recreationists about the Prairie City SVRA General Plan; conducting six public workshops; and hosting three online workshops. (See http://www.prairiecitygeneralplan.com/meetings.)

During General Plan development, State Parks provided the following informational materials and opportunities for the public and stakeholders to participate and offer their input:

- *Fact sheet (introduction to the preliminary General Plan):* June 11, 2013
- *Scoping/Public Workshop 1:* June 18, 2013
- *Online Survey:* July 1–October 31, 2013
- *Online Survey Key Findings:* January 2014
- *Concept Alternatives Public Workshops 2 & 3:* October 13 and November 2, 2013
- *Online Exercise for Concept Alternatives:* October 15, 2013–January 15, 2014
- *Concept Alternatives Review Exercise Summary & Key Findings:* February 2014
- *Draft Preferred Concept Public Workshops 4 & 5:* April 27 and May 31, 2014
- *Online Exercise for Draft Preferred Concept:* April 28–June 3, 2014
- *Draft Preferred Concept Review Exercise Summary & Key Findings:* July 2014
- *Revised Draft Preferred Concept Public Workshop 6:* October 12, 2014
- *Online Exercise for Revised Draft Preferred Concept:* September 30–October 31, 2014
- *Revised Draft Preferred Concept Comment Card Summary & Key Findings:* December 2014

All materials developed in support of the public participation program are available on the Prairie City SVRA General Plan project website, http://prairiecitygeneralplan.com/.

1.3 COMMENTS RECEIVED ON THE SCOPE OF THE DEIR

As required by Section 15082 of the CEQA Guidelines, the OHMVR Division issued a notice of preparation (NOP) of an EIR on June 6, 2013 (State Clearinghouse Number 2013062008). The NOP's purpose was to identify agency and public concerns about potential impacts of the Prairie City SVRA General Plan and to solicit comments on the scope of the DEIR. No written or verbal comments were received during the 30-day public review period for the NOP.

Subsequent to the NOP public comment period, a comment letter was received from the District 36 Motorcycle Sports Committee, Inc. on January 16, 2014, and another comment letter was received from the Central Valley Regional Water Quality Control Board on August 12, 2014. In addition, a public scoping meeting was held during the public workshop on June 18, 2013. Two written comment cards were received during the public scoping meeting. A summary of comments received is included in Appendix A of this document.

1.4 FOCUS OF THE EIR

In compliance with Section 15063 of the CEQA Guidelines, the scope of the analysis in this DEIR was informed by the results of public workshops conducted and comments received during the NOP comment period. Chapter 2, "Environmental Analysis," of this DEIR addresses environmental issues known to relate to the site and issues identified as being of community concern, as expressed at the workshops and during project scoping. Those issues are as follows:

- Aesthetics
- Air quality
- Biotic resources
- Cultural resources
- Geology, soils, minerals, and paleontological resources
- Greenhouse gas emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Noise
- Public services and utilities
- Transportation and traffic

Agriculture and forestry resources, land use, population and housing, and recreation are addressed in Chapter 5, "Other CEQA-Required Analysis."

1.5 ENVIRONMENTAL REVIEW PROCESS

As described in Section 1.3, State Parks issued an NOP informing agencies and the public that this DEIR would be prepared and soliciting input on the scope of issues to be addressed. The comments received were considered while this DEIR was prepared.

The OHMVR Division has filed a notice of completion with the State Clearinghouse, part of the Governor's Office of Planning and Research, indicating that this DEIR is complete and available for review. In addition, a notice of availability of this DEIR has been filed with the State Clearinghouse; circulated to persons, organizations, and agencies on the project mailing list; and posted in local newspapers. The notice of availability describes the project and project location, identifies significant environmental impacts, specifies the review period, and identifies where this DEIR and accompanying General Plan are available for review.

Agencies and individuals are invited to comment on the information presented in this DEIR. Comments should address the DEIR's accuracy and completeness on environmental issues. Where possible, respondents should endeavor to provide information they feel is lacking, or should indicate where the information may be found.

After a 45-day public comment period, the OHMVR Division will review and consider all comments received on the project's environmental impacts. If necessary, this DEIR analysis will be revised or expanded to address comments received during the public comment period. The revised DEIR and all responses to comments will be incorporated into a final EIR (FEIR).

The OHMVR Division will then consider certifying the FEIR. FEIR certification is not project approval or adoption, but a lead agency action finding that the environmental analysis is adequate and that CEQA obligations have been fulfilled. The OHMVR Commission holds authority to approve all OHMVR Division general plans and EIRs. This commission will determine whether to accept the certified EIR as an FEIR under CEQA Guidelines Section 15166 and 15168 and adopt the Prairie City SVRA General Plan as a general plan under PRC Section 5002.2.

1.6 SUBSEQUENT ENVIRONMENTAL REVIEW PROCESS

This DEIR evaluates the goals, guidelines, proposed use areas, uses, and facilities described in the Prairie City SVRA General Plan for their potential effects on the environment. Also analyzed are potential impacts of actions that may be taken should the General Plan be adopted. The environmental analysis has been conducted concurrent with General Plan development. Impact minimization measures have been incorporated into the General Plan wherever possible to help ensure that planned actions, including those to be implemented in the future, would not result in significant environmental impacts.

Therefore, the CEQA analysis detailed in this General Plan DEIR, which accompanies the Prairie City SVRA General Plan, is intended to be adequate for future projects that would be implemented in a manner consistent with the General Plan's goals and guidelines herein and require no further mitigation. Some actions described in the General Plan may require additional CEQA analysis documentation after project details are known. According to Section 15168 of the CEQA Guidelines, all future projects that may be implemented if the Prairie City SVRA General Plan is adopted must undergo CEQA review, in light of the information in the General Plan EIR, to determine whether additional CEQA documentation is necessary. The type of additional documentation completed would be determined based on the provisions contained in CEQA Guidelines Sections 15162–15164. When planning to implement future projects that require additional environmental review, the OHMVR Division may refer to this General Plan DEIR as a starting point for a "tiered CEQA analysis," in accordance with Sections 15152 and 15168 of the CEQA Guidelines.

1.7 DEIR CONTENTS AND ORGANIZATION

This DEIR is organized into the following chapters:

Summary: A summary is included at the beginning of this document to explain the conclusions of the DEIR's analyses. Also addressed in the summary are issues of known controversy, environmental issues to be resolved, and alternatives considered.

Chapter 1, "Introduction," provides an overview of the DEIR's purpose and the CEQA process, briefly describes the OHMVR Division's planning and public outreach process, summarizes comments received on the scope of this DEIR, and describes subsequent environmental review that may be required in the future.

Chapter 2, "Project Description," discusses the environmental setting, past and current uses of Prairie City SVRA, project objectives, General Plan components included for analysis in this DEIR, the regional planning context, and intended uses of this DEIR.

Chapter 3, "Environmental Analysis," evaluates the potential environmental impacts of the Prairie City SVRA General Plan. Chapter 3 also presents the General Plan goals and guidelines that would reduce those potential impacts.

Chapter 4, "Cumulative Analysis," analyzes the potential cumulative impacts of the Prairie City SVRA General Plan in combination with past, present, and future projects.

Chapter 5, "Other CEQA-Required Analysis," analyzes environmental effects eliminated from future analysis, unavoidable significant environmental effects, significant irreversible environmental changes, and growth-inducing impacts.

Chapter 6, "Alternatives to the Proposed Project," considers a reasonable range of potentially feasible alternatives to the Prairie City SVRA General Plan that could avoid or substantially lessen any of the effects of the project identified in Chapter 3. Chapter 6 also analyzes the No-Project Alternative and identifies the environmentally superior alternative, as required by CEQA.

Chapter 7, "References," lists all references used during the preparation of this DEIR, as well as citations for personal communications.

Chapter 8, "Report Contributors," lists all DEIR preparers and contributors.

Table 1-1 lists the locations of CEQA-required content in this DEIR.

Table 1-1. Location of CEQA-Required Content

CEQA Guidelines Section and Required Content	Location in DEIR
15122: Table of Contents or Index	Beginning of this document
15123: Summary	EIR Summary, following the Table of Contents
15124: Project Description	Chapter 2, in Section 2.3, "Project Objectives," and Section 2.4, "General Plan Components" Chapter 1, "Introduction" (information about the Prairie City SVRA General Plan process)
15125: Environmental Setting	Chapter 2, in Section 2.1, "Environmental Setting," and "Existing Setting" within each topic area
15126: Consideration and Discussion of Environmental Impacts	Chapter 3, "Environmental Analysis"
15126(a): Significant Environmental Effects of the Proposed Project	EIR Summary Chapter 3, "Environmental Analysis"; within each topic area as "Summary of Significant Impacts"
15126(b): Significant Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented	Chapter 5, in Section 5.2, "Unavoidable Significant Environmental Impacts"
15126(c): Significant Irreversible Environmental Changes Which Would be Involved in the Proposed Project Should it be Implemented	Chapter 5, in Section 5.3, "Significant Irreversible Environmental Changes"
15126(d): Growth-Inducing Impact of Proposed Project	Chapter 5, in Section 5.4, "Growth-Inducing Impacts"
15126(e): The Mitigation Measures Proposed to Minimize the Significant Effects	Chapter 3, "Environmental Analysis"; within each topic area as "Mitigation Measures" EIR Summary, in Section S.3, "Summary of Impacts and Mitigation"
15126(f): Alternatives to the Proposed Project	Chapter 6, "Alternatives to the Proposed Project" EIR Summary, in Section S.6, "Summary of Alternatives Considered"
15127: Limitations on Discussion of Environmental Impact	Chapter 5, in Section 5.3, "Significant Irreversible Environmental Changes"
15128: Effects Not Found to be Significant	Chapter 6, in Section 6.1, "Environmental Effects Eliminated from Further Analysis"

Table 1-1. Location of CEQA-Required Content

CEQA Guidelines Section and Required Content	Location in DEIR
15129: Organizations and Persons Consulted	Chapter 1, in Section 1.2, “General Plan Process and Public Participation” Chapter 3, in Section 3.4, “Cultural Resources” (“Native American Consultation” section) Chapter 7, “References” Chapter 8, “Report Contributors”
15130: Discussion of Cumulative Impacts	Chapter 4, “Cumulative Analysis”
15131: Economic and Social Effects (optional topic)	Throughout the document under discussions of recreation and visitor experience

Source: Data compiled by AECOM in 2015

2 PROJECT DESCRIPTION

This chapter provides a description of the Prairie City State Vehicular Recreation Area (SVRA) General Plan. As described in Section 15124 of the California Environmental Quality Act (CEQA) Guidelines, a complete project description must contain:

- the location and boundaries of the proposed project;
- a statement of objectives sought by the proposed project;
- a general description of the project's technical, economic, and environmental characteristics; and
- a statement briefly describing the intended uses of the environmental impact report (EIR).

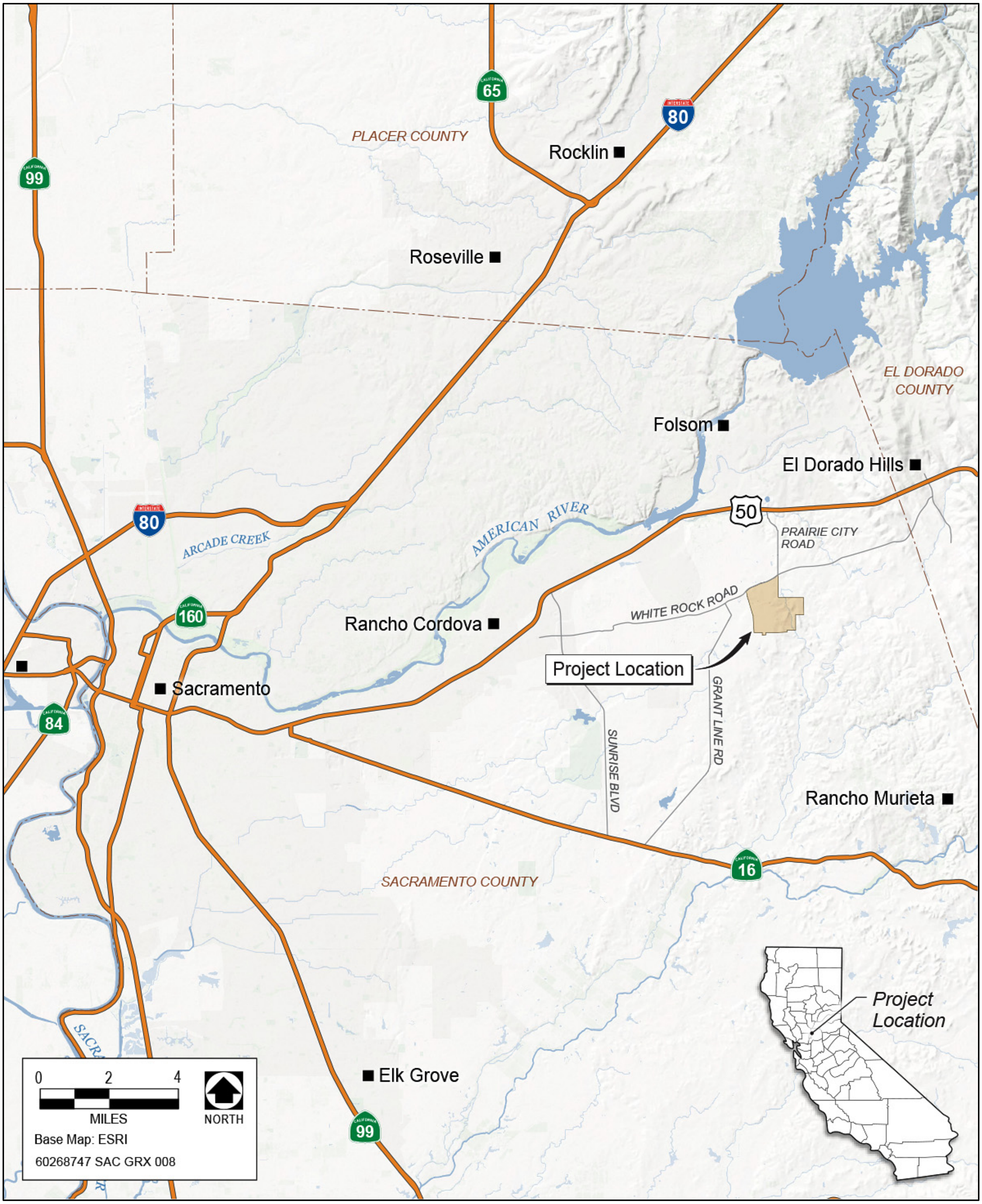
By legal mandate (California Public Resources Code [PRC] Section 5002.2), all units operated by State Parks must have a general plan prepared before developing new facilities that may permanently commit a resource to a particular use. General plans are broad-based policy documents that establish long-range visions and goals and provide direction on future types of improvements, services, and programs. General plans are intended to be used for many years. Therefore, a general plan establishes a decision-making framework consistent with the established vision, but it also is flexible enough to allow for changing conditions over time.

The Prairie City SVRA General Plan provides a description of much of the physical and regulatory setting and the project description used for the CEQA analysis in this draft EIR (DEIR). Chapter 4, "The Plan," of the General Plan identifies potential facilities, proposed use areas, and management goals and guidelines. These elements combine to serve as the project description used for this CEQA analysis. General Plan Chapter 4 is incorporated by reference herein, consistent with Section 15150 of the CEQA Guidelines. A summary of the project description is provided below.

2.1 ENVIRONMENTAL SETTING AND PRAIRIE CITY SVRA USE CHARACTERISTICS

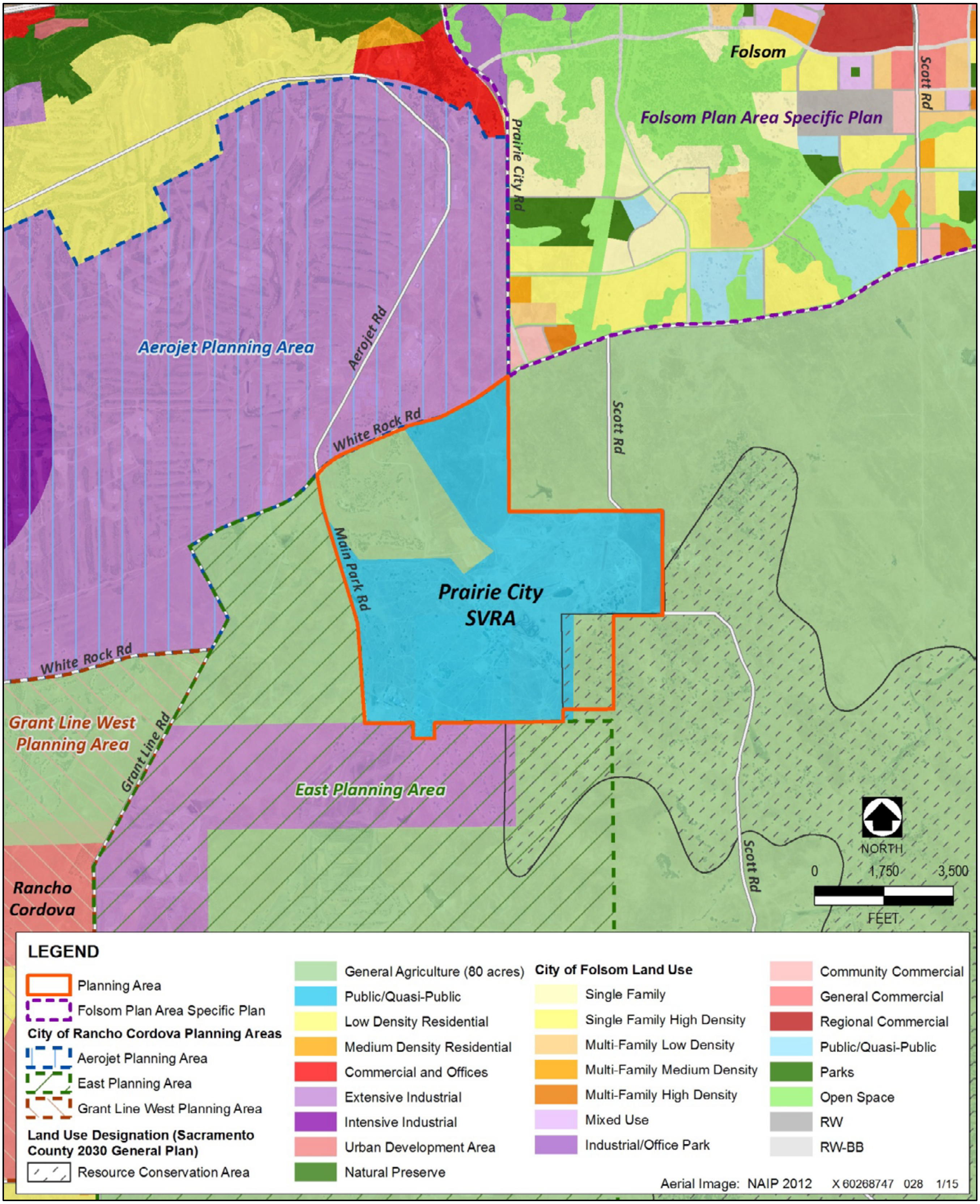
This section provides an overview of the general character of Prairie City SVRA and the vicinity. This description includes the SVRA's location, on-site activities, general environmental characteristics and resources, and surrounding development. Please see Chapter 2 of the General Plan for additional detail regarding current conditions and uses at Prairie City SVRA.

Figure 2-1 shows the regional location of Prairie City SVRA. The SVRA is located in unincorporated Sacramento County, approximately 20 miles east of downtown Sacramento, 3 miles south of U.S. Highway 50, and 1.5 miles northeast of the Rancho Cordova city limits. The *Rancho Cordova General Plan*, adopted in 2006, includes two planning areas adjacent to the SVRA. The SVRA lies south of White Rock Road between Sunrise Boulevard and Prairie City Road, and is just southwest of the City of Folsom's *Folsom Plan Area Specific Plan* (FPASP) area. Figure 2-2 shows the surrounding



Source: Data compiled by AECOM in 2014

Figure 2-1. Vicinity Map



Sources: City of Rancho Cordova 2006; Sacramento County Community Planning & Development Department 2011; AECOM 2009

Figure 2-2. Prairie City SVRA Land Use

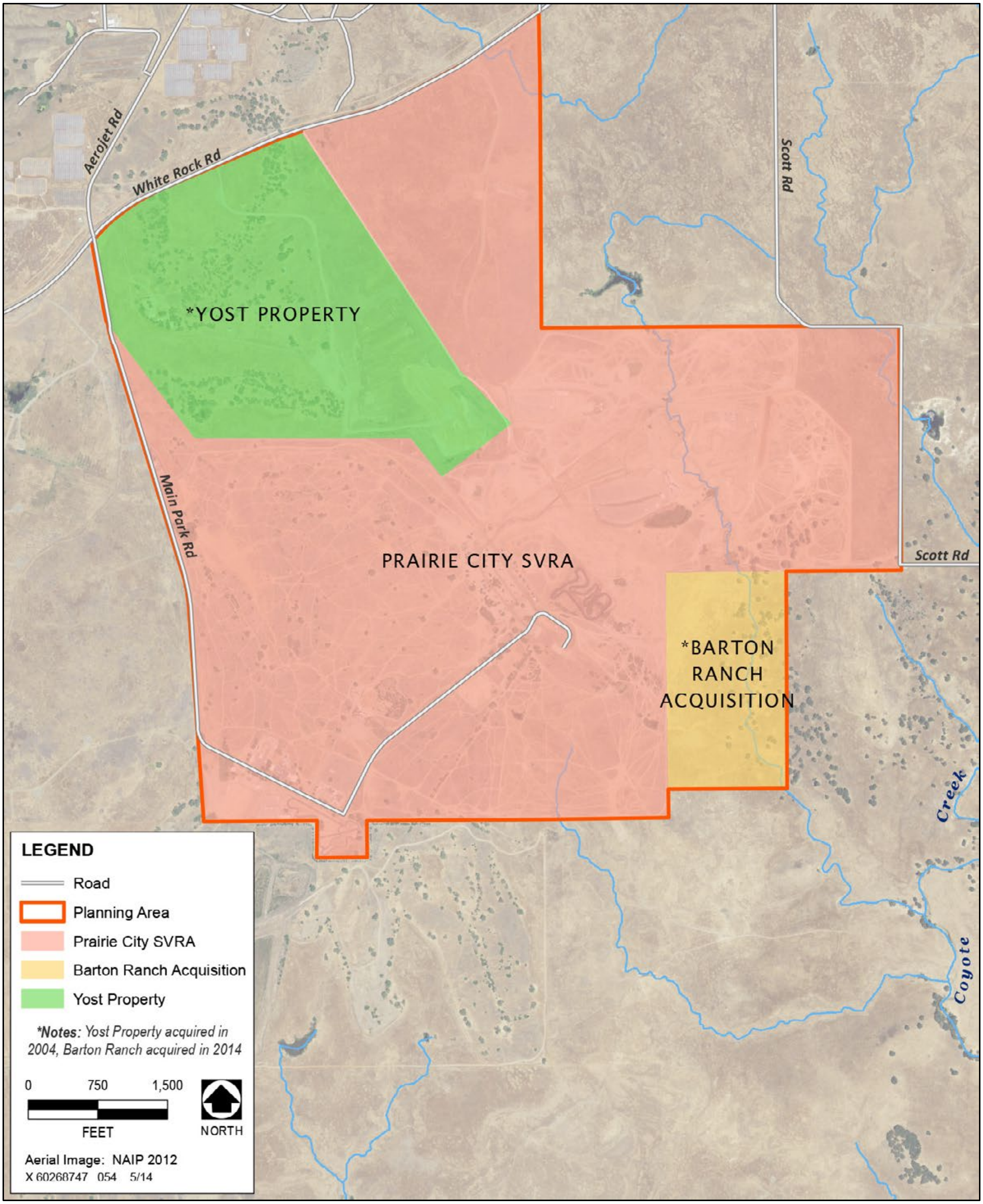
land use designations. Prairie City SVRA is bounded mainly by private land owned by Aerojet Rocketdyne (Aerojet), Teichert, and Barton Ranch. See General Plan Section 2.1, “Regional Land Use and Facilities,” for additional regional land use information.

Aerojet owns the approximately 8,000-acre property west and north of the SVRA, and uses the property for industrial operations and testing of aerospace and defense products. Also present is a ground-mounted, 6-megawatt solar electric system that is the largest single-site photovoltaic solar-electric generating facility in California. A portion of the property is leased for use as rangeland (Aerojet Rocketdyne 2010a, 2010b:2-3). In 2015, Aerojet sold 703 acres to WestLand Capital Partners for residential and commercial development (Wiese 2015). The Teichert-owned property located east and south of the SVRA is used for mining, and the Barton Ranch property, also located to the east and south, is used primarily for cattle grazing.

Most of the western portion of Prairie City SVRA is covered with piles of rock cobbles or dredge tailings deposited during hydraulic gold mining operations. The dredge tailings area is characterized by grassland and scattered cottonwood trees. Prairie City SVRA contains habitat for several special-status species. In addition, multiple special-status species and locally unique species have been found on or near the SVRA property. Rolling hills and a vegetative cover of grassland and oak woodland occupy the eastern portion of the SVRA.

Three intermittent streams flow southeasterly through the SVRA into Coyote Creek. Coyote Creek flows into Carson Creek, which is a tributary to Deer Creek, a tributary to the Cosumnes River southeast of the planning area. One of the intermittent streams traverses the easternmost portion of the SVRA at Scott Road, one crosses the eastern portion of the riding area and the Barton Ranch acquisition area, and the third originates in the south-central portion of the riding area near the southern boundary of the SVRA before flowing off-site. A fourth intermittent stream runs northwesterly through the northeast corner of the SVRA. This last intermittent stream is a tributary to Buffalo Creek, which connects to the American River. Local surface water features in the planning area include seasonal drainages (swales, human-made trench cuts, and ephemeral drainages), ponds, and vernal pools (General Plan Figure 2-12, “Existing Water Features”). Wetlands and other waters mapped in the planning area, including vernal pools, marsh/palustrine habitat, and the four intermittent streams tributary to Coyote Creek and Buffalo Creek, are potential waters of the United States subject to U.S. Army Corps of Engineers jurisdiction under Section 404 of the federal Clean Water Act (CWA). Therefore, they qualify as sensitive habitats.

The primary access to Prairie City SVRA is from White Rock Road, which can be reached via either the Sunrise Boulevard exit or the Prairie City Road exit from U.S. Highway 50. The planning area (Figure 2-3), also referred to as “Prairie City SVRA” or “the SVRA” in this DEIR, consists of 1,115 acres: the existing SVRA encompassing 836 acres, plus 211 acres purchased in 2004 (the Yost property) and 68 acres purchased in 2014 (the Barton Ranch acquisition). Approximately 644 acres of the existing 836 acres is currently used for off-highway vehicle (OHV) recreation. Prairie City SVRA has various easements for utility providers and a haul road easement along the southern boundary of the



Source: Data compiled by AECOM in 2013

Figure 2-3. Planning Area

SVRA to support future mining operations on nearby properties (General Plan Figure 2-8, “Easements”).

The Yost property, located in the northern portion of the SVRA, is currently not open for public use (California State Public Works Board 2004). Three caretaker residences owned by the Off-Highway Motor Vehicle Recreation (OHMVR) Division of State Parks are located on the Yost property and are occupied by OHVMR Division staff members and their families (State Parks 2012:26). An area of 68 acres in the southeast corner of the SVRA property was acquired from Barton Ranch in 2014 as a buffer zone to address water quality issues on Coyote Creek (State Parks 2012).

Prairie City SVRA is a showcase for OHV recreation. The SVRA offers enthusiasts of all ages a variety of terrain types and trails, an extensive selection of tracks, and an array of OHV-related facilities and amenities. Park elevations range from 240 to 350 feet above sea level. OHV recreational opportunities include trails and tracks for motorcycles, all-terrain vehicles (ATVs), four-wheel-drive (4WD) vehicles, recreational OHVs, karts, and quarter midgets. Concessionaires operate specialty tracks including a quarter midget track, kart track, and arena cross tourist trophy (TT) track. Prairie City SVRA hosts numerous special events throughout the year that attract a large number of visitors. The Prairie City Motocross Track, which is available to SVRA users, is also home to the Hangtown Motocross Classic, part of the Lucas Oil AMA Pro Motocross Championship Series. The Hangtown Motocross Classic is the largest special event, attracting approximately 25,000 spectators annually.

Other large annual events include the AMP Dodge Amateur MX National, Nor Cal Rock Racing, Valley Off Road Racing Association races, and cross country races. In addition, mountain bike enthusiasts can enjoy the SVRA on Wednesday evenings during the spring and fall, when it is closed to OHV use. The SVRA also hosts the Prairie City Mountain Bike Race Series. Day-use sites for picnicking and staging, multiple restrooms, an environmental training center, and a concession store (Mud Mart) are also available.

Prairie City SVRA attendance data from January 1990 to December 2013 show an average of 42,804 vehicles and 107,009 recreational and special-event visitors each year. Attendance grew steadily, peaking in 2004 (approximately 77,332 vehicles and 193,330 visitors), and then declined steadily after 2005. The decrease could have been caused in part by the 2008 recession and the resulting decrease in disposable household incomes. In 2013, approximately 56,680 vehicles and 141,701 people visited Prairie City SVRA. Approximately 77,000 of these visitors attended special events.

2.1.1 SVRA ATTENDANCE

For the analysis in this DEIR, it is assumed that attendance at Prairie City SVRA would likely rise with population growth and general economic conditions in the surrounding region. Based on the California Department of Finance’s demographic projections for 2010 through 2060, Sacramento County is expected to experience an average annual growth rate of 0.89 percent. El Dorado County, which is adjacent to Sacramento County, is expected to experience a larger average annual growth rate of approximately 1.02 percent (DOF 2013).

Although the Prairie City SVRA General Plan would expand the OHV options at the SVRA and attendance would likely grow naturally, there would likely not be a “bump” in attendance solely as a result of the new opportunities. Therefore, general economic conditions in the region are thought to have a larger effect on short-term attendance than new facility offerings. Furthermore, the expanded offerings would be brought online over time, and the General Plan does not make schedule estimates that could be used to establish a “buildout” date.

As a conservative approach, the 2013 vehicle count at the SVRA of 56,680 vehicles (with 141,701 visitors), together with the higher average annual population growth rate of approximately 1.02 percent as identified for El Dorado County, has generally been used to estimate future attendance at the SVRA and to analyze potential effects of implementing the General Plan. A baseline year of 2013 was selected because that was the year when the notice of preparation of an environmental impact report for the Prairie City SVRA General Plan was filed. Future projections were made for 2030 because the proposed new features and facilities at Prairie City SVRA would be implemented gradually over the next 10–15 years. Data for 2004 were also included in the analysis to demonstrate the range of activity levels at the SVRA. Historical park admission records (from 1990–2013) and transportation data collected as part of this DEIR were used to determine baseline counts of visitors, on-road vehicles, and OHVs and estimates of future counts. In addition, site-specific visitor and activity data were collected by Prairie City SVRA staff members between December 1 and December 22, 2014, to assist in the development of several impact analyses.

2.2 PROJECT BACKGROUND

SVRAs are OHV parks that are operated by the OHMVR Division of State Parks. OHVs are land vehicles, such as ATVs, motorcycles, and 4WD trucks, that are used mostly for recreation. The OHMVR Division is mandated by state legislation (PRC Section 5090.01 et seq.) 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 and resource management protocols (State Parks 2008).

The planning team identified a range of uses for evaluation before developing the preferred concept (potential facilities) described in the General Plan. These uses were grouped to create a range of planning alternatives. If a proposed use did not adhere to the following parameters, it was eliminated from further consideration during the planning process. The following parameters were considered essential to the development of all planning alternatives:

1. *Property ownership:* The property is owned by State Parks and operated by the OHMVR Division. Planning efforts associated with the property must be consistent with the OHMVR Division's mission statement.

2. *State Parks land classification:* The planning area is classified as SVRA lands by State Parks. Planning efforts must be consistent with statutory guidance for SVRA lands.

3. *Purpose acquired and funding source:* The Yost property and Barton Ranch acquisition area were acquired with California's OHV Trust Fund monies to expand Prairie City SVRA, to provide additional OHV recreation opportunities, and to help manage water quality. Planning efforts for property use must be consistent with the purpose of the OHV Trust Fund and the purpose of each acquisition.

4. *OHMVR Division Strategic Plan (2009):* The General Plan for the existing SVRA, the Yost property, and the Barton Ranch acquisition area must be consistent with the goals, principles, and themes described in the strategic plan.

5. *California Public Resources Code:* Laws that include the OHMVR Act of 2003 (PRC Section 5090.01 et seq.) direct how State Parks and SVRAs must be managed and what uses are allowable. General Plan uses and State Park management of uses must be consistent with state laws governing SVRAs.

6. *State and federal laws regarding resource protection:* Any alternative must avoid or minimize harm to protected plants and animals and must effectively manage cultural resources in accordance with applicable regulations.

7. *Air quality plan/district:* Prairie City SVRA is located in the Sacramento Valley Air Basin within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The alternatives need to consider how the SVRA will comply with SMAQMD's rules.

Planning alternatives (referred to as concept alternatives during the planning process) were presented to the public starting on October 13, 2013 (as described further in Chapter 1, "Introduction"). The planning alternatives were developed using all of the following elements:

- ideas and comments collected from:
  - a public meeting held in June 2013,
  - additional comments submitted via e-mail and the General Plan website,
  - an online survey, and

  - stakeholder and agency meetings (rider groups/concessionaires, regulatory agencies, Native American groups); and

- an evaluation of potential constraints in the planning area, identified through review of the cultural resource inventory, biological resource mapping and monitoring information, easements, local surface water features, and environmental contamination documentation.

The planning alternatives were divided into five geographic zones within Prairie City SVRA, and possible facilities were evaluated for each zone. During outreach activities, stakeholders were asked to comment on their preferences to maintain, enhance, relocate, or develop new facilities for each of the five zones.

The preferred concept addresses feedback that the public, agencies, and stakeholder groups provided on the planning alternatives, while considering the original resource constraints. The planning team attempted to accommodate as many ideas as possible while staying consistent with the OHMVR Act and the OHMVR Division mission, draft vision, and statement of purpose (presented in Section 2.3, “Project Objectives,” below).

Differences between the preferred concept and the planning alternatives included changes in the location of facilities, creation of specific use areas, and changes to facility names. All planning alternatives were developed to avoid sensitive resources by considering cultural resources, biotic resources, and local surface water features.

2.3 PROJECT OBJECTIVES

Project objectives are used to develop and evaluate a range of alternatives to the proposed project. Section 15124 of the CEQA Guidelines requires a description of project objectives. In addition to project objectives, the missions of State Parks and the OHMVR Division guide management of any SVRA.

2.3.1 MISSION STATEMENTS

STATE PARKS MISSION STATEMENT

The mission of State Parks is to provide for the health, inspiration, and education of the people of California by helping to preserve the state’s extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

OFF-HIGHWAY MOTOR VEHICLE RECREATION DIVISION MISSION STATEMENT

The mission of the OHMVR Division is to provide leadership statewide in the area of OHV recreation; to acquire, develop, and operate state-owned vehicular recreation areas; and to otherwise provide for a statewide system of managed OHV recreational opportunities through providing funding to other public agencies. The OHMVR Division also aims to ensure that quality recreational opportunities remain available for future generations by providing for education, conservation, and enforcement efforts that balance OHV recreation impacts with programs that conserve and protect cultural and natural resources.

2.3.2 PROJECT OBJECTIVES

The objectives of the Prairie City SVRA General Plan are as follows:

- Manage Prairie City SVRA for the protection of sensitive natural and cultural resources and high-quality OHV recreational experiences.

- Manage the entire SVRA in accordance with the purpose of acquisition.

- Promote public health and safety at Prairie City SVRA.

- Anticipate future demand for OHV recreation opportunities and identify strategies to accommodate them at Prairie City SVRA.

- Provide management options for operating all portions of Prairie City SVRA in keeping with California's OHMVR Act of 2003, as amended.

- Provide interpretive opportunities for biological and cultural resources.

- Provide for adaptive management of park operations and resources.

- Plan orderly implementation of long-term capital improvements at Prairie City SVRA.

- Guide the enhancement of recreation opportunities that support family and community-oriented use.

- Provide a framework for the provision of adequate facilities for Prairie City SVRA management operations.

- Comply with resource protection requirements, including air quality plans, and regulations protecting water quality and biological and cultural resources.

2.4 GENERAL PLAN COMPONENTS

2.4.1 UNIT CLASSIFICATION

Prairie City SVRA was added to the State Park system as an SVRA in 1990. The site was operated as a private motorcycle park from 1972 until 1975, at which time Sacramento County purchased the site with financial assistance from the OHV Grants and Cooperative Agreements Program operated by State Parks. An additional area of 401 acres was purchased in 1976 with OHV Trust Funds. In 1988, legislative action (Chapter 1210, Statutes of 1988) authorized State Parks to plan, acquire, and develop the site for OHV use. In November 2004, State Parks purchased another 211 acres in the northern portion of the planning area, known as the Yost property. In 2014, 68 acres in the southeast corner of the planning area was acquired from the Barton Ranch. The purpose of these acquisitions was to provide additional OHV recreation opportunities, prevent development of incompatible land uses, and help manage water quality at the SVRA. These areas were classified as SVRA lands and added to Prairie City SVRA at the time of purchase.

2.4.2 DECLARATION OF PURPOSE

The Declaration of Purpose for Prairie City SVRA was adopted as part of the Prairie City SVRA Master Plan in July 1991 and was updated during this General Plan process:

> The purpose of Prairie City SVRA is to offer high-quality OHV and other recreational opportunities, and to provide OHV and special event venues, while protecting and interpreting on-site natural resources.

2.4.3 SVRA VISION

The SVRA vision was updated during development of this General Plan:

> Prairie City SVRA will provide high-quality OHV recreation and other recreational opportunities, while protecting natural and cultural resources. Prairie City SVRA will develop and maintain a family-oriented model of an urban OHV recreation area that is flexible, responsive, and provides a high level of quality customer service. Opportunities will be provided for family and community outreach through environmental awareness, environmental stewardship, and safety training programs at this multiuse OHV recreation area.

2.4.4 USE AREAS

In the environmental evaluation presented in this DEIR, the term “facilities” refers to anything that is part of the built environment. This term includes all facilities envisioned in the General Plan, including trails and distributed riding areas, a visitor center, a ranger station, an overnight camping area, the kart track, the dirt oval track, enhanced spectator facilities, improved circulation, the Twin Cities District office, and a multiuse special-events area.

Potential facilities as described below in Section 2.4.5 would be developed consistent with the use areas. The use areas and potential facilities are based on site constraints (e.g., existing environmental resources and property easements) and input from the public, stakeholders, regulatory agencies, and SVRA staff members, which were assessed during development of the preferred concept (described in Section 2.2).

The General Plan for Prairie City SVRA includes five use areas (Figure 2-3), each with different characteristics, activities, or allowable uses, and resources and related management mandates. State Parks manages natural and cultural resources in the use areas to protect the resources' integrity and to comply with relevant state and federal laws and regulations regarding their management and protection. The resource management goals and guidelines described in Section 2.4.6 below apply to all use areas. Table 2-1 provides the definition, approximate size, allowable uses, and area-specific resource management prescriptions or considerations for each use area. A brief description of these use areas is included below.

DEVELOPED USE AREA

This area of approximately 219 acres accommodates the more intense recreational and administrative uses and includes the existing and future built facilities. The potential new facilities anticipated for this use area include a visitor center, an overnight camping area, enhanced spectator facilities, improved circulation, and a multiuse special-events area Potential facilities relocated from their current locations include a ranger station, Twin Cities District office, kart track, and dirt oval track (currently known as the mini MX track) (Figure 2-5).

DISTRIBUTED OHV RECREATION USE AREA

This area provides approximately 217 acres of distributed OHV recreation that is not confined to routes and trails. Visitors would continue to be able to enjoy distributed OHV recreation and connect with practice tracks and the route and trail system use area.

ROUTE AND TRAIL SYSTEM USE AREA

This area allows for approximately 353 acres of OHV recreation on identified routes and trails of varying difficulty for skills development and technical riding. Additional routes and trails would be established on the Yost property, which was not previously open to OHV recreation.

STORMWATER MANAGEMENT USE AREA

This area provides approximately 113 acres for stormwater runoff treatment and water quality improvement. Most of this use area comprises the Barton Ranch property, which was purchased in 2014 to help manage water quality.

VERNAL POOL MANAGEMENT USE AREA

This area of approximately 213 acres includes a high concentration of vernal pools, which often provide habitat for specially adapted plants and animals, including several species listed under the California and federal Endangered Species Acts. This area would not be open to OHV recreation, but would provide opportunities for access to nonmotorized recreation like picnicking, wildlife viewing, and guided vernal pool interpretative hikes.

Table 2-1. Use Areas

Color on Map	Use Areas	Definition	Approximate Size	Allowable Uses	Resource Management
🟪	Developed Use Area	An area that accommodates the more intense recreational and administrative uses and includes existing and future built facilities. This area provides vehicle access, structured recreation, and visitor services and supports operational needs.	219 acres	Facilities suitable in the developed use area include SVRA entrances; SVRA infrastructure such as internal circulation improvements; administrative and maintenance offices and facilities; concessions; developed OHV recreation facilities such as tracks, 4x4, and ATV areas; special events and spectator areas; overnight camping and staging areas with accompanying facilities such as parking, restrooms, and picnic areas; and educational facilities such as the Environmental Training Center, visitor center, and interpretive displays. Visitors will be able to access facilities in the developed use area via roadways that may be constructed between the SVRA entrance and the various developed use facilities. OHV routes and trails may be created throughout this use area.	The stormwater management use area bisects portions of the developed use area. These areas will be managed according to water quality and soil loss management requirements.
🟦	Distributed OHV Recreation Use Area	An area where OHV recreation is not confined to identified routes and trails. Vegetation is protected in the distributed OHV recreation use area in accordance with CVC Division 16.5.	217 acres	OHV recreation allowable in these areas includes tight turns, roll and flow, and skills practice trails. There may be small concentrated areas within distributed riding areas that provide opportunities such as limited hillclimbing/descents or high banking. Visitors will continue to be able to enjoy distributed OHV recreation and connect with practice tracks and the route and trail system use area. During special events, this area may also be used for spectator parking.	Portions of the distributed OHV recreation use area may be closed permanently or temporarily for restoration, conservation, or protection of natural and cultural resources. Distributed OHV recreation areas will be clearly delineated and posted to limit visitors from riding off trail in adjacent route and trail system areas. The specific types of OHVs allowable in the distributed OHV recreation area will be posted.
🟨	Route and Trail System Use Area	An area where OHV recreation is allowed only on identified routes and trails.	353 acres	This area allows OHV trails of varying difficulty for skills development and technical riding. New routes and trails will be established on the Yost property, which was not previously open to OHV recreation. Trails in the other areas of the SVRA have been established already, but some new linkages may be needed. The trails could be adaptively modified over time to improve visitor experiences. Examples of trails and experiences that could be found in these areas include limited hillclimbs/descents, terrain parks or trials trails for off-highway motorcycles, rocky trail sections, tight turns, roll and flow, and skills practice trails. During special events, this area may also be used for spectator parking.	Trails should be designed, constructed, and managed to avoid known sensitive resources and limit soil erosion. Permanent or temporary closures for restoration, conservation, or protection of natural or cultural resources may be implemented in this area. Use areas with this classification will be clearly delineated, the types of OHVs allowable on the various trails and sections of the SVRA will be specified, and wayfinding and directional signage will be posted.
🟩	Stormwater Management Use Area	An area used to treat SVRA stormwater runoff, improve water quality, and incorporate water quality improvement facilities and stormwater control features.	113 acres	This area allows stormwater protection features and facilities. Facilities could include a sediment basin, biofiltration swale (bioswale) or other stormwater control features such as sediment barriers, and/or a stormwater spray field. Portions of the stormwater management use area that bisect other use areas may allow limited OHV recreation while instituting stormwater management measures to prevent water quality degradation and soil loss.	This area will be managed according to the most current applicable water quality management prescriptions to improve water quality so that discharges meet regulatory agency requirements. A vegetative buffer will be maintained along drainage corridors with properly sited and constructed approaches and crossings to prevent erosion and protect water quality.
🟩	Vernal Pool Management Use Area	An area with a high concentration of vernal pools, which are seasonally ponded wetlands that occur on soils with a restrictive hardpan or claypan layer. Vernal pools are typically characterized by a unique set of plant species and often provide habitat for specially adapted plants and animals, including several species listed under the California and federal Endangered Species Acts. Vernal pools are protected by federal law under the Clean Water Act and many vernal pool plant associations are considered sensitive natural communities by CDFW.	213 acres	This area will not be open to OHV recreation, but will provide opportunities for access to nonmotorized recreation like picnicking, wildlife viewing, and guided vernal pool interpretative hikes. Roads and trails may cross this area to facilitate egress/ingress between and connectivity with other use areas; however, their footprint should be limited to the minimum necessary to serve their intended purpose, and they should be designed and managed to avoid or minimize impacts on the resources present.	This area will be managed according to guidance in the U.S. Fish and Wildlife Service's programmatic biological opinion for vernal pool crustaceans (USFWS 1996) or subsequently issued guidance.

Notes: ATV = all-terrain vehicle; CDFW = California Department of Fish and Wildlife; CVC = California Vehicle Code; OHV = off-highway vehicle; ROV = recreational off-highway vehicle; SVRA = State Vehicular Recreation Area

Source: Data provided by State Parks and compiled by AECOM in 2014

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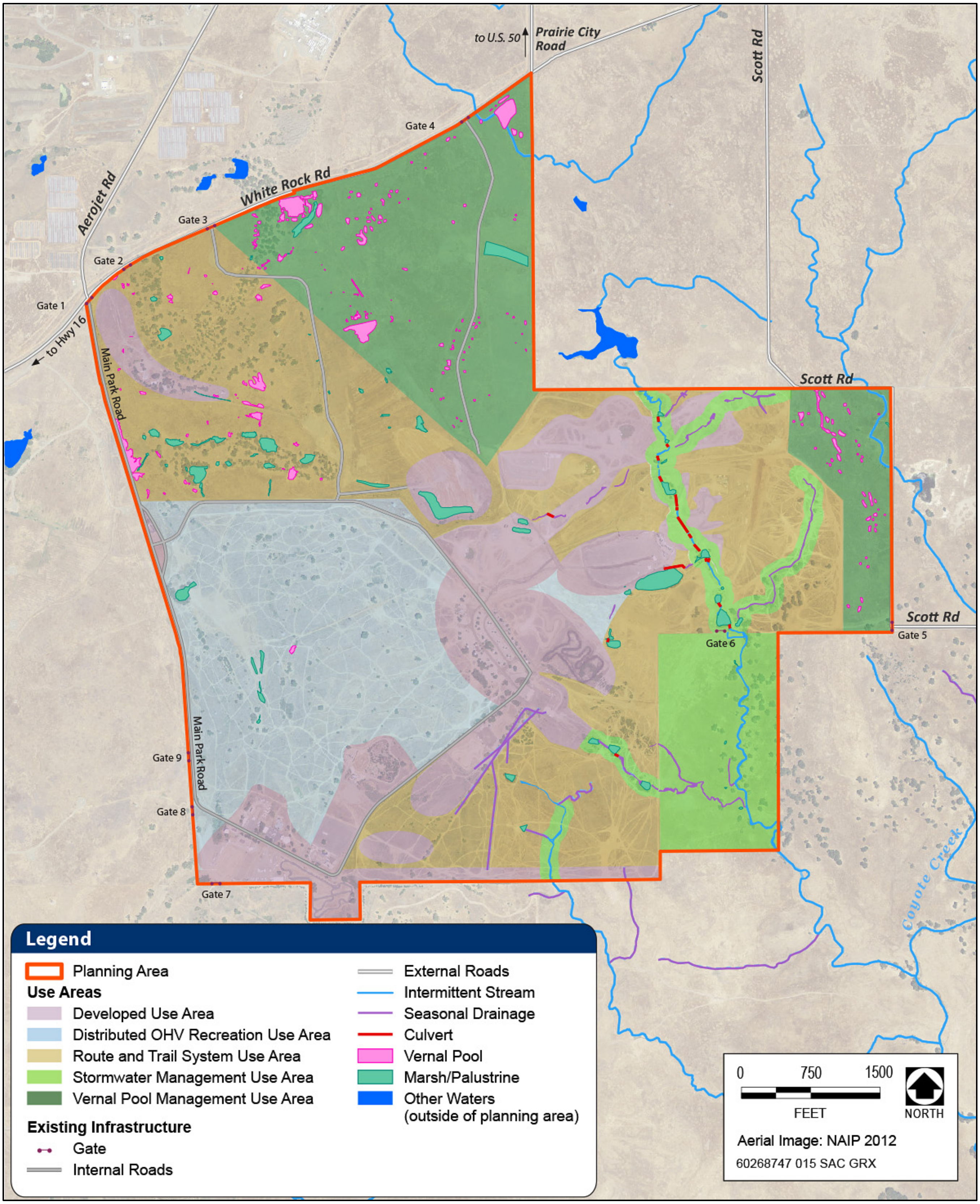


Source: Data provided by State Parks in 2012 and adapted by AECOM in 2014

Figure 2-4. Use Areas

2.4.5 POTENTIAL FACILITIES

The map of the preferred concept, showing potential facilities (Figure 2-5), and the following discussion describe the long-range vision for Prairie City SVRA and show examples of the types and conceptual locations of facilities anticipated to be constructed at the SVRA in the long term. The potential facilities would require specific project plans and may require additional CEQA analysis and project-specific permits before construction. Future conditions and demands would determine the actual locations and facilities built within the SVRA. These new facilities would be an important part of achieving the purpose of the SVRA to offer high-quality OHV and other recreational opportunities, and to provide OHV and special-event venues, while protecting and interpreting resources.

VISITOR CENTER

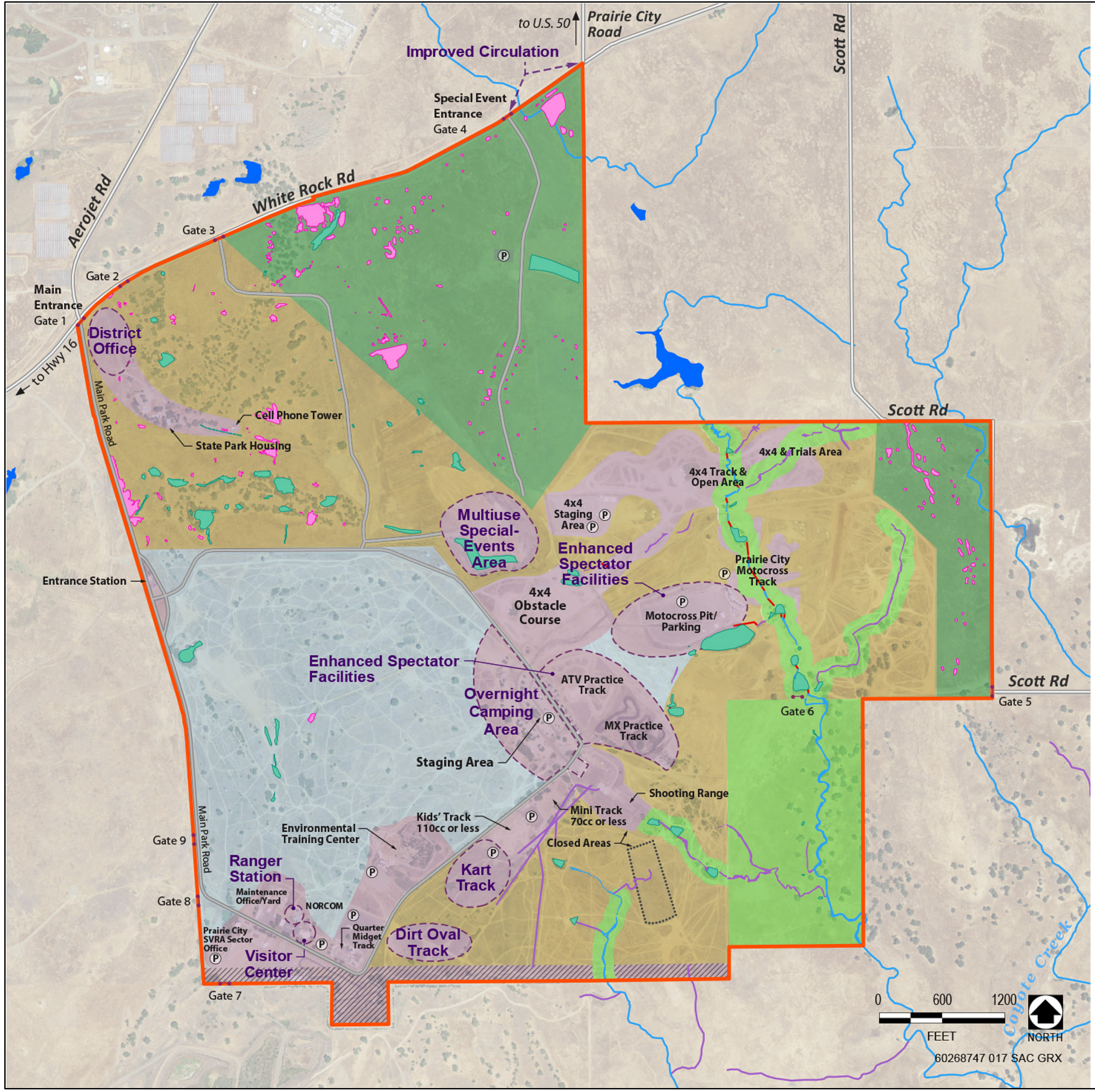
Prairie City SVRA and the surrounding communities have a rich history, with early Native American inhabitants, Gold Rush–era mining operations, cattle ranching, Aerojet's M-1 Rocket Engine Program, and the establishment of OHV recreation use at the SVRA. The Moon Room (see General Plan Section 2.2.3, "Facilities") is envisioned as the future home of the SVRA visitor center, providing opportunities for interpretation and educational programs. As defined by the State Parks *Interpretation Planning Workbook* (State Parks 2013), a visitor center (often called an interpretive center) is a staffed facility that helps visitors transition from their cars or other modes of transportation to the natural, cultural, or recreational environment of a park. A visitor center may contain exhibits, visitor facilities such as restrooms and information desks, and interpretive facilities. It may offer a variety of in-depth interpretive media—formal exhibits, historic setting vignettes, and audio-visual facilities—to inspire visitors to explore, learn about, and protect the area's resources (*Department Operations Manual*, Policy 0905.4.1 [State Parks 2010]).

RANGER STATION

The ranger station would be relocated from its current location at the entrance station to the current location of the Twin Cities District office in the southwestern portion of the SVRA (Figure 2-5). This move would ensure sufficient space for ranger station operations while locating the station more centrally in the SVRA. The ranger station provides critical emergency services, public safety, and visitor services functions. Emergency calls are routed from the Northern Communications Center (NORCOM) (see General Plan Section 2.2.3, "Facilities") to the ranger station, so operating the ranger station close to NORCOM would increase efficiency and coordination.

OVERNIGHT CAMPING AREA

The overnight camping facilities would be located in and around the existing staging area at the center of the SVRA (Figure 2-5). The staging area is equipped with utilities and infrastructure, and currently provides amenities that could be made available to campers including parking, shaded picnic sites,



Potential Facilities

- Visitor Center
- Ranger Station (relocated)
- Overnight Camping Area
- Kart Track (relocated)
- Dirt Oval Track (relocated)
- Enhanced Spectator Facilities
- Improved Circulation
- District Office (relocated)
- Multiuse Special-Events Area

Existing Facilities

- Main Entrance (Gate 1)
- Special Event Entrance (Gate 4)
- Prairie City SVRA Sector Office
- Entrance Kiosk
- State Park Housing
- Cell Phone Tower
- Maintenance Office and Maintenance Yard
- Northern Communication Center (NORCOM)
- Shooting Range
- Environmental Training Center
- Staging Area
- Quarter Midget Track
- Kids' Tracks 110cc or less
- Mini Track 70cc or less
- Motocross Pit/Parking
- Prairie City Motocross Track
- ATV Practice Track
- MX Practice Track
- 4x4 Staging Area
- 4x4 Obstacle Course
- 4x4 Track and Open Area
- 4x4 and Trials Area

Legend

▭ Planning Area
▨ **Potential Facilities** (Conceptual Location)

Use Areas

■ Developed Use Area
■ Distributed OHV Recreation Use Area
■ Route and Trail System Use Area
■ Stormwater Management Use Area
■ Vernal Pool Management Use Area

Existing Infrastructure

Ⓟ Parking
•–• Gate
⬚ Closed Area
▨ Haul Road Easement
— Internal Roads
— External Roads
— Intermittent Stream
— Seasonal Drainage
— Culvert
■ Vernal Pool
■ Marsh/Palustrine
■ Other Waters (Outside of Planning Area)

Source: Data provided by State Parks 2012 and adapted by AECOM in 2014

Figure 2-5. Potential Facilities

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restrooms, drinking water, barbecue grills, and fire pits. The Mud Mart concession store, also located in the staging area, provides riders with spare parts and accessories, apparel and safety gear, and snacks and beverages.

KART TRACK AND DIRT OVAL TRACK

The kart track and dirt oval track (currently known as the mini MX track) would be relocated to accommodate the haul road easement for mining operations located along the southern boundary of the SVRA. The new location for the kart track would be approximately 1,600 feet northeast of its current location, and the dirt oval track would be approximately 1,850 northeast of its current location (Figure 2-5). This track predated the state's acquisition of the property and is operated by a concessionaire.

ENHANCED SPECTATOR FACILITIES

Prairie City SVRA attracted 141,701 visitors in 2013. More than half of those visitors attended a special event. Enhanced spectator facilities for the all-terrain vehicle (ATV) practice track, the motocross practice track, and the Prairie City Motocross Track would accommodate the growing number of visitors to special events. These tracks would continue to serve as popular destinations for day-use recreation and to host a variety of special events. Enhancing these spectator facilities would allow visitors to continue to have a safe, comfortable, and enjoyable viewing experience. These facilities may include grandstands and viewing areas, track safety improvements, and pedestrian accessibility improvements. The enhanced spectator facilities may also include parking-related improvements to accommodate the large size and number of special events held at the SVRA.

IMPROVED CIRCULATION

Streetscape improvements completed by Sacramento County in early 2014 along White Rock Road included construction of a median, thus prohibiting crossing the median for left turns in and out of the special-event entrance (Gate 4). As a result of these improvements, vehicles can only make a right turn in and a right turn out of Gate 4. The approved Capital SouthEast Connector (Connector) is a planned 34-mile connector between Interstate 5 south of Elk Grove and U.S. Highway 50 just east of El Dorado Hills. In addition, as a separate future project, Sacramento County and the Connector Joint Powers Authority (Connector JPA) may realign Scott Road to connect with the Connector Expressway at Prairie City Road (the existing intersection of White Rock Road and Scott Road would be removed). Access to Prairie City SVRA from White Rock Road will likely require changes in the future because of access limitations associated with the Connector. Special-event circulation would be improved using another existing entrance gate, or by coordinating with Sacramento County and the Connector JPA to construct roadway improvements that enhance Gate 4 access or provide an alternate special-event entrance. The main SVRA entrance requires improvements and may need to be relocated to align an entrance to the SVRA with the future Scott Road realignment, which would then create a direct entrance from Prairie City Road to the east side of the SVRA.

DISTRICT OFFICE

Relocating the Twin Cities District Office from its current location in the southwestern section of the SVRA to a new building in the northwest corner of the SVRA (Figure 2-5) near the existing main SVRA entrance (Gate 1) would facilitate better access for the public, division and headquarters staff, and support services.

MULTIUSE SPECIAL-EVENTS AREA

A new multiuse special-events area would be located in a formerly mined area on the Yost property, which State Parks acquired in 2004 to expand the SVRA. Mining operations ceased and reclamation efforts were complete in 2012. This new facility would allow the SVRA to host an increased number of special events throughout the year that would accommodate a variety of OHVs and event types. The multiuse special-events area facilities may include event areas, spectator areas, concession areas, parking and staging areas, and an OHV track around the perimeter of the events area.

2.4.6 GOALS AND GUIDELINES

Goals and guidelines for future management of the Prairie City SVRA were developed and are described in detail in Chapter 4 of the General Plan (Section 4.4). The 1991 Prairie City SVRA Master Plan's land use goals and resource management policies provided a foundation for the goals and guidelines of the General Plan. The goals and guidelines address existing issues and provide ongoing guidance for management of the SVRA. The goals establish the purpose and desired future conditions of the SVRA, and the guidelines provide direction to the OHMVR Division for achieving these goals.

The goals and guidelines apply to all Prairie City SVRA use areas. Where specific resource management is warranted for a particular use area, the applicable management strategies are outlined in Table 2-1.

Management of the SVRA is undertaken in compliance with all applicable statutory and regulatory requirements, including the following:

- Section 404 of the federal CWA
- Section 401 of the CWA
- Section 402 of the CWA
- Porter-Cologne Water Quality Control Act of 1969
- Title 24 of the California Building Standards Code
- Federal Endangered Species Act
- California Endangered Species Act
- California Fish and Game Code
- California Public Resources Code
- California Vehicle Code

Detailed descriptions of these laws and regulations and their applicable sections are included in Section 2.7.3, "Regulatory Influences," of the General Plan.

This text below summarizes the goals proposed in the Prairie City SVRA General Plan. Section 4.4, "Goals and Guidelines," in Chapter 4 of the General Plan provides the complete text of proposed goals and guidelines.

VISITOR EXPERIENCE AND OPPORTUNITIES

Primary visitor experience and opportunities goals include providing a broad range of OHV recreation experiences and opportunities for visitors to enjoy and appreciate (VEO Goal 1), providing state-of-the-art visitor-serving facilities to enhance the visitor experience (VEO Goal 2), and enhancing individual-, family-, and community-centered recreational opportunities (VEO Goal 3).

PHYSICAL RESOURCE MANAGEMENT

The General Plan includes physical resource management goals and guidelines for water quality, soils, and geology and paleontological resources. Primary physical resource management goals and guidelines include managing the SVRA to protect jurisdictional waters of the United States, including wetlands, and waters of the state (Water Goal 1); to protect water quality (Water Goal 2); to conserve water resources (Water Goal 3); to protect and conserve soils (Soils Goal 1); and to minimize geologic hazards (Geo Goal 1); and promoting staff education and visitor awareness of paleontological resources (Geo Goal 2), all while maintaining a quality OHV recreational experience.

NATURAL RESOURCES

The General Plan includes natural resources goals and guidelines for natural resources management, plants, and wildlife. Primary natural resources goals and guidelines include managing Prairie City SVRA for a balance of uses that allow protection and stewardship of natural resources (NRM Goal 1), restoration or enhancement of natural habitats (NRM Goal 2), protection of special-status plants and sensitive natural communities (Plant Goal 1), and protection of native wildlife species, including special-status wildlife species and their designated habitats (Wildlife Goal 1), all while maintaining a quality OHV recreational experience.

CULTURAL RESOURCE MANAGEMENT

The cultural resource management goal to preserve and protect cultural resources (CR Goal 1) includes guidelines to identify and minimize impacts on significant cultural resources (CR Guidelines 1.1 and 1.2), a guideline to maintain appropriate confidentiality of all cultural resources (CR Guideline 1.3), a guideline specifying procedures to follow in the event that human remains are discovered during project activities (CR Guideline 1.4), and a guideline to allow access to the SVRA for gathering native plants of value to the Native American community (CR Guideline 1.5).

INTERPRETATION AND EDUCATION

Primary interpretive and educational goals and guidelines include providing relevant and thematic interpretive materials that address the SVRA's sense of place and history and meet the needs and interests of the visitors (IE Goal 1); increasing visitors' knowledge of and appreciation for recreational opportunities at the SVRA and in the region (IE Goal 2); expanding the understanding of ecological relationships and heightening awareness of and sensitivity to human impacts (IE Goal 3); and promoting safe and responsible OHV recreation (IE Goal 4).

SVRA OPERATIONS AND MAINTENANCE

The General Plan includes goals and guidelines for SVRA operations and maintenance. Primary goals and guidelines include providing sustainable visitor services and infrastructure that encourage responsible visitor use of Prairie City SVRA and meet visitor needs (OM Goal 1); maintaining and enhancing the quality of OHV recreational opportunities (OM Goal 2); providing facilities and services that contribute to the safety and convenience of visitors and staff (OM Goal 3); coordinating with special-event sponsors to ensure that special events are well managed and that appropriate visitor services are available (OM Goal 4); developing and maintaining SVRA facilities and monitoring OHV activities to ensure compatibility with surrounding land uses (OM Goal 5); limiting potential air quality impacts on residential properties within the planning area that could result from construction, maintenance, and OHV recreation activities (OM Goal 6); managing the SVRA for the protection of human health and ecological health based on recommendations developed in the Aerojet Feasibility Study for Area 39 (OM Goal 7); and managing the SVRA to maintain aesthetic qualities and reduce visual impacts on surrounding areas that could result from construction maintenance, and OHV recreation activities (OM Goal 8).

VISITOR MANAGEMENT

The primary goal and guidelines related to visitor management include establishing and implementing an adaptive management process for managing visitor capacity at Prairie City SVRA in support of the SVRA's purpose and vision (VM Goal 1).

3 ENVIRONMENTAL ANALYSIS

This chapter provides a programmatic analysis of the potential environmental impacts of implementing the proposed *Prairie City State Vehicular Recreation Area General Plan* (Prairie City SVRA General Plan or General Plan). As described in Chapter 1, “Introduction,” of this draft environmental impact report (DEIR), the approach to analyzing the General Plan’s environmental impacts is programmatic because the General Plan presents a framework for future management and park development.

The programmatic analysis of General Plan impacts addresses potential impacts related to all aspects of the General Plan. General Plan Chapter 4, “The Plan,” serves as the project description for this DEIR as described in DEIR Chapter 2. Much of the project description is presented at a programmatic level of detail, meaning that the project description lacks the detail that will be available when specific projects are proposed. Thus, to conduct this California Environmental Quality Act (CEQA) analysis, assumptions were made about the results of implementing the General Plan. These assumptions are discussed in DEIR Chapter 3.

Similarly, General Plan Chapter 2, “Existing Conditions,” provides much of the physical and regulatory setting information used for this DEIR’s environmental analyses. That chapter is hereby incorporated by reference, consistent with CEQA Guidelines Section 15150. Chapter 2 of the General Plan describes the geographical, physical, and management setting, including resource conditions and planning influences. This information is summarized at the beginning of each resource section in this DEIR. Generally, the General Plan itself presents the setting information relevant to the General Plan, and this DEIR provides supplemental setting information relevant to the environmental analysis.

The structure of the analysis is similar for each environmental issue. The analysis starts with a discussion of the existing environmental setting, and is followed by a programmatic discussion of the potentially significant adverse effects of implementing the Prairie City SVRA General Plan.

Each issue analysis includes the following sections:

Existing Setting: This section describes the existing condition of the environmental issue being analyzed.

Regulatory Setting: This section describes the applicable federal, state, regional, and local regulations related to the environmental issue being analyzed.

Thresholds of Significance: Thresholds for analysis are independently determined by considering the regional context and the setting. This section presents the guidelines used to identify how an impact is to be judged for each issue area in this DEIR specific to Prairie City SVRA.

Environmental Evaluation: This section presents the evaluation methodology and the analysis of each specific environmental issue area. It then identifies any potentially significant environmental impacts or explains why an impact would not occur.

Summary of Significant Impacts: This section summarizes potentially significant impacts identified in the “Environmental Evaluation” section.

Mitigation Measures: This section identifies mitigation measures that must be implemented to mitigate each impact found to be significant.

3.1 AESTHETICS

This section describes aesthetic resources in the planning area. It also discusses the local regulatory framework and analyzes the potential impacts of implementing the Prairie City State Vehicular Recreation Area (SVRA) General Plan on aesthetics.

3.1.1 EXISTING SETTING

A description of the existing aesthetic resources and photographs of typical views in the planning area and vicinity are provided in Section 2.3.4, "Aesthetic Resources," of the Prairie City SVRA General Plan. The relatively flat topography of the surrounding area limits off-site views of the off-highway vehicle (OHV) activity areas to the immediate vicinity of the SVRA. Views of the SVRA from the north and west are limited to the portions of the SVRA that are adjacent to White Rock Road and east of Grant Line Road. Off-site views from the east are limited to the area along Scott Road. Motorists traveling on Scott Road, a designated scenic corridor adjacent to the eastern boundary of the SVRA, can view Prairie City SVRA at one point. Views from the south are limited to the undeveloped grasslands within the Barton Ranch and Teichert properties that abut the southern boundary of the SVRA. Ridgelines to the north, east, and south are 5–7 miles from the SVRA; from that distance, the features within the SVRA are indistinguishable from the surrounding areas.

3.1.2 REGULATORY SETTING

Section 2.7.3.10, "Visual Resources Regulations," of the Prairie City SVRA General Plan summarizes the regional plans, policies, regulations, and laws related to aesthetic resources at Prairie City SVRA.

3.1.3 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, implementation of the Prairie City SVRA General Plan would result in a potentially significant impact on aesthetic resources if it would:

- 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 which would adversely affect day or nighttime views in the area.

Because an assessment of visual quality is often a subjective matter, whether a change in the visual character of a planning area would be beneficial or adverse (thus causing a degradation of the visual quality) is debatable. For this analysis, a conservative approach was used; a substantial change to the visual character of the planning area would be considered a degradation of the resource and would be a potentially significant impact.

ISSUES NOT DISCUSSED FURTHER IN THIS DEIR

The planning area is not located on or near a state-designated scenic highway (Caltrans 2013); therefore, this topic is not addressed further in this draft environmental impact report (DEIR). Scott Road, in the vicinity of the planning area, is a locally designated scenic corridor, and is discussed further in the evaluation below.

3.1.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

This analysis considered potential impacts from implementation of the General Plan on aesthetic resources in the planning area. A comparison of Figure 4-2, “Potential Facilities,” with Figure 2-6, “Existing Facilities,” from the General Plan shows that with one exception, the proposed new and relocated facilities would be within the currently disturbed portion of the SVRA. Figure 4-2 of the Prairie City SVRA General Plan identifies the conceptual locations for new facilities, including a visitor center, an overnight camping area, a multiuse special events area, distributed OHV recreation and identified routes and trails, enhanced spectator facilities, improved circulation, and the relocated ranger station, track, dirt oval track, and district office. The General Plan also proposes to create a stormwater management area in the portion of Barton Ranch that recently was acquired (see General Plan Figure 1-2). The stormwater management area also would extend into the SVRA (Figure 2-5). The only visual changes that may occur in the stormwater management area would be the addition of water quality improvement facilities and an increase in lush vegetation associated with drainage courses and ponds. The district office would be relocated from the southeastern area of the SVRA to a location near the main SVRA entrance. Constructing the new facilities listed in Figure 2-5 of the DEIR (General Plan Figure 4-2) would not change the internal visual character of the SVRA or substantially damage scenic resources.

This evaluation is based on a review of planning documents pertaining to the planning area and vicinity, including the *Sacramento County General Plan of 2005–2030* (Sacramento County Community Planning & Development Department 2011), Sacramento County *Community Design Guidelines* (Sacramento County Community Planning & Development Department 2006), *City of Rancho Cordova Design Guidelines* (City of Rancho Cordova 2005), *Rancho Cordova General Plan* (City of Rancho Cordova 2006a), *City of Folsom General Plan Update Existing Conditions Report* (City of Folsom 2014), and *Folsom South of U.S. 50 Specific Plan Public Draft EIR/EIS* (City of Folsom and USACE 2010).

The review focused on identifying inconsistencies with adopted plans and design guidelines. Maps and aerial photographs also were reviewed. Potential changes to off-site views that would result from implementation of the Prairie City SVRA General Plan were evaluated. When the extent and implications of the visual changes were determined, consideration was given to:

- specific changes in Prairie City SVRA that could affect the visual character and qualities of the planning area;
- the visual context of the SVRA;
- the extent to which Prairie City SVRA and the surrounding area contain places or features that have been designated in plans and policies for protection or special consideration; and
- the number of viewers and their activities that could be affected by future changes within Prairie City SVRA.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.1-1 Effect on Scenic Vistas or Visual Character of the Site or its Surroundings

Sacramento County Viewshed

White Rock Road is the primary access road to Prairie City SVRA and runs approximately 1 mile along the northern boundary of the planning area. From White Rock Road, views of the planning area include the main entrance road (Main Park Road) at the western boundary of the SVRA, disturbed annual grasslands, coyote brush scrub, stands of cottonwood and willow trees, and an ecological reserve area containing vernal pools. The Prairie City SVRA General Plan proposes to redesignate the existing ecological reserve area as a vernal pool management area. This area is visible from White Rock Road and the redesignation would not alter the visual character of the area. The special event entrance (Gate #4) is a short distance west of the White Rock Road/Prairie City Road intersection. The entrance signage, the gate, and the vernal pool management area are the SVRA features visible from this road. Electrical transmission lines crossing the SVRA are visible from Gate #4 as distant features. The SVRA's developed areas, such as the entrance kiosk, 4x4 obstacle course and trails area, Prairie City Motocross Track, ranger station, and associated activity areas, are not visible from White Rock Road.

The relocated district office would be the only facility visible from off-site; this building is anticipated to be a one-story structure. Special-event circulation would be improved using another existing entrance gate, or by coordinating with Sacramento County and the Capital SouthEast Connector Joint Powers Authority to construct roadway improvements that enhance Gate 4 access or provide an alternate special-event entrance. The main SVRA entrance would require improvements and may need to be relocated to align an entrance to the SVRA with the future Scott Road realignment, which would then create a direct entrance from Prairie City Road to the east side of the SVRA. A future CEQA analysis would be required when additional information is available for the district office and circulation improvements to determine the level of visual effects that would result from the construction of these facilities.

Scott Road, which parallels the eastern boundary of the SVRA, is identified in the Circulation Element of the *Sacramento County General Plan of 2005–2030* as a scenic corridor from White Rock Road to Latrobe Road, and Policy CI-58 states that the scenic corridor protection should be continued (Sacramento County Community Planning & Development Department 2014; Lenzie and Singh, pers. comms., 2015).

Sacramento County reported 2,566 average daily trips in 2014 on Scott Road, a Sacramento County–designated scenic corridor (Sacramento County Department of Transportation 2015). Vehicles on Scott Road travel along the eastern boundary of Prairie City SVRA for approximately two-thirds of a mile (3,500 feet). The vernal pool management area is the primary view of the SVRA from Scott Road; visible electrical transmission lines cross the SVRA in the background. None of the structures within the SVRA are visible from the road. At one point where Scott Road makes a 90-degree turn, a portion of the stormwater management use area, Prairie City Motocross Track, 4x4 track, and open area are visible (see Figure 2-18 [Viewpoint 3] of the General Plan). Viewing periods are short because vehicles turn at this viewpoint and the east-west segment of Scott Road is only one-quarter mile (1,320 feet) long.

From Scott Road, the most considerable visible OHV activities would occur primarily during large special events at the Prairie City Motocross Track, such as the annual Hangtown Motocross Classic. During the rest of the year, the use of the motocross track is relatively light (see Figure 2-20 of the General Plan). OHV recreation at the 4x4 trails area can also be seen from Scott Road, especially on the weekend when there is increased visitation. Constructing the new facilities shown in Figure 2-5 of this DEIR would not change the overall aesthetic character along Scott Road because the new facilities would not be located in the eastern portion of the SVRA where they would be visible from Scott Road. OM Guideline 8.1 (shown at the end of this impact discussion) would be implemented to protect views into the SVRA from Scott Road.

City of Rancho Cordova Viewshed

Section 4.13 of the draft environmental impact report for the *Rancho Cordova General Plan* includes a visual analysis of the General Plan and surrounding area (City of Rancho Cordova 2006b). The analysis did not identify any visual connections between the City of Rancho Cordova planning area and Prairie City SVRA.

City of Folsom Viewshed

Section 3A.1 of the *Folsom South of U.S. 50 Specific Plan DEIR/DEIS* includes a visual analysis of the specific plan and surrounding area (City of Folsom and USACE 2010). The analysis determined that the

Prairie City SVRA facilities are not visible from the Folsom South of U.S. 50 Specific Plan site. The new facilities shown in Figure 2-5 would not be visible from Prairie City Road north because of the topography along Prairie City Road and south of White Rock Road. In addition, the new facilities would be designed to be consistent with the Prairie City SVRA General Plan's goals and General Plan OM Guideline 8.1 (shown at the end of this impact discussion). Any new structures would be designed similar in height and scale to existing structures at the SVRA, and California native plant and tree species would be planted to screen new structures from views, as necessary.

SVRA Interior Viewshed

The majority of the proposed potential facilities would be located in the interior of the SVRA (Figure 2-5). The relocated district office, the improved circulation, and facilities associated with the stormwater management use area are addressed above in the "Sacramento County Viewshed" discussion. Construction of new structures—the visitor center, relocated ranger station, overnight camping area, relocated kart track and dirt oval track, and enhanced spectator facilities—would include minimal grading because they would be constructed in flat areas. Grading for the multiuse special events area and distributed OHV activity locations would likely involve contouring the existing landform, but likely would not require cutting or filling of large bank areas. New structures would be similar in height and scale to existing structures at the SVRA (OM Guideline 8.1).

Potential Impact

Removal of native trees would be prohibited under the Prairie City SVRA General Plan unless the health of the trees warrants removal (Plant Guideline 1.5). If nonnative trees need to be removed to accommodate the siting of specific facilities, such as the camping area, multiuse special events area, or trails, the aesthetics of the SVRA interior viewshed could be adversely affected. However, California native tree species, including cottonwood, willow, and blue oak, as well as native shrubs would be planted to maintain the existing visual setting of the planning area. Trees and shrubs could also be planted to provide visual separation between use areas (OM Guideline 8.1 and Plant Guideline 1.5). In addition, all of the new facilities would be designed to be consistent with the Prairie City SVRA General Plan's goals and with General Plan NRM Guidelines 1.1 and 1.5, OM Guideline 8.1, and Plant Guideline 1.5 (all shown below).

NRM Goal 1: Manage the SVRA for a balance of uses that allow protection and stewardship of natural resources while maintaining a quality OHV recreational experience.

- **NRM Guideline 1.1:** Locate visitor-serving facilities in prior disturbed areas or in areas of relatively low resource value to minimize disturbance to higher value habitat areas.

- **NRM Guideline 1.5:** Focus new trail development in areas of relatively low habitat value. Route new trails around the edges of high-quality habitat and include buffers to avoid habitat fragmentation. Determine the size of the buffers based on site-specific conditions and the habitat requirements of the species that may use the habitat and buffers, in communication with appropriate trustee and responsible agencies, such as the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service. Where high-quality habitats being avoided are close to each other, size the buffers to provide connectivity between the habitats.

OM Goal 8: Manage the SVRA to maintain current aesthetic qualities and reduce any visual impacts on surrounding areas that could result from construction, maintenance, and OHV recreation activities.

- **OM Guideline 8.1:** Design any new structures such that they are similar in height and scale to existing structures at the SVRA. Locate facilities with minimal impact on the viewshed and views from Scott Road, a Sacramento County–designated scenic corridor. Plant California native plant and tree species to screen the northeast corner of the 4x4 trials area from views along Scott Road, and as necessary to screen new facilities from views.

Plant Goal 1: Manage the SVRA for a balance of uses that allow protection of special-status plants and sensitive natural communities while maintaining a quality OHV recreational experience.

- **Plant Guideline 1.5:** Prohibit removal of native trees unless the health of the tree warrants removal. Trees that must be removed to accommodate the siting of facilities will be replaced elsewhere in the SVRA. At both new and existing facilities, avoid root compaction and physical damage to native trees. Conduct restoration or enhancement of native oak woodland at the Barton Ranch acquisition area.

Implementing the Prairie City SVRA General Plan would not have a substantial adverse effect on a scenic vista or the area’s visual character. Facilities envisioned in the General Plan would be consistent with the existing character of Prairie City SVRA and the surrounding area. New structures would not substantially obstruct scenic views, and the character of these facilities would be consistent with the existing character of the planning area and vicinity. Furthermore, no substantial ground disturbance would occur in the planning area. In addition, implementation of the goals and guidelines listed above will avoid degradation of scenic vistas. This impact would be **less than significant.**

Mitigation Measures: No mitigation is required.

IMPACT 3.1-2 Increase in Light or Glare

Prairie City SVRA typically operates during daylight hours, from 8 a.m. to sunset. The SVRA closes between 5 p.m. and 8 p.m., depending on the month. The existing dirt oval track and quarter midget track are currently equipped with lighting and there is security lighting at the administrative buildings and restrooms. A limited number of nighttime special events such as the Headlight Festival are held annually in December between 5 p.m. and 8 p.m. Thus, nighttime lighting is not typically required for the OHV activity areas. Occasional special events may be held after dark; to increase visibility beyond that provided by OHV headlights, existing security lighting or portable lighting may be used. Nighttime security lighting at new facilities envisioned in the General Plan would be consistent with the existing SVRA facility security lighting. New light fixtures would include shielding and would be angled downward to provide light spillover into adjacent areas. New structures would not include reflective surfaces, such as tin roofs or reflective glass that could produce glare. Project-level facility improvements to increase nighttime recreation would require specific project plans and may require CEQA analysis before construction. All of the new lighting would be designed to be consistent with the Prairie City SVRA General Plan's goals and the following General Plan guideline:

- **OM Guideline 8.2**: Implement the following actions to minimize potential light pollution or glare that could result from lighting for nighttime activities and security:
  - Include shielding on any new light fixtures.
  - Angle any new light fixtures downward to provide light spillover into adjacent areas.
  - Avoid the use of reflective surfaces, such as tin roofs or reflective glass that could produce glare, on any new structures.

With adherence to this General Plan guideline, the new nighttime security lighting would avoid light pollution, new lighting sources would be consistent with the area's existing types of lighting, and the new facilities would be constructed without the use of highly polished or reflective materials. Therefore, light or glare from the new facilities would not adversely affect daytime or nighttime views in the area, and no adverse effects are anticipated as a result of increased light or glare. This impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.1.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the Prairie City SVRA General Plan and implementation of resulting actions would not result in significant impacts on aesthetic resources.

3.1.6 MITIGATION MEASURES

No significant impacts on aesthetic resources would occur with implementation of the General Plan, and no mitigation is required.

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3.2 AIR QUALITY

This section provides an overview of existing air quality conditions in the vicinity of Prairie City State Vehicular Recreation Area (SVRA) and the factors that affect air quality, and an analysis of the potential short- and long-term air quality impacts of implementing the Prairie City SVRA General Plan.

3.2.1 EXISTING SETTING

Section 2.3.1, "Physical Resources," of the General Plan includes a discussion of the existing air quality setting that is relevant to the impact analysis found in this section.

The planning area is located in the southeastern portion of the Sacramento Valley Air Basin (SVAB) within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SVAB is relatively flat, bordered by mountains to the east, west, and north. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin Delta, bringing with it pollutants from the San Francisco Bay Area.

The climate is characterized by hot, dry summers and cool, rainy winters. Periods of dense and persistent low-level fog that are most prevalent between storms are characteristic of SVAB winter weather. Temperature inversions, in which a layer of warm air develops over cooler air close to the ground, are a strong weather feature present over the SVAB. Such inversions hamper vertical dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

Criteria Air Pollutants

The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA) focus on the following air pollutants as indicators of ambient air quality: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, 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. These are the most prevalent air pollutants known to be harmful to human health and are commonly referred to as "criteria air pollutants."

Health-based air quality standards have been established for these pollutants by ARB at the state level and by EPA at the national level. These standards, which include a margin of safety, were established to protect the public from adverse health impacts resulting from exposure to air pollution. California also has established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. A brief description of each criteria air pollutant, including its source types and health effects, is provided in Section 2.3.1 of the General Plan along with the most current ambient air quality monitoring station data (Table 2-5 of the General Plan) for the planning area. Table 3.2-1 below presents the California ambient air quality standards (CAAQS) and national ambient air quality standards (NAAQS).

Table 3.2-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	Primary[c,d]	Secondary[c,e]
Ozone	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable particulate matter (PM_{10})	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	–	
Fine particulate matter ($PM_{2.5}$)	24 hours	–	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3 [f]	15 µg/m^3
Carbon monoxide	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide [g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide [h]	Annual arithmetic mean	–	0.030 ppm (for certain areas) [h]	–
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [h]	–
	3 hours	–	–	0.5 ppm (1,300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead [i,j]	30-day average	1.5 µg/m^3	–	–
	Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility-reducing particles [k]	8 hours	See footnote [k]	No national standards	
Sulfates	24 hours	25 µg/m^3		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride [k]	24 hours	0.01 ppm (26 µg/m^3)		

Notes: µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppb = parts per billion; ppm = parts per million

Table 3.2-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	Primary[c,d]	Secondary[c,e]

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standards. Contact the U.S. Environmental Protection Agency (EPA) for further clarification and current national policies.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

[f] On January 15, 2013, EPA announced it would revise the national annual $PM_{2.5}$ standard to 12.0 $\mu g/m^3$ to provide increased protection against health risks.

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

[i] The California Air Resources Board (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.

[j] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[k] In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and the “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: ARB 2013a

Attainment Status

To determine whether a region's air quality is healthful or unhealthful, contaminant levels in ambient air samples are compared to the CAAQS and NAAQS. Both ARB and EPA use local ambient air quality monitoring data to designate an area's attainment status relative to the CAAQS and NAAQS, respectively, for criteria air pollutants. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." The "unclassified" designation is used in an area that cannot be classified as meeting or not meeting the standards, based on available information.

With respect to the CAAQS, SMAQMD is currently designated as a nonattainment area for ozone, PM_{10}, and $PM_{2.5,}$ and as an attainment or unclassified area for all other pollutants. With respect to the NAAQS, SMAQMD is designated as a severe nonattainment area for ozone, nonattainment under the national 24-hour standard for $PM_{2.5}$, and as an attainment, unclassified, or attainment pending area for all other pollutants. Table 3.2-2 shows SMAQMD's most recent attainment designations.

Sensitive Receptors

Sensitive land uses or sensitive receptors are facilities that generally accommodate people who may experience adverse effects from unhealthful concentrations of air pollutants. Commonly identified sensitive land uses are residences, hotels and motels, schools, preschools, playgrounds, child care centers, retirement or convalescent homes, hospitals, and clinics.

The nearest off-site sensitive receptors are residential neighborhoods located approximately 2 miles north and southwest of the planning area boundaries, and schools more than 2.5 miles north of the planning area boundaries. Three caretaker housing units for staff members that are owned by the Off-Highway Motor Vehicle Recreation (OHMVR) Division of State Parks are located in the northwestern portion of the SVRA. Campsites are proposed as potential facilities to be located in designated areas of the SVRA; however, these receptors (campers) would stay in the planning area for only a limited amount of time.

3.2.2 REGULATORY SETTING

Air quality in the SVAB is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work both jointly and individually to improve air quality through legislation, regulations, planning, policymaking, education, and a variety of programs. The agencies primarily responsible for improving the air quality in the SVAB are discussed in Section 2.7.3.4, "Air Quality Regulations," of the General Plan.

Table 3.2-2. California and National Attainment Statuses for the Sacramento Metropolitan Air Quality Management District

Pollutant	Designation/Classification	
	National Standard	California Standard
Ozone	Nonattainment (1-hour)[1] classification = severe	Nonattainment (1-hour) classification = serious[2]
	Nonattainment (8-hour)[3] classification = severe-15	Nonattainment (8-hour) classification
	Nonattainment (1-hour)[4] classification = severe-15	
Particulate matter— 10 micrometers (PM_{10})	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (annual)
Particulate matter— 2.5 micrometers ($PM_{2.5}$)	Nonattainment (24-hour)	–
	Unclassified/attainment (annual)	Nonattainment (annual)
Carbon monoxide	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Sulfur dioxide[5]	(Attainment pending) (1-hour)	Attainment (24-hour)
Lead	Unclassified/attainment (3-month rolling average)	Attainment (30-day average)
Hydrogen sulfide	No federal standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibility-reducing particles		Unclassified (8-hour)

Notes:

[1] Air quality meets the federal 1-hour ozone standard (77 *Federal Register* 64036, October 18, 2012). The U.S. Environmental Protection Agency (EPA) revoked this standard, but some associated requirements still apply. The Sacramento Metropolitan Air Quality Management District (SMAQMD) attained the standard in 2009. SMAQMD has requested that EPA recognize attainment to fulfill the requirements.

[2] Per Health and Safety Code Section 40921.5(c), the classification is based on 1989–1991 data, and therefore does not change.

[3] 1997 standard.

[4] 2008 standard.

[5] Cannot be classified.

Source: SMAQMD 2013

3.2.3 THRESHOLDS OF SIGNIFICANCE

CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES

Based on the environmental checklist in Appendix G of the CEQA Guidelines and guidance from SMAQMD, implementation of the Prairie City SVRA General Plan would have a potentially significant impact related to air quality if it would:

- 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; or
- create objectionable odors affecting a substantial number of people.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT–RECOMMENDED THRESHOLDS

As stated in CEQA Guidelines Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, in accordance with the SMAQMD-recommended thresholds for evaluating project-related air quality impacts (SMAQMD 2014), implementation of the General Plan would have a potentially significant impact related to air quality if it would:

- generate short-term construction-related mass criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended threshold of 85 pounds per day (lb/day) for oxides of nitrogen (NO_X);
- generate short-term construction-related mass criteria air pollutant emissions that exceed SMAQMD-recommended thresholds of 80 lb/day for PM_{10} or 82 lb/day for $PM_{2.5}$ (the project must implement SMAQMD's Basic Construction Emissions Control Practices to use these thresholds);
- generate long-term regional criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended threshold of 65 lb/day for reactive organic gases (ROG) and NO_X;
- generate long-term regional criteria air pollutant emissions that exceed SMAQMD-recommended thresholds of 80 lb/day for PM_{10} or 82 lb/day for $PM_{2.5}$ (the project must implement all feasible best management practices to use these thresholds);

- expose sensitive receptors to toxic air contaminant (TAC) emissions that exceed an incremental increase of 10 in 1 million for the carcinogenic risk (risk of contracting cancer) and/or a ground-level concentration of project-generated TACs that would result in a noncarcinogenic Hazard Index of 1.0 at any off-site receptor; or
- expose sensitive receptors to excessive nuisance odors, as defined in SMAQMD Rule 402.

3.2.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

The methods used to analyze construction-related and operational emissions are consistent with current SMAQMD and ARB recommendations.

The evaluation of the impacts of the General Plan on air quality was based on existing Prairie City SVRA activities and the changes that could result from modifying and enhancing existing recreational facilities and developing recently acquired lands with implementation of the General Plan. In other words, this analysis evaluates the net change in operational emissions associated with General Plan implementation.

A baseline year of 2013 was selected because that was the year when the notice of preparation of an environmental impact report for the Prairie City SVRA General Plan was filed. Future projections were made for 2030 because the proposed new features and facilities at Prairie City SVRA would be implemented gradually over the next 10–15 years. Data for 2004 were also included in the analysis to demonstrate the range of activity levels at the SVRA.

Historical park admission records (from 1990–2013) and transportation data collected as part of this draft environmental impact report (DEIR) were used to determine baseline counts of visitors, on-road vehicles, and off-highway vehicles (OHVs) and estimates of future counts. In addition, site-specific visitor and activity data were collected by Prairie City SVRA staff members between December 1 and December 22, 2014, to assist in the development of emission estimates. A log sheet was prepared and visitors were polled for the following information as they entered and/or left the park: OHV type, engine type (i.e., two-stroke or four-stroke for motorcycles and all-terrain vehicles [ATVs]), duration of visit, and OHV activity miles traveled during the visit.

To estimate emissions, the activity data were combined with emission factors obtained from ARB's Recreation Vehicle 2013 (RV2013) model (ARB 2013b) for some OHVs (motorcycles and ATVs) and EMFAC 2011 for on-highway light trucks, which are used to transport OHVs or are driven on-site as OHV 4x4 trucks. Emission factors from Chapter 13.2.2, "Unpaved Roads," of EPA's AP-42, *Compilation of Air Pollutant Emission Factors,* were used with on-site OHV activity data and manufacturer vehicle weights to estimate off-road emissions of fugitive dust from activities at Prairie City SVRA. The following assumptions were used for the calculations:

- All OHVs are gasoline powered. (This assumption is conservative because some OHVs are electric.)
- Motorcycle exhaust and fugitive dust emissions include off-road motorcycles, motocross bikes, and minibikes.
- ATV exhaust emissions include ATVs, recreational off-highway vehicles (ROVs), utility task vehicles (UTVs), quarter midgets, and karts, because all five types of OHVs have similar engine sizes, engine type splits (two-stroke and four-stroke), and speeds.
- ATV fugitive dust emissions include ATVs, ROVs, and UTVs (kart and quarter midget tracks are paved).
- All motocross activity and 50 percent of motorcycle and ATV activity occur on tracks treated with water and dust suppressants.
- The SVRA has 2.5 visitors per vehicle (assumption used on Prairie City SVRA visitor log sheets).
- The SVRA operates for 313 days per year (closed on Wednesdays).
- Based on 2013 visitor information, 46 percent of all visitors are potential OHV users because many visitors are spectators during special events and do not operate OHVs.
- Of the 54 percent of people visiting just for special events, 75 percent do not ride OHVs and are only spectators. (This assumption is conservative because many of the recreation areas were closed during the largest special events and riding was generally limited to the few hundred event participants.)

FUGITIVE DUST—CADMIUM

In September 2011, a human health and ecological risk assessment (HHERA) was prepared for Prairie City SVRA. According to the sampling results from the 2011 HHERA, cadmium was found in soil samples at concentrations above its remedial investigation soil screening level. The HHERA included cadmium in the calculation of multi-pathway risk from soil, groundwater, and surface water; however, inhalation health risks (cancer and noncancer) were assessed without determining the composition of cadmium in the fugitive dust. EPA has classified cadmium as a probable human carcinogen.

In August 2015, AECOM conducted a conservative assessment of the health risks caused by inhalation of fugitive dust containing elemental cadmium that could be generated during activities at Prairie City SVRA. The assessment was conducted to determine whether SVRA users could experience a health hazard from inhaling cadmium in fugitive dust (AECOM 2015).

To assess the potential cancer risk and chronic hazard quotient of cadmium in fugitive dust, dispersion modeling was performed to estimate the concentration of elemental cadmium within the boundaries of

Area 39. The methodology involved characterizing sources and estimating emissions, identifying receptors, modeling air dispersion, assessing exposure, and obtaining meteorological data.

The results of the health risk analysis are summarized below.

▸ Maximum cancer risk from cadmium exposure in fugitive dust	0.99 in 1 million
Threshold of significance	*10 in 1 million*
▸ Maximum chronic inhalation cumulative hazard index from cadmium	0.0077
Threshold of significance	*1.0*

Based on AECOM's preliminary analysis with conservative assumptions, the health impact from inhalation of cadmium-containing fugitive dust would not exceed the established thresholds for cancer risk and chronic health hazard set by the Office of Environmental Health hazard Assessment.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.2-1 Conflict with or Obstruction of the Implementation of the Applicable Air Quality Plan

Air quality plans describe the air pollution control strategies to be implemented by an air district, city, county, or region. The primary purpose of an air quality plan is to maintain and/or achieve attainment of an NAAQS or a CAAQS. SMAQMD has issued the 2008 *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan—2013 State Implementation Plan Revisions* and the 2010 PM_{10} Implementation/Maintenance Plan. These plans address reducing emissions of criteria pollutants and ambient concentrations of air pollutants, protecting public health, and achieving attainment of the federal and state standards for ozone and particulate matter (PM).

Two criteria are applicable to determining whether implementing the Prairie City SVRA General Plan would substantially affect regional air quality. The first criterion is whether emissions associated with the General Plan would exceed the estimated air basin emissions used as the basis of the air quality plans, which are based in part on projections of population and vehicle miles traveled. The second criterion, discussed in Impact 3.2-2, is whether implementing the General Plan would increase the frequency or severity of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards.

The construction-related and operational impacts of the General Plan with regard to a potential conflict with or obstruction of an applicable air quality plan are discussed separately below.

Construction

Development would occur in the planning area in various stages over a period of 10–15 years. During this period, heavy-duty off-road equipment, material delivery and haul trucks, and worker commute trips would generate exhaust emissions of ROG, NO_X, CO, oxides of sulfur, PM_{10}, and $PM_{2.5}$. An air quality plan estimates the use of construction equipment in the region on an annual basis, accounting for a certain number of projects, equipment quantities, and operating hours and basing its analysis on emissions levels from previous years. Construction activities associated with the General Plan would not increase the assumptions for the use of off-road equipment because each development project is expected to be relatively small, with limited emissions that would be less than SMAQMD's significance thresholds. Because the details required to estimate construction-related emissions are not available at the General Plan level, construction emissions would be estimated quantitatively at the detailed project level for each portion of the planning area that would be modified over the coming years.

Construction of improvements within the SVRA would generally involve using large, diesel-powered equipment. Such equipment would produce temporary, intermittent air pollutant emissions that generally would be distributed over the extensive planning area. In cases when construction activities would be concentrated in time and space, emissions of fugitive PM dust could be substantial and result in a potentially significant impact. In addition, because the exact nature of construction activities and their intensity are not known at the time of this writing, construction-related ROG and NO_X emissions have the potential to exceed SMAQMD's thresholds of significance. Therefore, such emissions could exceed the estimated air basin emissions used as the basis for the applicable air quality plan. However, State Parks would implement OM Goal 6 and OM Guidelines 6.1 through 6.7 from the General Plan (shown below) to reduce these adverse effects on air quality.

OM Goal 6: Limit potential air quality impacts within the planning area that could result from construction, maintenance, and OHV recreation activities.

- **OM Guideline 6.1:** The following Basic Construction Emission Control Practices are required during construction of all projects (regardless of significance) occurring within the SMAQMD's jurisdiction, which would include the entire planning area.

  - Water all exposed surfaces during construction activities two times daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

  - Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

  - Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day during construction activities, and as necessary during operations. Use of dry power sweeping is prohibited.

  - Limit construction-related vehicle speeds on unpaved roads to 15 miles per hour.

  - Complete all paving of roadways, driveways, sidewalks, and parking lots as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
  - Minimize idling time either by shutting equipment off when not in use or by reducing the time of idling to 5 minutes (required by California Code of Regulations Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.
  - Maintain all construction equipment in proper working condition according to manufacturer’s specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

- **OM Guideline 6.2:** For projects that would generate air pollutant emissions that exceed the SMAQMD’s construction threshold of significance, SMAQMD recommends the following measures to reduce exhaust-related air pollutant emissions. It is possible that not all of SMAQMD’s required measures would apply to the proposed construction activities.
  - The project representative shall submit to the lead agency and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project.
  - The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment.
  - The project representative shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.
  - This information shall be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment.
  - The District’s [SMAQMD’s] Equipment List Form can be used to submit this information.
  - The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.
  - The project representative shall provide a plan for approval by the lead agency and SMAQMD demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a projectwide fleet-average 20 percent NO_X reduction and 45 percent particulate reduction compared to the most recent California Air Resources Board fleet average.

- This plan shall be submitted in conjunction with the equipment inventory.
- Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
- The District's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.
- The project representative shall ensure that emission from all off-road diesel powered equipment used in the planning area do no exceed 40 percent opacity for more than 3 minutes in any one hour.
- Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately.
- Noncompliant equipment will be documented and a summary provided to the lead agency and District monthly.
- A visual survey of all in-operation equipment shall be made at least weekly.
- A monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.
- SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other SMAQMD, state, or federal rules or regulations.

▸ **OM Guideline 6.3:** For projects that would involve substantial earth disturbance activities (e.g., substantial cut-and-fill operations, disturbance of more than 35 acres per day) and could potentially exceed SMAQMD's PM_{10} threshold (i.e., ambient air quality standard), SMAQMD recommends the following measures to reduce fugitive dust–related air quality emissions.

- Water exposed soil with adequate frequency for continued moist soil. However, do not overwater to the extent that sediment flows off the site.
- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 mph.
- Install wind breaks (e.g., plant trees, solid fencing) on windward side(s) of construction areas.
- Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible. Water appropriately until vegetation is established.

  - Install wheel washers for all existing trucks, or wash off all trucks and equipment leaving the site.

  - Treat site accessed to a distance of 100 feet from the paved road with a 6- to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.

  - Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of SMAQMD shall also be visible to ensure compliance.

- **OM Guideline 6.4:** For projects that would exceed SMAQMD thresholds of significance, require that contractors and/or staff implement the following actions to minimize emissions of ozone precursors (ROG and NO_X) during construction activities:

  - Substitute electric- or gasoline-powered equipment for diesel-powered equipment, when feasible.

  - Use alternatively fueled construction equipment on-site, such as compressed natural gas, liquefied natural gas, propane, or biodiesel.

- **OM Guideline 6.5:** Require that event sponsors and/or staff members implement the following actions to reduce the release of fugitive dust during special events:

  - Before each special event, apply best available control measures (BACMs) for dust suppression that are safe for human exposure and ground application to areas that are not paved or covered with gravel and that would be used for parking, foot traffic, and/or nonmobile activities at special events (e.g., vendors, concert locations, display areas).

  - Apply BACMs immediately before setup of a special event and at the end of each special-event day, when the majority of visitors have left the SVRA. Apply subsequent treatments as needed during the special event if excessive dust is observed. Apply BACMs for dust suppression to control trackout/carryout and sediment where unpaved areas join paved areas.

- **OM Guideline 6.6:** Conduct a project-level environmental analysis for all construction projects located within 500 feet of any residences (on-site or off-site) to assess potential air quality impacts of construction-related emissions on the existing resident(s). If any applicable health risk significance thresholds (e.g., 10 in a million excess cancer risks, health hazard index above 1.0) are determined to be exceeded, the applicant and contractor shall implement all necessary measures to reduce impacts to a less-than-significant level. Measures could include but are not limited to use of Tier 4 equipment, use of alternative-fueled equipment, and limiting the hours of construction per day.

- **OM Guideline 6.7:** Continue to implement all existing dust suppression maintenance practices.

Implementing SMAQMD's basic construction mitigation measures would be mandatory for all construction activities. With adherence to OM Goal 6 and OM Guidelines 6.1 through 6.7, construction emissions would be reduced to a level less than the applicable SMAQMD thresholds of significance. Therefore, implementation of the General Plan would not generate emissions that would exceed the estimated and allowable air basin emissions and would not conflict with the applicable air quality plan. As a result, the construction impact related to a conflict with or obstruction of implementation of the applicable air quality plan would be **less than significant**.

Operations

Operational activities at Prairie City SVRA have historically included groomed dirt track and trail riding by off-highway motorcycles, motocross bikes, and ATVs and limited off-road course and obstacle driving by 4x4 vehicles. These vehicles all produce exhaust emissions as they burn gasoline and fugitive PM dust as their tires entrain dirt into the air. OHV emissions vary widely based on vehicle type, engine type, activity, speed, and soil moisture content and composition in the SVRA's recreation areas. Additional activities include operation of quarter midget and kart vehicles on paved tracks, which produces exhaust emissions but generates little fugitive dust.

To limit exhaust emissions, State Parks actively enforces California's Red Sticker and Green Sticker Program for off-highway motorcycles and ATVs that operate at Prairie City SVRA. ARB regulations limit the use of OHVs that do not meet emission standards. The California Department of Motor Vehicles implements the regulation by issuing red and green stickers to the owners of noncompliant and compliant/exempt vehicles, respectively. Red stickers are issued for 2003 model year and newer OHVs that are not certified to the emission standards. Green stickers are issued for 2003 model year and newer OHVs that comply with the emission standards, and to all 2002 model year and older OHVs, effectively grandfathering them into the program.

All OHVs with green stickers may be used at any time of the year at any state or federal park that allows OHV use. However, ARB has defined a riding-season schedule for each park that generally limits the use of red-sticker vehicles to specific months, typically the fall, winter, and spring months, when OHV emissions are less likely to adversely affect ambient air quality conditions. Some parks allow the use of red-sticker OHVs year round, but those parks are located in areas that are in attainment of ambient air quality standards. Prairie City SVRA's red-sticker riding season is October 1 through April 30; the use of noncompliant, red-sticker OHVs is prohibited during the summer, which is high-ozone season. Thus, exhaust emissions associated with operation of Prairie City SVRA would not obstruct implementation of the air quality plans.

Fugitive dust is the largest source of PM_{10} emissions at Prairie City SVRA. It is generated by vehicles in the unpaved staging and parking areas of the SVRA, and by OHV tires spinning and lifting soil into the air in the unpaved recreation areas. The soil's silt and moisture content, vehicle weights and speeds, and weather conditions affect the quantity of PM_{10} generated. To limit fugitive dust, Prairie City SVRA would continue to limit vehicle speeds in the unpaved, non-OHV-riding areas (e.g., parking, staging areas). The SVRA also would continue fugitive dust mitigation practices that involve using water and dust suppressants on a regular schedule and as needed; applying moisture retention chemicals to the soil; and amending track soils with sand, topsoil, and rice hulls as needed.

These fugitive dust control activities would be limited to areas easily accessible by water trucks and construction-related equipment, which covers a large majority of the SVRA's recreational activity areas. Because of the planning area's vast acreage, the limited access to riding areas by large water trucks, the lack of large water sources, and the pollution generated by attempting to apply water or suppressants to all riding areas, any additional actions to directly reduce fugitive PM dust emissions from OHV operations would be infeasible or too expensive, or would generate additional emissions of diesel exhaust and fugitive dust from the use of water trucks. In addition, State Parks would implement OM Goal 6 and OM Guidelines 6.1 through 6.7 (shown above in the discussion of construction impacts) to minimize emissions of exhaust and fugitive dust and reduce operational air quality impacts.

Regional air quality plans use local agencies' land use designations and the growth projections in local plans (e.g., general plans and specific plans) to estimate air pollutant emissions for the region. Thus, the regional air quality plan for the SVAB would account for OHV recreational areas and the types and volume of activities at Prairie City SVRA. In addition, adherence to OM Goal 6 and OM Guidelines 6.1 through 6.7 would minimize fugitive dust emissions consistent with the regional air quality plan's emission control measures. Furthermore, the regional air quality plan would account for the Red Sticker and Green Sticker program that would also control OHV emissions. Therefore, expansion of the SVRA riding areas would be consistent with activities expected at this type of facility and with regional population growth assumed in the air quality plan for the SVAB. As a result, the operational impact related to a conflict with or obstruction of implementation of the applicable air quality plan would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.2-2 Violation of an Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation

The construction-related and operational impacts of the General Plan with regard to a potential violation of an air quality standard or substantial contribution to an air quality violation are discussed separately below.

Construction

As discussed in Impact 3.2-1, construction emissions would generally be distributed over the planning area and spread out over many years, limiting ambient concentrations of air pollutants and the potential to contribute to or cause violations of air quality standards. However, in cases when construction activities would be concentrated in time and area, the exhaust and PM_{10} fugitive dust generated could contribute to a violation of an air quality standard. During construction of facilities envisioned in the General Plan, however, State Parks would implement OM Goal 6 and OM Guidelines 6.1 through 6.7 from the General Plan (shown above in the “Construction” discussion under Impact 3.2-1) to limit the generation of exhaust and fugitive PM dust emissions.

With adherence to these General Plan guidelines, construction emissions would be reduced to a level less than the applicable SMAQMD thresholds of significance. Therefore, the construction-related impact related to violation of an air quality standard or substantial contribution to an existing or projected air quality violation would be **less than significant**.

Operations

Activities at Prairie City SVRA would generate emissions of criteria pollutants as long as the site continues to be used for OHV recreation as described and envisioned in the General Plan. Mobile sources of criteria pollutants would include increased use of OHVs, site maintenance activities, and trips to and from Prairie City SVRA by SVRA staff members and visitors. Attendance at the SVRA and associated operational emissions depend on overall trends in OHV use and the types of OHVs that are preferred, demographic and population changes, economic conditions, and other factors beyond land acquisition, special events planning, facilities improvements, and other aspects of General Plan implementation. Table 3.2-3 lists baseline operational emissions from 2013 and projected future (2030) operational emissions. The totals are expressed in terms of daily emissions (in lb/day).

Visitor counts and park usage can vary substantially from year to year, resulting in considerably different quantities of air emissions. In 2013, approximately 56,680[1] vehicles and 141,701 people visited Prairie City SVRA, representing 32.4 percent higher attendance than the annual average of 107,009 visitors observed from 1990 to 2013. The year 2013 emissions are shown with the projected (2030) future emissions and the net change in Table 3.2-3. To provide a comparison, data were also collected from 2004, the year during the same 24-year period that saw the highest attendance level (approximately 77,332 vehicles, 193,330 visitors, and 126,699 OHVs).

Table 3.2-4 shows the year 2004 emissions estimates along with the projected future (2030) operational emissions. The visitor estimates for 2030 were derived by starting with the 2013 visitor count and applying the California Department of Finance’s forecasted annual population growth factor for El Dorado County (the county east of the planning area, with a higher forecasted growth rate than Sacramento County). This calculation produced an estimated annual total of 168,481 visitors, or approximately 67,392 vehicles and 110,414 OHVs annually, for an average of 9,108 OHVs per month. Over just the past 2 years, 2012–2013, the average monthly attendance was 7,150 OHVs. The El Dorado

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[1] Visitor estimates assumed 2.5 passengers per vehicle, which was the average passenger occupancy per vehicle at Prairie City SVRA over a 2-year period (i.e., 2012 and 2013).

Table 3.2-3. Baseline (2013) and Projected (2030) Operational Emissions of Air Pollutants

	Daily Emissions (lb/day)[1]				
Source	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Baseline Mobile Sources (2013)					
Visitor vehicles	0.9	3.4	29	0.03	0.03
OHVs	43.1	4.49	257	1.24	0.55
Fugitive dust	–	–	–	254	24.9
Baseline Subtotal	*44*	*7.9*	*286*	*255*	*25.4*
Projected Mobile Sources (2030)					
Visitor vehicles	0.19	1.1	9.8	0.03	0.02
OHVs	40.7	5.54	235	0.86	0.65
Fugitive dust	–	–	–	274	26.9
2030 Subtotal	*41*	*6.6*	*245*	*275*	*27.6*
Net Change in Total Emissions	**-3**	**-1**	**-41**	**20**	**2**
SMAQMD Significance Threshold	65	65	–	80	82
Exceeds Project Threshold?	***No***	***No***	***NA***	***No***	***No***

Notes: CO = carbon monoxide; lb/day = pounds per day; NA = not applicable; NO_X = oxides of nitrogen; OHV = off-highway vehicle; PM_{10} = particulate matter 10 micrometers in diameter or less; $PM_{2.5}$ = particulate matter 2.5 micrometers in diameter or less; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District

See Appendix B of this DEIR for detailed assumptions and emissions calculations.

[1] Emissions calculated for annual operating conditions at Prairie City SVRA using on-site activity data and the EMFAC2011 and RV2013 emissions models and AP-42 emission factors for fugitive dust.

Source: Data modeled by AECOM in 2014

County growth rate is estimated to be approximately 1.02 percent while the rate for Sacramento County is estimated to be slightly lower at 0.89 percent, which makes this method conservative. Selecting a less conservative growth rate, one more likely to represent actual future attendance based on a trend of gradually decreasing attendance over the past 10 years, or selecting a different baseline year could produce a negative net change in emissions for all pollutants. As in Table 3.2-3, the totals in Table 3.2-4 are expressed in terms of daily emissions (in lb/day).

If 2004 was used as the baseline year, the net change in emissions by 2030 would actually be negative for NO_X, ROG, carbon monoxide, PM_{10} and $PM_{2.5}$ because of a slight shift in vehicle types from two-stroke to four-stroke (four-stroke engines are cleaner than two-stroke engines), cleaner overall vehicles (namely on-road), and cleaner burning fuels offsetting increases in vehicle miles traveled. Similarly, the 2013–2030 net change would be negative for NO_X, ROG, and CO, but a slight net increase would be expected for PM_{10} and $PM_{2.5}$.

Table 3.2-4. Alternate Baseline (2004) and Projected (2030) Operational Emissions of Air Pollutants

Source	Daily Emissions (lb/day)[1]				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Baseline Mobile Sources (2004)					
Visitor vehicles	3.9	12.0	94	0.12	0.10
OHVs	68	6.2	346	0.99	0.75
Fugitive dust	–	–	–	342	33.5
Baseline Subtotal	*72*	*18.2*	*440*	*343*	*34.4*
Projected Mobile Sources (2030)					
Visitor vehicles	0.19	1.1	9.8	0.03	0.02
OHVs	40.7	5.54	235	0.86	0.65
Fugitive dust	–	–	–	274	26.9
2030 Subtotal	*41*	*6.6*	*245*	*275*	*27.6*
Net Change in Total Emissions	**-32**	**-12**	**-195**	**-68**	**-7**
SMAQMD Significance Threshold	65	65	–	80	82
Exceeds Project Threshold?	***No***	***No***	***NA***	***No***	***No***

Notes: CO = carbon monoxide; lb/day = pounds per day; NA = not applicable; NO_X = oxides of nitrogen; OHV = off-highway vehicle; PM_{10} = particulate matter 10 micrometers in diameter or less; $PM_{2.5}$ = particulate matter 2.5 micrometers in diameter or less; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District

See Appendix B of this DEIR for detailed assumptions and emissions calculations.

[1] Emissions calculated for annual operating conditions at Prairie City SVRA using on-site activity data and the EMFAC2011 and RV2013 emissions models and AP-42 emission factors for fugitive dust.

Source: Data modeled by AECOM in 2014

For 2013–2030, the net increase in PM_{10} and $PM_{2.5}$ emissions with General Plan implementation would be less than SMAQMD's thresholds of significance. The primary source of PM_{10} and $PM_{2.5}$ emissions would be the operational fugitive dust generated by on-site OHV use. The quantities of PM_{10} and $PM_{2.5}$ emissions shown in Tables 3.2-3 and 3.2-4 are very conservative and involve many factors, and because of current uncertainties about future attendance, emissions could be much less than estimated.

EPA AP-42 emission factors were developed from data collected from heavy-duty trucks on industrial roads. Because of differences between the vehicles, namely the number of wheels, tire widths, speeds, and weights, these emission factors may not be ideal for representing OHV emissions of fugitive dust. However, the AP-42 factors are the best available and most widely accepted resource for calculating fugitive dust emissions on unpaved roads, and SMAQMD does not have defined methodologies for estimating fugitive dust generated by OHV use. Furthermore, the PM_{10} generated by OHV tires would be entrained into the air behind the vehicles, but under the region's normal weather conditions, the PM_{10} emitted would typically fall back to the ground within a short distance and would be highly unlikely to leave the large, 1,115-acre planning area. Emissions also would continue to be distributed across the daily operating hours of Prairie City SVRA, which range from 9 hours per day for the core winter months to 12 hours per day in the midsummer months, reducing the likelihood of significant fugitive dust generation events attributable to OHV activity.

The terrain and vegetation also would help limit the transport of fugitive dust. Another factor that naturally limits the generation of fugitive dust is that approximately 77 percent of the annual average OHV activity occurs in the red sticker months, October 1–April 30, when the terrain is more likely to be wet from seasonal rains and condensation caused by cooler temperatures.

Lastly, for comparison, the Bay Area Air Quality Management District has PM_{10} and $PM_{2.5}$ significance thresholds of 82 and 54 lb/day, respectively. The net increases estimated for Prairie City SVRA would be substantially below the thresholds established by the Bay Area Air Quality Management District, a district with a much larger population and higher emissions levels.

As described above, daily PM_{10} and $PM_{2.5}$ emissions would increase slightly between the 2013 base year and 2030. However, the estimates included in Tables 3.2-3 and 3.2-4 show that SMAQMD thresholds would not be exceeded; fugitive dust control activities would be performed daily, weekly, seasonally, and annually; and fugitive dust emissions would be distributed spatially and temporally throughout the SVRA and across all hours of the day. Based on these factors and a comparison of the increases against thresholds for a neighboring region, the operational impact of the General Plan on air quality attributable to emissions of fugitive PM dust would be considered less than significant. Therefore, the operational impact related to violation of an air quality standard or substantial contribution to an existing or projected air quality violation would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.2-3 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)

As discussed in Impact 3.2-2, construction and operational activities at Prairie City SVRA would result in less-than-significant project-level impacts with respect to regional thresholds of significance. Although the region is designated as nonattainment for the federal and state ozone and $PM_{2.5}$ standards and nonattainment for the state PM_{10} standard and all emissions in the region would contribute on a cumulative basis to these existing nonattainment statuses, this impact evaluates whether a project's contribution is considered cumulatively considerable. Projects that would generate air pollutant emissions exceeding applicable thresholds of significance would be considered to generate emissions greater than the limit at which the region can attain and maintain ambient air quality standards, and thus would be cumulatively considerable. The following analysis evaluates the construction and operational emissions from General Plan implementation separately to determine whether they constitute a cumulatively considerable contribution.

Construction

Construction of facilities envisioned in the General Plan would generate emissions of ozone precursors and fugitive PM dust that would contribute to regional emissions. However, implementation of General Plan OM Goal and Guidelines 6.1 through 6.7 would limit the generation of exhaust and fugitive PM dust emissions.

As discussed in Impact 3.2-2, implementation of the General Plan guidelines listed above would ensure that construction-related emissions would be reduced to a less-than-significant level on a project level. Therefore, because the construction-related emissions associated with General Plan implementation would not exceed the applicable SMAQMD thresholds of significance on a project level, they would not be considered a cumulatively considerable contribution to existing air quality. This impact would be **cumulatively less than significant**.

Operation

Operational activities at Prairie City SVRA would generate air pollutant emissions associated with recreational OHV activities, visitors coming to and leaving the SVRA, and periodic maintenance activities. As shown in Tables 3.2-3 and 3.2-4, operation of Prairie City SVRA under the General Plan would not generate a net increase in operational emissions of NO_X (i.e., ozone precursors), PM_{10}, or $PM_{2.5}$ that would exceed SMAQMD's thresholds of significance. Therefore, the General Plan's operational ozone precursor (PM_{10} and $PM_{2.5}$) emissions would not be considered a cumulatively considerable contribution to the nonattainment status of the SVAB. As a result, the operational impact would be **cumulatively less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.2-4 Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

Some members of the population are especially sensitive to emissions of air pollutants and should be given special consideration during the evaluation of a project's air quality impacts. These people include children, older adults, those with preexisting respiratory or cardiovascular illness, and athletes and others who exercise frequently. Sensitive receptors typically consist of residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The construction-related and operational impacts of the General Plan with regard to exposure of sensitive receptors to substantial pollutant concentrations are discussed separately below.

Construction

Because of the rural location of the planning area, the nearest sensitive receptors are residential neighborhoods located approximately 2 miles north and southwest of the planning area boundaries and schools located more than 2.5 miles north of the planning area boundaries, well beyond significant air pollution impact distances. In April 2005, ARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB 2005). This handbook is intended to guide local governments in siting sensitive land uses near sources of air pollution. Studies have shown that public exposure to air pollution can be substantially elevated near freeways and certain other facilities, such as ports, rail yards, and distribution centers. Specifically, the *Air Quality and Land Use Handbook* focuses on risks from emissions of particulate matter exhaust from diesel-fueled engines (diesel PM), a known carcinogen, and establishes recommended siting distances from sensitive receptors. With respect to freeways, the handbook recommends: “Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with more than 100,000 vehicles per day or rural roads with 50,000 vehicles/day.” ARB notes that these recommendations are advisory and should not be interpreted as defined buffer zones, and that local agencies must balance other considerations such as transportation needs, the benefits of urban infill, community economic development priorities, and other quality-of-life issues.

The most likely source of TAC emissions during construction of new facilities and the grading of terrain would be diesel PM from heavy-duty equipment. Additional diesel PM emissions associated with construction material delivery trucks would occur along the main roadway providing access to Prairie City SVRA, which distributes truck emissions over a broad area. For the vehicles on-site, construction activities would occur at various locations around the planning area, making them less concentrated. In addition, during construction of facilities and grading of terrain as envisioned in the General Plan, State Parks would implement OM Guideline 6.6 from the General Plan to evaluate the health risk impacts of construction activities within 500 feet of residences and implement measures to reduce impacts if found to exceed applicable thresholds. As determined by ARB, PM emissions from large roadways have been shown to drop approximately 70 percent at 500 feet from the emissions source (ARB 2005). Emissions from construction activities would be not be as intensive or continuous as emissions from a large roadway source; therefore, the buffer distances and resulting analyses and measures in OM Guideline 6.6 are anticipated to be sufficient to reduce potential construction TAC emissions to a less-than-significant level. Construction emissions also would be spread out over the next 10–15 years and the 1,115-acre site, and for each individual project, construction activities would be temporary and intermittent as vehicles work in certain areas for limited amounts of time and do not operate continuously through each day. Considering these factors, construction-related impacts from exposure of sensitive receptors to pollutant concentrations would be **less than significant**.

Operations

Because of the distributed nature of OHV use throughout the planning area, the likelihood that substantial pollutant concentrations would build up in any one location is very low. In addition, operational activities associated with the General Plan would involve primarily gasoline-fueled OHVs, which have considerably lower TAC emissions than diesel-fueled vehicles and do not emit diesel PM. Further, the OHV activities would occur throughout Prairie City SVRA. Therefore, is anticipated that the minimal TAC emissions associated with operations under the General Plan (i.e., OHV use) would be spread around the SVRA and substantial concentrations would not be generated near sensitive receptors. As a result, sensitive receptors would have limited exposure to TAC emissions during operational activities associated with the General Plan, and the operational impacts of exposure of sensitive receptors to pollutant concentrations would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.2-5 Potential for Objectionable Odors Affecting a Substantial Number of People

The occurrence and severity of odor impacts depend on numerous factors such as the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. Offensive odors rarely cause physical harm, but they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. The construction-related and operational impacts of the General Plan with regard to potential for objectionable odors affecting a substantial number of people are discussed separately below.

Construction

Specific construction activities have not been finalized for the 1,115-acre planning area, nor has a timeline been established for determining when the potential construction phases would occur. However, the proposed construction activities are expected to involve using large trucks to bring materials to the site and heavy-duty diesel equipment to grade terrain and build facilities and structures at multiple small-scale locations during short time periods. Therefore, construction activities are not anticipated to be highly intensive (e.g., with multiple pieces of equipment continuously operating for long periods) and would be dispersed throughout the planning area.

Exhaust from the expected types of vehicles and equipment has the potential to produce objectionable odors. Prairie City SVRA is located in a rural setting and there is a lack of off-site receptors near the site. For the on-site residential receptors, it is anticipated that construction activities would be relatively low intensity and spread throughout the planning area, thereby reducing the possibility of large concentrations of exhaust emissions affecting receptors. In addition, construction activities occurring near the on-site residences are anticipated to be trail construction or other nonintensive and temporary construction activities. Therefore, it is not anticipated that these relatively low-intensity, dispersed, and short-term construction activities would expose the residences to substantial odor emissions. Accordingly, odors from construction would be dispersed and would not affect a substantial number of people. The construction-related odor impact would be **less than significant**.

Operations

The use of OHVs at Prairie City SVRA would produce odors in the form of tailpipe exhaust. However, the extent of the odors would be limited to areas with vehicle use and would be distributed throughout the planning area. In addition, the nearest off-site sensitive receptors are privately owned residential properties, but they are located significant distances from the planning area and no odor impacts would occur.

Three State Parks caretaker residences are located within the planning area. The nearest home, including the Prairie City SVRA caretaker residences, would be located near (i.e., within 100 feet in some cases) the proposed OHV use areas. However, OHVs would not congregate, engage in substantial activities, or idle near those residences. In other words, OHVs could pass by the residences, but it is highly unlikely that substantial activities that would generate a potential odor impact would occur near the homes. Therefore, odors generated by operational activities at Prairie City SVRA would not affect a substantial number of people. The operational impact related to odors would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.2.5 SUMMARY OF SIGNIFICANT IMPACTS

Implementing the Prairie City SVRA General Plan and constructing additional facilities for recreational activities and new buildings to modify or move existing SVRA facilities could result in significant air quality impacts from emissions of exhaust and fugitive PM dust. In addition, if several construction activities would be performed at the same time, in the same general vicinity, and near sensitive receptors, a significant impact could result from construction of the potential facilities (General Plan Section 4.3.2). However, construction is anticipated to occur over many years and would be distributed throughout the planning area. Construction activities also would be temporary and a project-level environmental analysis would be conducted for all construction projects located within 500 feet of residences. These factors, combined with adherence to General Plan policies, would not result in significant construction-related impacts on air quality.

Operational emissions of fugitive PM dust from OHV activities would occur in designated areas within the planning area, limiting the impact on sensitive receptors. Because of the large area of the SVRA and because OHV activities would occur primarily in the center of the site, it is not anticipated that fugitive PM dust emissions would travel off-site and affect a substantial number of people. Regional air quality plans would not be affected by the potential increase in fugitive PM dust emissions because the projected emissions are based on the same population growth figures used in the development of the plans. As shown in Tables 3.2-3 and 3.2-4, the long-term net change in operational emissions with General Plan implementation would not exceed SMAQMD’s threshold of significance. Furthermore, project emissions would remain localized to Prairie City SVRA because of the large mass associated with PM_{10}, which causes the particles to fall out of the atmosphere quickly under normal weather conditions at the SVRA. The terrain, vegetation, and large park area would also limit the amount of PM_{10} that would travel beyond the boundaries of Prairie City SVRA. In accordance with the information described above, long-term operational activities associated with the Prairie City SVRA General Plan would not result in significant air quality impacts.

3.2.6 MITIGATION MEASURES

No significant impacts on air quality would result with implementation of the Prairie City SVRA General Plan with implementation of OM Guidelines 6.1 through 6.7, designed to limit PM_{10} and $PM_{2.5}$ emissions. These measures focus on limiting emissions of exhaust and fugitive PM dust during subsequent construction activities, and on limiting the proximity of construction-related and operational activities associated with the Prairie City SVRA General Plan. Fugitive PM dust emissions from construction also would be naturally mitigated by the distributed nature of the activities throughout Prairie City SVRA, and during short periods of time over the course of several years. Therefore, potential significant impacts would be reduced to a less-than-significant level. No mitigation is required.

3.3 BIOTIC RESOURCES

This section briefly describes existing conditions and the federal, state, and local regulatory framework in the planning area and analyzes the potential impacts of implementing the Prairie City State Vehicular Recreation Area (SVRA) General Plan on biotic resources.

3.3.1 EXISTING SETTING

Prairie City SVRA has been used as an off-highway vehicle (OHV) recreation area since the early 1970s. Currently, Prairie City SVRA encompasses 1,115 acres, characterized by slightly undulating terrain. Evidence of past land use from Aerojet and mining/dredging operations are readily apparent. Buildings/structures from past Aerojet use remain, and cobbles from dredge tailings shape much of the topography. These past land uses have resulted in various levels of disturbance to biological resources. In general, the current quality of habitat in the planning area is directly related to the past land uses and the current OHV ridership for a given area. Portions of the SVRA that are currently off limits to OHV riding (i.e., the Yost property and Barton Ranch acquisition area) have also been disturbed by past land uses.

Section 2.3.2, “Biotic Resources,” of the General Plan provides a detailed description of the biotic resources (e.g., habitats, common and special-status plant and wildlife species, sensitive natural communities) that occur in Prairie City SVRA. Figure 2-16 and Table 2-7 in the General Plan show the location and extent and list the acreage of habitats found in the planning area. The following biotic resources in the planning area are particularly important:

- existing aquatic resources (vernal pools, marsh/palustrine, streams, and creeks; Figure 2-16 in the General Plan);
- special-status plants (Table 2-7 in the General Plan); and
- special-status wildlife (Table 2-8 in the General Plan).

3.3.2 REGULATORY SETTING

Biotic resources are subject to various federal, state, and regional plans, policies, regulations, and laws. Section 2.7, “Planning Influences,” of the General Plan summarizes the plans, policies, regulations, and laws related to biotic resources at Prairie City SVRA. In particular, Section 2.7.1, “Systemwide Planning,” describes the systemwide Wildlife Habitat Protection Program and the Habitat Monitoring System (HMS) used to monitor, evaluate, and manage habitats within each SVRA. Section 2.7.3.1, “Natural Resources Regulations,” of the General Plan describes the following laws and regulations:

- the federal Endangered Species Act (ESA);
- the Migratory Bird Treaty Act;

- Sections 404 and 401 of the Clean Water Act (CWA);
- the California Endangered Species Act (CESA);
- the California Fish and Game Code regarding fully protected species, protection of bird nests, and streambed alteration agreements;
- California Rare Plant Rank species designations; and
- the Porter-Cologne Water Quality Control Act.

3.3.3 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact on biotic resources if it would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a special-status species in local or regional plans, policies, or regulations, or by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW);
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including marshes and vernal pools) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any county or municipal policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved governmental habitat conservation plan.

ISSUES NOT DISCUSSED FURTHER IN THIS DEIR

Because Prairie City SVRA is owned and operated by the State of California, it is not subject to local policies or ordinances. Nonetheless, the Off-Highway Motor Vehicle Recreation (OHMVR) Division of State Parks intends to manage Prairie City SVRA in a manner compatible with the values expressed by the surrounding community. Therefore, these policies and ordinances were considered during development of the General Plan goals and guidelines, and in this environmental evaluation. Because the General Plan was developed to preserve biotic resources on-site, no conflict with local ordinances would result. This issue is not discussed further in this draft environmental impact report (DEIR). No established wildlife corridors are located in the planning area; therefore, this issue is not discussed further in this DEIR.

The planning area is within the proposed plan area for the *South Sacramento Habitat Conservation Plan* (SSHCP) (Sacramento County 2013). The SSHCP currently is under development and has not been finalized and adopted. Furthermore, Prairie City SVRA is identified as an existing recreation area under the current working draft of the SSHCP, and implementing the General Plan would not change that land use. State Parks is not a signatory to the proposed SSHCP. Therefore, no conflicts would occur between the General Plan and any adopted habitat conservation plan or natural community conservation plan. This issue is not discussed further in this DEIR.

3.3.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

The analysis considered potential impacts of General Plan implementation on biotic resources in the planning area based on information from regulatory agency databases about the status and distribution of special-status plants and wildlife and sensitive habitats in the region, past studies performed at Prairie City SVRA, and applicable regional planning documents.

The use areas and conceptual locations of the potential facilities were developed through a careful screening process of constraints mapping, based on the location of known sensitive biological resources. Some use areas, such as the vernal pool management use area, have very few allowable uses and are subject to specific resource management requirements. The use areas presented in the General Plan were chosen to avoid those sensitive biological resources that are present. These proposed facilities allowable in each use area would be sited to maximize the quality of OHV recreational experiences while avoiding or minimizing impacts on sensitive biological resources and conserving natural resources in the most sensitive areas.

Information sources include the following:

- CDFW California Natural Diversity Database (CNDDB 2014)
- USFWS Endangered and Threatened Species and Critical Habitat Database (USFWS 2014)
- California Native Plant Society Inventory of Rare and Endangered Plants of California (CNPS 2015)
- Habitat monitoring reports and biological surveys for Prairie City SVRA (State Parks n.d.[a], n.d.[b], n.d.[c], n.d.[d], n.d.[e], 2005)

- Aquatic vernal pool species focused surveys (LSA Associates 2003; State Parks n.d.[b]; Jones & Stokes Associates 1994 and Brittan 1996, both cited in State Parks n.d.[d])

- *Folsom South of U.S. 50 Specific Plan Project Public Draft EIR/EIS* (City of Folsom and USACE 2010)

- *Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan, Grading Permit, Encroachment Permit, and Development Agreement Final Environmental Impact Report* (DERA 2010)

A biological resource assessment was conducted in July 2013 (State Parks 2013). The assessment classified existing vegetation/habitat communities, included a reconnaissance-level plant and wildlife survey, and verified findings from past studies and reports. In 2014, AECOM biologists performed additional vegetation/habitat characterization (including wetland mapping) of the Barton Ranch acquisition area and Yost property (AECOM 2014). Together, these studies covered the entire planning area and used on-the-ground surveys and aerial-photograph interpretation to classify vegetation and habitat types at the SVRA.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.3-1 Potential Loss or Disturbance of Riparian Habitat or Special-Status Natural Communities

CDFW maintains a list of plant communities that are native to California. On that list, CDFW identifies special-status natural communities (sensitive natural communities), defined as communities that are of limited distribution statewide or in a county or region and often are vulnerable to the environmental effects of projects. CDFW has listed two special-status habitats within 5 miles of the planning area (CNDDB 2014): northern hardpan vernal pools and valley needlegrass grassland. Only northern hardpan vernal pools (hereinafter referred to as “vernal pools”) have been documented within the planning area’s boundaries. Western vernal pools are waters of the United States according to the “Clean Water Rule: Definition of Waters of the United States (Final Rule)” (80 *Federal Register* 37054, June 29, 2015); they also fall under the “waters of the state” definition under the Porter-Cologne Water Quality Control Act and are recognized by CDFW as a special-status natural community.

Most of the vernal pools in the planning area are concentrated in areas designated by the General Plan as vernal pool management use areas that would not be open to OHV recreation. Only passive recreation such as picnicking, wildlife viewing, and guided vernal pool interpretive hikes would be allowed in these areas. Therefore, most vernal pool habitat in the planning area would not be subject to potential adverse effects from OHV activities or development. Potential impacts on all jurisdictional water features resulting from construction as foreseen in the General Plan are discussed in detail below under

Impact 3.3-3. Vernal pools also provide habitat for species protected under the ESA and CESA. Potential impacts on protected vernal pool plants and wildlife are discussed below under Impact 3.3-4.

Cottonwood/willow forest is included on CDFW's list of special-status natural communities. Cottonwood/willow stands are scattered throughout the SVRA, especially in low-lying areas created by previous dredging operations, along marsh banks, and within the Yost property in the northern portion of the SVRA. Small basins supporting marsh/palustrine habitat are located within the cottonwood/willow stands in the planning area; however, the cottonwood/willow vegetation present is not associated with lakebeds or streambeds and banks as generally required for jurisdiction under Section 1602 of the California Fish and Game Code. Nonetheless, stands of cottonwood/willow forest vegetation provide important functions and values for wildlife (e.g., nesting, foraging, and shelter). This community type is ranked as vulnerable to extirpation in California because of steep statewide declines. CDFW would likely consider impacts on cottonwood/willow forest as an impact on important wildlife habitat when reviewing the project as a trustee agency under CEQA. Removal of sensitive habitat is considered to be a significant impact under CEQA. Removal of functionally intact special-status natural communities or sensitive habitats, such as the larger cottonwood/willow stands or vernal pools in the northwest portion of the planning area, would be a significant impact.

Oak woodlands are present in the southeast corner of the planning area (Barton Ranch) and in the eastern riding area. These oak woodlands are characterized by blue oaks and interior live oaks. Although blue oak woodland is not a sensitive natural community on CDFW's list of special-status natural communities, blue oak woodland provides important wildlife functions and values. State Parks actively protects blue oaks at Prairie City SVRA and would consider removal of a blue oak woodland (beyond single trees) a significant impact on a sensitive natural community.

Activities foreseen in the General Plan could directly fill and remove vernal pools, directly affect cottonwood/willow stands, and adversely affect oak woodland. Activities also could indirectly degrade habitat quality. These impacts would constitute a potentially significant impact.

Implementation of guidelines associated with IE Goal 3, NRM Goals 1 and 2, Plant Goal 1, Wildlife Goal 1, and Water Goals 1 and 2 and their associated guidelines in the General Plan would minimize the potential for future development and operations to cause potentially significant impacts on the sensitive habitats and special-status natural communities in the planning area. The applicable goals and guidelines for protecting riparian habitat and other sensitive habitats are as follows:

IE Goal 3: Expand understanding of ecological relationships and heighten awareness of and sensitivity to human impacts.

- **IE Guideline 3.1:** Work with interested parties to provide education about the natural ecosystem processes at the SVRA.

- **IE Guideline 3.2:** Provide opportunities for visitors to gain an understanding of the SVRA's diverse natural resources, including vernal pools, oak woodland, and grassland. Interpret local ecology and explain vulnerabilities of sensitive biological resources to human disturbance.

- **IE Guideline 3.3:** Highlight opportunities for OHV recreationists to minimize their impacts on natural resources through engaging, creative interpretive programming. Provide information about temporary and rotating area closures to encourage visitors to allow natural regenerative processes to occur in these areas; foster an understanding about the benefits of these closures.

NRM Goal 1: Manage the SVRA for a balance of uses that allow protection and stewardship of natural resources while maintaining a quality OHV recreational experience.

- **NRM Guideline 1.1:** Locate visitor-serving facilities in prior disturbed areas or in areas of relatively low resource value to minimize disturbance to higher value habitat areas.

- **NRM Guideline 1.2:** Conduct site-specific surveys/mapping of sensitive biological resources (such as special-status species and sensitive habitats) before planning new visitor-serving or operations facilities, or expanding or relocating existing ones. Consider the location and extent of these resources during the planning and design process. Design the route and trail system in the northern portion of the planning area to avoid vernal pools. Avoid affecting sensitive biological resources during planning, design, and construction. Utilize fencing and other methods to exclude public access in the vernal pool management use areas and other environmentally sensitive areas, as necessary. Conduct worker environmental awareness training for construction personnel before construction.

- **NRM Guideline 1.3:** In the event that disturbing a sensitive biological resource is unavoidable, minimize the disturbance to the minimum area necessary to achieve the project purpose. Identify and implement measures to offset impacts in consultation with a qualified biologist and the appropriate resource agencies (e.g., CDFW, USFWS, the U.S. Army Corps of Engineers [USACE], and the Central Valley Regional Water Quality Control Board [RWQCB]), depending on the listing or protection status of the resource.

- **NRM Guideline 1.4:** Continue to implement the OHMVR Division's HMS consistent with State Park resource management directives, and with the specific biological provisions that outline management programs for working with natural processes of vegetation succession, controlling the spread of noxious and invasive weeds, and protecting natural wildlife habitat. Use the HMS as a tool to aid in the implementation of park-specific monitoring and adaptive management, with a focus on trends in percent habitat cover, focal species distribution and abundance, and comparisons between riding and nonriding areas. When completed, incorporate use of the HMS data management system to accumulate, standardize, and analyze records of plants, animals, and habitats in the planning area and guide adaptive management.

- **NRM Guideline 1.5:** Focus new trail development in areas of relatively low habitat value. Route new trails around the edges of high-quality habitat and include buffers to avoid habitat fragmentation. Determine the size of the buffers based on site-specific conditions and the habitat requirements of the species that may use the habitat and buffers, in communication with appropriate trustee and responsible agencies, such as CDFW, USACE, and USFWS. Where high-quality habitats being avoided are close to each other, size the buffers to provide connectivity between the habitats.

NRM Goal 2: Encourage a balance of uses that allow for the restoration or enhancement of natural habitats while maintaining a quality OHV recreational experience.

- **NRM Guideline 2.1:** Implement an adaptive management plan for biological resources that combines the results of monitoring implemented through the HMS (NRM Guideline 1.4) and monitoring for soil conservation (Soils Guideline 1.1) to allow natural regenerative processes to occur.

- **NRM Guideline 2.2:** Implement adaptive management, including temporary or rotating closures, invasive species management, and habitat enhancement, to allow natural regenerative processes to occur in areas that contain natural habitats that will not be subject to repeated disturbance; enact these measures proactively. Use signage to inform visitors of areas that contain sensitive biological resources or are closed. Use interpretive materials to inform visitors of habitat enhancement and restoration activities to promote environmental stewardship.

- **NRM Guideline 2.3:** Manage SVRA landscapes to preserve natural vegetation and to enhance native California plant communities and associated habitat functions and values. Management strategies include habitat restoration and enhancement; invasive species management; focused propagation of desired species; fencing or other barriers to protect sensitive habitats such as riparian areas, to maximize natural recruitment of riparian species; controlled burns; or other management techniques proven beneficial to the maintenance of healthy natural ecosystems.

- **NRM Guideline 2.4:** Apply state-of-the-art science, as defined at the time of implementation, and ecological knowledge to the management of natural communities and associated habitat functions at the SVRA, particularly in the vernal pool management use area. Management strategies shall take current science and results from ongoing management and research into consideration. OHMVR Division environmental scientists shall conduct research and coordinate studies with research at other SVRAs, as appropriate.

Plant Goal 1: Manage the SVRA for a balance of uses that allow protection of special-status plants and sensitive natural communities while maintaining a quality OHV recreational experience.

- **Plant Guideline 1.1:** Conduct protocol-level surveys for special-status plants on the sites of proposed trails and facilities during the planning and design process. Conduct the surveys during the blooming season for all potentially occurring special-status plant species according to the most current methodology recommended by CDFW and USFWS, depending on the listing status of the species. A qualified botanist familiar with the flora of Sacramento County shall conduct the surveys.. Document the survey results in a written report submitted to the OHMVR Division. Map the location and extent of all occurrences of special-status plant species encountered during the surveys and maintain the data in the SVRA's Geographic Information System database. If construction is delayed, repeat special-status plant surveys every 5 years to ensure that data are current and account for long-term and seasonal variation.

- **Plant Guideline 1.2:** Prohibit impacts, including ground disturbance, trail construction, facility construction, or public access, on occurrences of special-status plants if any are found during project implementation.

- **Plant Guideline 1.3:** Use drought-tolerant plants, and whenever feasible, use plants native to the site for landscaping. Select plants that require little or no irrigation. If irrigation is required for plant establishment, use temporary irrigation methods that allow a gradual tapering off of watering over a 3- to 5-year period. Regulate water pressure at a level that applies sufficient water without causing erosion, damage to plants, or runoff.

- **Plant Guideline 1.4:** Monitor for existing and/or incipient populations of invasive weeds annually. If new invasive weeds are documented, implement actions to prevent their establishment and spread before they become established or occupy large portions of the SVRA. Maintain weed management practices for the SVRA consistent with OHMVR Division policies or other applicable guidance and based on best available science.

- **Plant Guideline 1.5:** Prohibit removal of native trees unless the health of the tree warrants removal. Trees that must be removed to accommodate the siting of facilities will be replaced elsewhere in the SVRA. At both new and existing facilities, avoid root compaction and physical damage to native trees. Conduct restoration or enhancement of native oak woodland at the Barton Ranch acquisition area.

Wildlife Goal 1: Manage the SVRA for a balance of uses that maintain a quality OHV recreation experience while allowing protection of native wildlife species, including special-status wildlife species and their designated habitats.

- **Wildlife Guideline 1.1:** Conduct annual (or more frequent) monitoring as part of the HMS to look for potential signs of active use by American badger, including dens, and signs of active use by burrowing owls. If signs are detected during monitoring, consider active management strategies to encourage and preserve use of the site by these species. Such strategies include placing facilities at a distance of 100 feet or greater, as determined appropriate based on consultation with or guidance from CDFW, from any active burrowing owl or American badger dens.

- **Wildlife Guideline 1.2:** Avoid siting new facilities within 250 feet of pools known or later identified to support vernal pool fairy shrimp, vernal pool tadpole shrimp, western pond turtle, or western spadefoot.

- **Wildlife Guideline 1.3:** Avoid siting facilities within 100 feet of elderberry shrub locations. If work or placement of facilities closer to existing shrubs is required, implement appropriate measures, developed in consultation with USFWS, to avoid or compensate for direct and indirect impacts on valley elderberry longhorn beetle within the SVRA.

- **Wildlife Guideline 1.4:** Avoid known breeding locations of all special-status species known to occur in the planning area during the placement of new facilities.

- **Wildlife Guideline 1.5:** Conduct a preconstruction survey of the construction zone and establish an appropriate buffer (as determined by a qualified biologist) within 2 weeks of construction onset if construction activities are planned during the breeding season of common and special-status birds (February 1 through August 15). If breeding birds are documented, establish appropriate buffer zones around the occupied nests to protect the birds until the young have fledged.

- **Wildlife Guideline 1.6:** Ensure that a qualified wildlife biologist conducts focused surveys for Swainson’s hawk nests within 14 days before the start of construction activities if planned during the Swainson’s hawk nesting season (March 1 through August 31). Surveys will be conducted in habitat with potentially suitable nest trees occurring within the project site and within one-quarter mile of the boundaries of the project site. If an active Swainson’s hawk nest is detected during the preconstruction surveys, OHMVR Division staff or its designated representative shall notify CDFW and establish a one-quarter-mile-minimum protective buffer around the nest. No construction activities with potential to disturb nesting Swainson’s hawks will occur within the one-quarter-mile protective buffer until the nest is no longer active or until the qualified biologist, in consultation with CDFW, determines that the proposed construction activities pose no risk of nest abandonment or other disruptions to nesting activities.

- **Wildlife Guideline 1.7:** Develop and implement appropriate measures to avoid or compensate for potential direct and indirect impacts of project-specific activities on special-status amphibians and reptiles in upland habitats if construction activities are planned within suitable upland habitat for special-status amphibians or reptiles (western pond turtle or western spadefoot) and within the known maximum upland dispersal distance of those species from known breeding habitat. Before the start of construction, implement any protection or mitigation measures agreed upon during consultation with the wildlife agencies.

Water Goal 1: Manage the SVRA for the protection of jurisdictional waters of the United States, including wetlands, and waters of the state, while maintaining a quality OHV recreational experience.

- **Water Guideline 1.1:** Avoid locating facilities in areas delineated as jurisdictional waters of the United States, including wetlands; areas that qualify as waters of the state under the Porter-Cologne Water Quality Control Act of 1969, and areas subject to CDFW regulation under California Fish and Game Code Section 1602. Where avoidance is not feasible, such as for trail crossings, design facilities to minimize impacts.

- **Water Guideline 1.2:** Attain no net loss of wetlands functions and values at the SVRA. If impacts on jurisdictional features cannot be fully avoided during CEQA analysis:

  - Determine the acreage of direct impacts (i.e., fill of wetlands) and indirect impacts (i.e., alterations to wetland hydrology) that would result from project implementation, and obtain necessary permits.

  - Provide compensatory mitigation such that the functions and values of all affected wetlands and other waters of the United States, waters of the state, and stream and riparian habitats protected under the California Fish and Game Code are replaced, restored, or enhanced on a “no net loss” basis. Restore, enhance, and/or replace wetland, water, and riparian habitat acreage at a location and by methods agreeable to USACE, the Central Valley RWQCB, CDFW, and/or USFWS as appropriate and depending on agency jurisdiction.

Water Goal 2: Manage the SVRA for the protection of water quality while maintaining a quality OHV recreational experience.

- **Water Guideline 2.1:** Avoid siting facilities in and immediately adjacent to riparian areas or stream corridors and within waters of the United States or the state. Stream corridors shall be managed with vegetated buffers and crossings shall be properly sited for circulation and designed to minimize erosion and other water quality impacts. Culverts or bridge crossings shall be considered in highly erosive areas. Design measures include but are not limited to:

  - armoring approaches,
  - providing sediment traps or filter areas,
  - hardening the crossing surface,
  - protecting the streambanks from vehicle backwash and overflow during flooding, and
  - modifying super elevation (direction of tilt) such that roads and trails drain away from stream corridors.

- **Water Guideline 2.2:** Implement best management practices (BMPs) in operating the SVRA, consistent with the most current water quality management prescriptions. Monitor water quality regularly and implement adaptive management practices as warranted. Adaptive management practices used may include permanent or seasonal area closures, facility redesign, and hillside restoration.

- **Water Guideline 2.3:** Implement all water quality control measures required under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit before, during, and after the construction of facilities proposed and envisioned in this General Plan. Develop a storm water pollution prevention plan (SWPPP), including the identification of BMPs that must be implemented to reduce water quality degradation of receiving waters during and after construction activities. Incorporate construction BMPs from the *OHV BMP Manual for Erosion and Sediment Control* (OHV BMP Manual) or subsequent applicable document, as appropriate.
- **Water Guideline 2.4:** Incorporate permanent water quality control features, as appropriate, when developing detailed plans for facilities proposed and envisioned in this General Plan. As appropriate to designs, incorporate information from the OHV BMP Manual and the *2008 Soil Conservation Standard and Guidelines* (OHMVR Soil Standard) or subsequent amendments, and the Aerojet Feasibility Report for Area 39, which is expected to be completed in 2018 and will contain prescriptive measures designed to help reduce contaminant transport in groundwater. Select water quality control features suitable to site conditions at Prairie City SVRA and consistent with state-of-the art science on water quality management. Avoid direct discharge to receiving water bodies.
- **Water Guideline 2.5:** Improve areas that have experienced substantial erosion from surface water runoff, as determined by annual inspections, to reduce erosion and sedimentation. Implement rehabilitation concepts for these features, as appropriate.
- **Water Guideline 2.6:** Close an area to OHV use if it has been determined that the area cannot feasibly be rehabilitated or reclaimed in accordance with OHMVR Division water quality management standards.
- **Water Guideline 2.7:** Prohibit recreational use of special vehicles and accessories, such as “widowmaker” tires, chained tires, or tracked vehicles, in the SVRA unless special permission is given by the District Superintendent. The District Superintendent has the authority to prohibit use of any vehicle or accessory that is inappropriate in the SVRA.

With adherence to these General Plan goals and guidelines, the potential for loss or disturbance of the vernal pools, cottonwood/willow stands, and oak woodlands in the planning area would be less than significant because OHV riders would be educated on the importance of riding in designated areas outside sensitive habitats; sensitive natural communities would be identified during preproject planning for avoidance, and proposed designs would avoid sensitive features wherever possible; and any unavoidable impacts would be offset through compensation for unavoidable losses, in consultation with the resource agencies (depending on the legal status of the resources), as required by law. This approach would ensure no net loss of vernal pools, cottonwood/willow stands, and oak woodland at Prairie City SVRA. Furthermore, monitoring and adaptive management would be implemented to enhance and/or restore habitats affected by activities implemented under the General Plan.

Therefore, the impacts of General Plan implementation on vernal pools and other special-status habitats would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-2 Potential Loss or Disturbance of Special-Status Plant Species

Although vegetation monitoring surveys and surveys for special-status plant species have been conducted in select locations in the SVRA, to date no planning area–wide focused survey for special-status plant species has occurred. *Legenere limosa* was observed in the vernal pool management area in 2015 (State Parks 2015a). In addition, as shown in Table 2-7 of the General Plan, queries of the USFWS, CDFW, and California Native Plant Society databases identified 10 additional special-status plant species that are known to occur in the vicinity of the planning area. Suitable habitat for all of these species, except Hartweg’s golden sunburst, exists in the planning area. Hartweg’s golden sunburst is associated with a particular soil type not present in the planning area and has a limited known distribution that does not include the planning area. Eight of the potentially occurring special-status plant species are associated with vernal pools.

Activities proposed in the General Plan, such as construction and operation of the proposed activities and facilities (Figures 4-1 and 4-2 of the General Plan), could result in direct loss of or disturbance to special-status plants. With implementation of Plant Goal 1 and the associated guidelines in the General Plan (shown above in the discussion of Impact 3.3-1), future projects would avoid significant impacts on special-status plants.

In addition, the potential for loss or disturbance of special-status plants would not be significant for two reasons. First, special-status plants would be identified through surveys during the planning and design phase, and would be avoided to the greatest extent feasible. Second, when total protection of an identified special-status plant is not feasible, applicable agency consultation and compensation for unavoidable losses would be implemented so that no net loss of occupied habitat or individuals would occur.

With adherence to these General Plan guidelines and coordination with applicable agencies, the impacts of General Plan implementation on special-status plant species would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-3 Potential Fill of Water of the United States, including Wetlands

Wetlands and other waters of the United States mapped in the planning area, consisting of vernal pools, marsh/palustrine habitat, and the four intermittent streams tributary to Coyote Creek and Buffalo Creek, are subject to USACE jurisdiction under Section 404 of the CWA. Therefore, they qualify as sensitive habitats. Four intermittent stream segments traverse the planning area and connect to other waters of the United States outside the planning area. Several seasonal drainages tributary to the four main intermittent streams also are present. Before any fill material may be placed into waters of the United States, a project applicant must apply for a CWA Section 404 permit from USACE.

State Parks mapped vernal pools in the ecological reserve area and buffer zone portions of Prairie City SVRA in 1994 and 1996. In October 2008, a wetland delineation was conducted according to USACE methodology on 716 acres of Prairie City SVRA, which excluded the Yost property and ecological reserve area to the north but included the Barton Ranch property (then proposed for acquisition), totaling 68 acres. USACE concurred in its official determination that 7.44 acres of the delineated area were waters of the United States (USACE 2008, cited in State Parks 2013). This jurisdictional determination expired in October 2013 (see General Plan Section 2.3.2).

During the reconnaissance-level field survey conducted in support of this planning process in 2013, AECOM biologists mapped vernal pools on the Yost property, verified the location and extent of previously identified jurisdictional waters, and recorded new potentially jurisdictional water features in the remainder of the SVRA (State Parks 2013). These features consist of isolated wetlands, vernal pools, ponds and marshes, and stream channels. Informal wetland delineation methods consisted of a visual assessment of two of the three wetland parameters specified in the USACE Wetland Delineation Manual (Environmental Laboratory 1987, cited in State Parks 2013): hydrophytic vegetation and wetland hydrology. The third parameter, hydric soils, was not assessed.

Most of the vernal pools in the planning area would be retained in vernal pool management use areas that would not be open to OHV recreation and would not be subject to potential adverse effects from OHV activities or development. Likewise, the four intermittent streams would be retained on-site in the vernal pool management use areas and stormwater management use areas. However, implementation of the General Plan could cause direct and indirect impacts on jurisdictional wetlands and other waters through construction activities and anticipated operations. Implementation of Water Goals 1 and 2 and associated guidelines in the General Plan would avoid or minimize potential impacts on waters of the United States, including wetlands. The applicable guidelines for protecting wetlands and waters of the United States are Water Guidelines 1.1, 1.2, and 2.1 (shown above in the discussion of Impact 3.3-1).

With adherence to the General Plan guidelines, future development and improvements at Prairie City SVRA, such as construction of water crossings, would avoid or minimize potential impacts on waters of the United States, including wetlands. This impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-4 Potential Impacts on Vernal Pool Special-Status Invertebrates

Numerous vernal pool complexes are present in the planning area. These vernal pools provide habitat for many special-status wildlife species with a unique endemism for vernal pools. In 1994 and 1996, focused vernal pool surveys identified federally listed vernal pool tadpole shrimp and vernal pool fairy shrimp in the planning area. Subsequent surveys in later years (e.g., visual surveys conducted by State Parks during HMS monitoring in 2006) failed to confirm the continued presence of these species; however, vernal pool fairy shrimp were observed during an informal survey in March 2014 (State Parks 2014). Potential facilities envisioned in the General Plan could result in direct or indirect impacts on vernal pools, including those supporting special-status invertebrates. This impact would be potentially significant. However, to address impacts on special-status wildlife that reside in vernal pools, the General Plan includes Wildlife Guideline 1.2, NRM Guidelines 1.3 and 2.4, and IE Guideline 3.2 (shown above within the discussion of Impact 3.3-1), which, with implementation, would minimize potential impacts. For special-status plant species, the potential impacts related to implementation of the General Plan are discussed under Impact 3.3-2.

With implementation of these General Plan goals and guidelines to protect special-status plant and wildlife species, the actions proposed by the General Plan would minimize or offset potential impacts on vernal pool individuals. Therefore, the impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-5 Potential Impacts on Nesting Birds

Several special-status bird species—tricolored blackbird, Swainson’s hawk, burrowing owl, northern harrier, and white-tailed kite—have been observed in the planning area. Two active Swainson’s hawk nests were documented there during surveys conducted in spring 2014 and three nests were observed in 2015 (State Parks 2015b, 2015c, 2015d), and the planning area contains potential nesting habitat for other special-status species and various common bird species. The known Swainson’s hawk nests are located in the northwest portion of the planning area on the Yost property and in the eastern portion near Gate 6. Tricolored blackbird and Swainson’s hawk are listed as threatened under CESA, and nesting birds and raptors are protected under the Migratory Bird Treaty Act and the California Fish and Game Code (see Chapter 2 of the General Plan for a summary of these regulations). Should construction activities be conducted during the nesting season (typically from the beginning of February through the end of August), nesting birds could be directly affected by tree removal and ground disturbance, and indirectly affected by noise, vibration, and other construction-related disturbance that may result in nest abandonment and mortality of chicks or eggs. Therefore, the construction activities may have a potentially significant impact on nesting birds, particularly special-status bird species if they are nesting in the planning area. Operational noise of OHVs may also result in nest abandonment if operation occurs near nest locations.

The General Plan includes NRM Goals 1 and 2 and Wildlife Goal 1 (shown above in the discussion of Impact 3.3-1), which would avoid, minimize, and offset impacts on protected nesting avian species, and would encourage and preserve use by burrowing owls, if present.

In summary, with adherence to these General Plan goals and guidelines, future development and improvements at Prairie City SVRA would minimize potential impacts on nesting birds for the following reasons:

- To the greatest extent feasible, planning and design would locate structures in disturbed areas that would have less value as nesting habitat or away from known nesting locations as indicated in California Natural Diversity Database records or HMS observations.
- Preconstruction surveys would be conducted for activities that would occur during the nesting season, to identify the locations of active bird nests.
- Nest buffers would be used during construction to avoid potential impacts on active nests.

Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-6 Potential Impacts on Valley Elderberry Longhorn Beetle

The elderberry shrub (*Sambucus* spp.) is the obligate host plant of valley elderberry longhorn beetle (VELB), which is federally listed as threatened. This status was reconfirmed in 2014. Numerous elderberry shrubs are found in the planning area, including locations where development may occur under the General Plan, although the beetles themselves are rarely found. There is also some controversy that the method of identifying the presence of beetles by the holes in plants may not be accurate because the holes may be made by another beetle. Construction of new facilities under the General Plan may require ground-disturbing activities within 100 feet of elderberry shrubs, the threshold distance that USFWS has determined may result in take (i.e., harassment, injury, or mortality) of VELB. In addition, trail use near elderberry shrubs may result in indirect impacts because the resulting dust emissions or erosion could affect the health or viability of the remaining elderberry shrubs. Impacts on VELB or their protected host plant, the elderberry shrub, would be potentially significant. The General Plan includes NRM Goal 1 and Wildlife Guideline 1.3 (shown above in the discussion of Impact 3.3-1) that are designed to avoid or minimize and offset potential impacts on VELB and elderberry shrubs.

With adherence to these General Plan guidelines, future development and improvements as specified in the General Plan would avoid or minimize adverse effects on VELB and its habitat. Therefore, the impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-7 Potential Impacts on Western Spadefoot

The western spadefoot is a California species of special concern. It is a nocturnal species that becomes active following relatively warm rains in late winter, spring, and fall. This toad inhabits valley and foothill grassland habitat in areas of open vegetation with short grass and vernal pools. It spends most of the year in underground burrows up to 36 inches deep. During dry periods, the moist soil inside the burrows provides water for adsorption through the skin. Western spadefoot is almost entirely terrestrial, entering water only to breed. Breeding usually occurs during the spring, with the onset of the first heavy rains after warm days. Vernal pools are essential for breeding and egg-laying.

Recent reconnaissance-level surveys and previous herpetofauna surveys did not detect western spadefoot in the planning area. However, suitable habitat exists in the planning area, and implementation of the General Plan could affect western spadefoot (if present) should construction of new facilities or trail placement affect breeding habitat or remove spadefoot-occupied burrows in upland habitat. Western spadefoot individuals also could be injured or killed by OHVs or other equipment on trails or roads in the planning area.

Adherence to guidelines associated with NRM Goal 1 and Wildlife Goal 1 in the General Plan would reduce the potential impact on western spadefoot. NRM Guidelines 1.1 through 1.5 (shown above in the discussion of Impact 3.3-1) is designed to avoid or minimize and offset impacts on sensitive habitats and natural resources. These guidelines call for placing new facilities in previously disturbed areas or areas of low resource value where feasible, taking known locations of sensitive resources into account when siting new facilities, and avoiding or minimizing disturbance to sensitive communities and other natural resources. This would include western spadefoot breeding pools and potential upland refugia habitats. Adherence to Wildlife Guidelines 1.2 and 1.7 (shown above in the discussion of Impact 3.3-1) would avoid siting new facilities within 250 feet of water features known to support western spadefoot. This would avoid direct and indirect impacts on western spadefoot breeding sites. In addition, in accordance with the guidelines, planners would consult with wildlife agencies before the start of construction on any project that may result in impacts on upland habitat potentially supporting special-status amphibians, including western spadefoot. They also would implement appropriate measures to avoid or compensate for direct and indirect project impacts on western spadefoot upland habitat.

Adherence to these General Plan goals and guidelines would allow for future development and improvements while minimizing potentially significant impacts on western spadefoot and its habitat. Potential impacts would be minimized by avoiding western spadefoot breeding habitat during the planning and design phase, and by consulting with wildlife agencies to compensate for impacts when proposed projects have the potential to affect western spadefoot. Therefore, the impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-8 Potential Impacts on Western Pond Turtle

Western pond turtle is a California species of special concern; a petition has been filed for federal listing. Western pond turtle inhabits a variety of aquatic habitats, such as rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters. Aquatic habitat is used primarily for foraging, thermoregulation, and avoidance of predators. Western pond turtle overwinters in both aquatic and terrestrial habitats. Overwintering occurs in aquatic habitats that include logs, mud, rocks, and undercut areas along banks. For terrestrial habitat, the species typically overwinters in burrows, in leaf litter or soil. Gravid females leave drying creeks in June to lay their clutches in sunny upland habitats, which include grazed pastures. These nesting sites are located upland from adjacent aquatic habitat, must be dry, and often have a high clay or silt fraction. Typically, western pond turtle digs its nest on an unshaded slope, no steeper than 25 percent.

Recent reconnaissance-level surveys and previous herpetofauna surveys in the planning area did not detect the presence of western pond turtle in the planning area. However, suitable habitat exists in the planning area, and implementation of the General Plan could affect western pond turtle (if present) should construction of new facilities (including trail placement) result in impacts on occupied aquatic habitat or nesting sites. Western pond turtle individuals also could be injured or killed by OHVs or other equipment on trails or roads in the planning area. Therefore, implementation of the General Plan could result in direct mortality to the species or could destroy occupied habitat, both of which would be potentially significant impacts.

The General Plan includes NRM Guidelines 1.1 through 1.5 and Wildlife Guidelines 1.2 and 1.7 (shown above in the discussion of Impact 3.3-1), which, with implementation, would provide protection of western pond turtle. Adherence to the guidelines associated with NRM Goal 1 would avoid or minimize potential impacts on sensitive habitats and natural resources. These guidelines call for placing new facilities in previously disturbed areas to the greatest extent feasible, taking known locations of sensitive resources into account when siting new facilities, and avoiding or minimizing disturbance to sensitive communities and other natural resources. This would include western pond turtle aquatic habitat and potential upland nesting habitats. Adherence to Wildlife Guideline 1.2 would include planning that would locate new facilities beyond 250 feet from habitat known to support western pond turtle. In addition, in adhering to Wildlife Guideline 1.7, planners would consult with wildlife agencies before the start of construction on any project that may affect upland habitat potentially supporting western pond turtle nesting. In addition, they would implement appropriate measures to avoid or compensate for direct and indirect impacts on special-status herpetofauna in upland habitat.

Overall, adherence to these goals and guidelines would avoid impacts on western pond turtle aquatic and upland nesting sites because preproject planning would avoid placing facilities within 250 feet of known habitat and consultation with wildlife agencies would occur to minimize and mitigate any effects. Therefore, the impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.3-9 Impacts on Biological Resources from Release of Contaminated Soil/Groundwater Related to Proposed Construction Activities

A number of land use activities occurred in the planning area before it became an SVRA. Most notably, Aerojet built, tested, and destroyed rockets and their components in several locations in the planning area vicinity for several years. One such location within the boundaries of the planning area is known as Area 39. Area 39 has seven known contaminant-source areas and was used primarily for burning waste and chemical storage. Because of past waste burning and improper chemical storage, the source areas in Area 39 have higher levels of several contaminants than those outside it. The potential exists for these contaminants to become exposed through the ground-disturbing activities proposed in the General Plan. Exposure of sensitive biological resources (i.e., aquatic invertebrates, amphibians, plants) to an uncontrolled release of these chemicals could cause a potentially significant impact, especially on those species that use the water bodies in Area 39 or are especially susceptible to chemicals (i.e., amphibians).

Implementation of OM Guideline 7.1 (shown below) and Water Guideline 2.4 (shown above in the discussion of Impact 3.3-1) included in the General Plan would reduce the potential for release of contaminated materials from past activities to the greatest extent possible, and thus would reduce the indirect impact on sensitive biological resources. Specifically, OM Guideline 7.1 would require coordination and adherence to identified design modifications, area closures/limitations, specific BMPs, monitoring, and/or remedial measures as prescribed in the forthcoming Aerojet Area 39 Feasibility Study, expected to be complete in 2018. This guideline would ensure that measures prescribed by Aerojet to reduce the potential for contaminant releases would be taken into account before the start of construction and would effectively reduce the potential for exposure of these contaminants to sensitive biological resources. Water Guideline 2.4 incorporates information from the OHV BMP Manual, the

OHMVR Soil Standard or subsequent amendments, and the Area 39 Feasibility Report as appropriate to the design of water quality control measures.

OM Goal 7: Manage the SVRA for the protection of human health and ecological health based on recommendations developed in the Aerojet Feasibility Study for Area 39.

- **OM Guideline 7.1:** Incorporate information from the Aerojet Feasibility Study for Area 39 when developing detailed plans for facilities proposed and envisioned in this General Plan. All facilities should be sited and managed to ensure that health hazards to sensitive receptors (construction workers, SVRA users and employees, and habitat/wildlife receptors) are avoided. Measures may include implementation of project-specific design measures such as modifications to area closures, enforcement of limits on uses in identified areas, specific best management practices, monitoring, or remedial measures identified in the Feasibility Study.

Impacts on sensitive biological resources from an unintended release of soil/groundwater contaminants would be reduced by adhering to the above guidelines. Therefore, the impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.3.5 SUMMARY OF SIGNIFICANT IMPACTS

Although avoiding and minimizing potential impacts on biological resources is an important objective of the General Plan, it may not be possible to avoid all such impacts and still provide OHV and related recreational opportunities at Prairie City SVRA. For the General Plan and this evaluation, impacts on biological resources would be considered unavoidable if the overall purpose of the General Plan (i.e., providing OHV and other recreational activities) could not be achieved without avoiding any potential impact on biological resources. However, as discussed in the following impact assessment, no significant unavoidable impacts on biological resources would occur with compliance with statutory and regulatory requirements and the General Plan goals and guidelines.

Adoption of the General Plan could result in impacts on biological resources through disturbance of sensitive natural communities, take of special-status plant and wildlife species, loss or degradation of regulated wetlands and waters, conflicts with existing ordinances and policies, or unintentional releases of soil/groundwater contaminants into the environment. The General Plan includes goals and guidelines that would be followed during project planning and construction to avoid or minimize potential impacts on biological resources. With adherence to the goals and guidelines in the General Plan, impacts on biological resources would be avoided or minimized.

3.3.6 MITIGATION MEASURES

No additional mitigation measures are required. The goals and guidelines in the General Plan concerning natural resources are designed to avoid or minimize impacts on sensitive biological resources that may occur at Prairie City SVRA.

3.4 CULTURAL RESOURCES

This section describes cultural resources in the planning area. It also discusses the federal and state regulatory framework and analyzes the potential impacts of implementing the Prairie City State Vehicular Recreation Area (SVRA) General Plan on cultural resources.

3.4.1 EXISTING SETTING

This section describes information that supplements the cultural setting provided in Section 2.3.3, “Cultural Resources,” of the General Plan, and is a brief summary of the cultural setting outlined in *A Cultural Resource Inventory of the Prairie City State Vehicular Recreation Area (SVRA), Sacramento County, California* (State Parks 2010).

PREVIOUSLY DOCUMENTED CULTURAL RESOURCES

Consultants and State Parks personnel have conducted four cultural resource inventories and produced a summary memorandum for Prairie City SVRA (Derr 1989; Hines 2004; State Parks 2010, 2012). These inventories resulted in the identification of 12 cultural resource studies within or adjacent to Prairie City SVRA (Table 3.4-1). As described in Section 2.3.3, “Cultural Resources,” of the General Plan, 11 previously recorded resources are present within or adjacent to Prairie City SVRA.

CULTURAL INVENTORY AND STUDIES

Archaeologists with the Off-Highway Motor Vehicle Recreation (OHMVR) Division conducted a complete pedestrian survey of Prairie City SVRA in 2009 and 2010 (State Parks 2010). The focus of this survey was to relocate the three previously recorded prehistoric archaeological sites and five previously documented historic-era resources, prepare documentation for Capitol Dredging Company operations, and identify any additional resources that might be present. With the exception of the three isolated nondiagnostic flakes (P-34-1599) and an isolated basalt flake (P-34-1600), all previously identified resources were relocated. Because of a lack of associated artifacts and other evidence of cultural use, the previously identified isolated deposit of yellow limonite and hematite (P-34-1601) was most likely not quarried or otherwise exploited by prehistoric groups, and not a cultural resource. State Parks archaeologists also recorded the dredge tailings as part of the American River Mining District (CA-SAC-308H). No new prehistoric archaeological sites were identified.

A survey of the 68-acre Barton Ranch acquisition property was conducted in 2013 (State Parks 2012). As a result of the pedestrian survey, one previously undocumented prehistoric site (04232012) was recorded and one previously recorded historic-era linear feature (P-34-1295) was updated.

An AECOM architectural historian conducted archival research at the library at California State University, Sacramento; on the National Aeronautics and Space Administration (NASA) Technical Reports Server; and in the AECOM cultural library. The results of this research were used to develop a

Table 3.4-1. Cultural Studies Conducted in or Adjacent to Prairie City SVRA

Report Name	Authors	Date
Studies Completed for Prairie City SVRA		
A Cultural Resources Survey of the Prairie City OHV State Park, Sacramento County, California	Eleanor H. Derr, Cultural Resources Unlimited	October 1989
Cursory Archaeological Survey of Prairie City, Yost Acquisition	Phillip Hines	February 18, 2004
Archaeological Survey Report: Barton Ranch Acquisition, Sacramento, CA	California Department of Parks and Recreation	2012
Cultural Resource Inventory of the Prairie City State Vehicular Recreation Area	California Department of Parks and Recreation	August 2010
Cultural Resources Analysis for Prairie City State Vehicle Recreation Area	AECOM	March 2014
Studies Completed Adjacent to Prairie City SVRA		
An Archaeological Survey of the James Yost Use Permit Area	Margaret E. Scully, Ph.D.	July 13, 1989
A Cultural Resource Evaluation of Lands within Aerojet General Corporation, Sacramento Plant, Sacramento County	Susan Lindstrom, Archaeological Consultant	March 10, 1989
A Cultural Resource Inventory of Prairie City Center Project, 404 Acres near Folsom, California, Sacramento County	Susan Lindstrom, Archaeological Consultant	February 1993
A Cultural Resource Inventory of Prairie Oaks Center, 90 Acres near Folsom, California, Sacramento County	Susan Lindstrom, Archaeological Consultant	September 1993
Folsom East Interceptor, Sacramento Regional County Sanitation District, Section 3—Constraints Analysis, Cultural Resources Element	Sharon A. Waechter, Far Western Anthropological Research Group, Inc.	August 1997
NEPA Environmental Screening, Proposed Mobile Radio Facility, East White Rock, Site No. CA-1574A, Sacramento County, California	R. Keith Brown, P.E., Brown & Mills, Inc.	February 1, 2001
Cultural Resource Assessment of Mangini Property Project, Sacramento County, California	Peak & Associates	2002

Note: SVRA = State Vehicular Recreation Area
Sources: State Parks 2010, 2012

historic context in which to evaluate the Test Zone K control room (Moon Room), water tank, and Test Stand K-1 (Aerojet liquid hydrogen test pit) resources. Map research, including review of historic U.S. Geological Survey quadrangle maps and historic aerial photographs, was conducted to assist in dating the resources. State Parks personnel also conducted additional research. Based on this research, none of the resources were recommended as eligible for inclusion in the California Register of Historical Resources (CRHR) (AECOM 2014a, 2014b).

Table 3.4-2 lists the 11 previously recorded resources present within or adjacent to Prairie City SVRA. These resources are described in greater detail in Section 2.3.3, "Cultural Resources," of the General Plan, with archaeological resources described first, followed by a description of the architectural/built environment resources.

Table 3.4-2. Previously Recorded Cultural Resources within or Adjacent to Prairie City SVRA

Trinomial/Primary	Site Name	Resource Description
04232012 (temporary)	Three milling station features	AP4. Bedrock milling features
P-34-1599	Isolate	AP2. Lithic scatter
P-34-1600	Isolate	AP2. Isolate basalt flake
P-34-1601	Isolate	AP16. Ochre deposit
P-34-1602	Test Stand K-1 (Aerojet liquid hydrogen test pit)	AH16. Liquid hydrogen test pit
P-34-1603	Test Zone K control room (Moon Room)	HP11. Engineering structure
P-34-1604	Water tank	HP11. Engineering structure
P-34-2149	Historic refuse deposit	AH4. Trash scatter
CA-SAC-380H	Dredge tailings	AH9. Tailings
P-34-2195	Gold Hill–Bellota–Lockeford 115kV line	
P-34-492, CA-SAC-465H	Concrete pad	AH2. Concrete pad

Note: kV = kilovolt; SVRA = State Vehicular Recreation Area

Sources: State Parks 2010, 2012; AECOM 2014a, 2014b

NATIVE AMERICAN CONSULTATION

In October 2008, during the preparation of the cultural resource inventory for Prairie City SVRA, Native American groups identified by the Native American Heritage Commission (NAHC) and Native American representatives from the NAHC's contact list were contacted (State Parks 2010). As part of the cultural investigations for the Barton Ranch acquisition property, an informal Native American consultation occurred with interested tribal representatives in March and April 2012. Native American consultants indicated at that time that the Barton Ranch acquisition property may be a Traditional Cultural Property.[1]

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[1] As defined by the National Park Service, a Traditional Cultural Property is a property that is associated with cultural practices or beliefs of a living community that are rooted in that community's history, and are important in maintaining the continuing cultural identity of the community (NPS 1998:1).

On May 23, 2013, during preparation of the cultural resources analysis for the Prairie City SVRA memorandum report, an AECOM archaeologist contacted the NAHC requesting a search of the Sacred Lands File. The NAHC responded on June 4, 2013, providing a list of tribes to contact as part of the consultation process. AECOM sent letters to each identified tribe, inviting them to attend an environmental impact report (EIR) scoping meeting/planning workshop to be held on June 18, 2013. One response, from the Shingle Springs Band of Miwok Indians (SSBMI), was received on June 11, 2013 (AECOM 2014b:4). In its response, SSBMI requested copies of all completed record searches and surveys that had been completed in or around the planning area. Further, SSBMI indicated interest in being identified as a consulting party for identification of any Traditional Cultural Properties that may exist within Prairie City SVRA.

As part of the General Plan process, a Native American consultation meeting was conducted on July 30, 2013. Attendees consisted of Marcos Guerrero, cultural resources manager, Jason Camp, vice chairman, and Nicole Hu with the United Auburn Indian Community of the Auburn Rancheria; Steven Hutchason, executive director of cultural preservation with the Wilton Rancheria; and Andrew Godsey, assistance director of the SSBMI Cultural Resource Department. The purpose of the meeting was to summarize the consultation that had been conducted to that point; provide the results of cultural resources inventories; and solicit additional input from the Native American community. A site visit was conducted at the location of the prehistoric milling feature documented on the Barton Ranch acquisition property. During the meeting, Native American representatives expressed the desire for access to the SVRA to gather plant resources and stated that they would like native plants valued by the Native American community to be incorporated into restoration efforts.

Native American consultation will continue into the future for all proposed ground-disturbing activities in the planning area. Regular consultation with California Native American tribes and organizations that are interested in the planning area will ensure that working relationships remain productive and collaborative, especially when considering management practices that involve the planning area’s natural and cultural resources of interest and concern to the Native American community.

3.4.2 REGULATORY SETTING

Cultural resources are subject to various federal and state policies, regulations, and laws. Section 2.7.3.6, “Cultural Resources Regulations,” of the General Plan summarizes the plans, policies, regulations, and laws related to cultural resources at Prairie City SVRA. In particular, Section 106 of the National Historic Preservation Act of 1966, several sections of the California Public Resources Code (PRC) and the California Health and Safety Code, and California Government Code Section 65352.3 (Senate Bill 18) are applicable.

3.4.3 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact on cultural resources if it would:

- cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines; or
- disturb any human remains, including those interred outside of formal cemeteries.

Section 15064.5 of the CEQA Guidelines defines “substantial adverse change” as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.

As cited in Section 15064.5, the lead agency shall consider a resource to be “historically significant” if the resource meets the California Register of Historical Resources (CRHR) criteria for eligibility or is listed in a local historic register or deemed significant in a historical resource survey. A significant historical resource is one that meets one or more of the following CRHR criteria:

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.

Environmental impacts on unique paleontological resources or sites or unique geologic features are addressed in Section 3.5, “Geology, Soils, Minerals, and Paleontological Resources,” of this EIR.

3.4.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

The analysis considered potential impacts from implementation of the General Plan on cultural resources in the planning area based on information from existing databases, past studies performed at Prairie City SVRA, and applicable regional planning documents.

The use areas and conceptual locations of the potential facilities were developed through a careful screening process of constraints mapping, based on the location of known sensitive cultural resources. The proposed facilities allowable in each use area would be sited to maximize the quality of OHV recreational experiences while avoiding or minimizing impacts on sensitive cultural resources.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.4-1 Degradation of Prehistoric and Historic-Era Cultural Resources

Previous cultural resource inventories and Native American consultation have resulted in the documentation of a broad array of prehistoric and historic-era resources in the planning area. These resources have the potential to be affected or otherwise degraded by natural processes such as erosion, and by recreational activities and development of facilities and infrastructure.

The presence of known cultural resources in the planning area was carefully considered during development of the Prairie City SVRA General Plan. The planning team considered the presence of sensitive resources when determining Use Areas and potential facilities. CR Goal 1 in the “Cultural Resources Management” section of the General Plan is “Preserve and protect significant cultural sites and features.” Implementing CR Guidelines 1.1 through 1.4 (shown below) would ensure that State Parks would achieve CR Goal 1 while implementing the Prairie City SVRA General Plan.

CR Goal 1: Preserve and protect cultural resources.

- **CR Guideline 1.1:** In accordance with PRC Section 5024, before beginning any project or construction at or near a resource that could disturb the integrity of the resource, determine the historical significance of known cultural resources that have been identified through inventory and documentation on file at the North Central Information Center. Obtain a Determination of Eligibility from the State Historic Preservation Officer for listing the resource in the National Register of Historic Places (NRHP) and CRHR. If the resource is determined to be eligible for NRHP/CRHR listing, consult with an OHMVR Division archaeologist or other qualified cultural resource professional to develop and implement protection measures consistent with Section 106 of the National Historic Preservation Act, the *Secretary of the Interior’s Standards for the Treatment of Historic Properties*, and CEQA. These measures could include but would not necessarily be restricted to project planning designed to avoid the resource, archival research, additional in-field documentation, or interpretive signage. If the resource is determined not to be eligible for NRHP/CRHR listing, then no further investigations or protection measures are necessary.
- **CR Guideline 1.2:** Design the activities to avoid or minimize impacts on the identified resources if significant cultural resources are discovered in or adjacent to areas that would be affected by planned or proposed activities. If cultural resources are discovered inadvertently during construction

activities, cease construction activities at and near the location of the find and consult an OHMVR Division archaeologist or other qualified cultural resource professional to determine the potential significance of the find in accordance with NRHP/CRHR criteria. If the find is determined to be significant, develop and implement mitigation measures in consultation with the archaeologist or cultural resource professional consistent with Section 106 of the National Historic Preservation Act, the S*ecretary of the Interior's Standards for the Treatment of Historic Properties,* and CEQA. Mitigation measures could include but would not necessarily be restricted to redesign to avoid the resource, archival research, additional in-field documentation, interpretive signage, or subsurface archaeological testing. If the discovery is determined not to be eligible for NRHP/CRHR listing, then no further investigation or mitigation of adverse effects is necessary.

- **CR Guideline 1.3:** Maintain appropriate confidentiality of all cultural resources in conformance with Government Code Section 6254.10, "Information Maintained by Department of Parks and Recreation." This applies to archaeological site information maintained by State Parks, the State Historical Resources Commission, or the State Lands Commission.

- **CR Guideline 1.4:** Temporarily halt all work at the discovery location and areas adjacent to the find in the event that human remains are discovered during project activities. Leave any human remains and associated artifacts and features in place; avoid cleaning, photographing, or analyzing human remains or associated artifacts and features, and avoid removing them from the site. The State Parks employee or construction contractor must immediately contact the State Park District Superintendent to inform him/her of the find. The State Parks District Superintendent (or designee) will notify the county coroner, in accordance with Section 7050.5 of the California Health and Safety Code, and the NAHC will be notified within 24 hours of the discovery if the coroner determines that the remains are Native American. In compliance with PRC Section 5097.98, the NAHC will immediately notify those person(s) believed to be the most likely descendant (MLD) of the deceased Native American. The MLD will complete his/her inspection and make recommendations for treating or disposing the human remains or associated grave goods. If a Native American monitor is at Prairie City SVRA at the time of the discovery, and that person has been designated the MLD by the NAHC, the monitor, as a representative of the MLD, may make a recommendation of the appropriate disposition. Work will not resume in the area of the find until proper disposition is complete (PRC Section 5097.98).

Adherence to this General Plan goal and associated guidelines would avoid significant adverse impacts on cultural resources during implementation of the Prairie City SVRA General Plan. In particular, these measures stipulate that complete cultural resource studies/inventories be conducted at each location proposed for ground disturbance or development, that all discovered resources be evaluated for their significance, and that all known significant resources be protected. With adherence to this goal and the guidelines, all improvements within Prairie City SVRA associated with the General Plan would avoid or minimize impacts on all known cultural resources found to be significant. Therefore, the impact on cultural resources would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.4-2 Potential Impacts on Ethnographic Resources

As part of public outreach and Native American consultation during development of the Prairie City SVRA General Plan, Native American representatives expressed a desire for access to the SVRA to gather plant resources, and for incorporation of native plants valued by the Native American community into restoration efforts. Under CR Guideline 1.5 in the General Plan (shown at the end of this impact discussion), State Parks would issue a DPR 246 “Special Event” permits (in this case, a collecting permit). Issuance of this permit would allow managed access to and use of culturally significant resources at Prairie City SVRA by Native Americans while preventing inadvertent impacts on natural resources. The requesting Native American tribe, organization, and/or individual would need to complete the permit application in consultation with the State Parks District Superintendent or an appointed Prairie City SVRA or OHMVR Division employee. An SVRA or OHMVR Division staff member would gather the information required for completing the permit from the requesting party—intended date(s) of access, number of participating individuals, and location—and would respect the confidential and culturally significant nature of the request. The permit is required for compliance with State Parks mandates and policies for natural resource management and additional Prairie City SVRA procedures, facilities, or resources, while enabling Prairie City SVRA State Parks peace officers and other staff members to be aware and supportive of such Native American traditional practices.

CR Goal 1: Preserve and protect cultural resources.

- **CR Guideline 1.5:** Issue collecting permits that allow Native Americans requesting access into the SVRA for the purpose of gathering plant resources. Issuance of these permits allows State Parks to track the type and amount of material collected. Incorporate native plants of value to the Native American community and appropriate to the native plant habitats found on-site into restoration efforts.

With adherence to this General Plan guideline, the impact on ethnographic resources would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.4-3 Potential for Access to Sensitive Cultural Resource Information by Unauthorized Groups or Individuals

Unauthorized access to the locations of sensitive cultural sites or to descriptions of such sites could result in vandalism and/or unauthorized collection, and thus could adversely affect the integrity of cultural resources. CR Guideline 1.3 (shown above within the discussion of Impact 3.4-1) in the Prairie City

SVRA General Plan provides guidance for handling sensitive data. Specifically, Section 6254.10 of the Government Code requires state and local agencies to keep confidential all records related to archaeological site descriptions, locations, reports, and records that are obtained through consultation with a Native American tribe. In compliance with this law, the OHMVR Division of State Parks has provided and would continue to provide cultural resource information only to those Native American consultants listed on the NAHC's contact list.

With adherence to this General Plan guideline and because the OHMVR Division would comply with state law requiring confidentiality of records related to archaeological site descriptions, locations, reports, and records obtained through consultation with a Native American tribe, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.4-4 Inadvertent Impact on Unanticipated Finds

Cultural resources could be discovered inadvertently during construction activities proposed and envisioned in the Prairie City SVRA General Plan. The OHMVR Division's Cultural Resource Management Program promotes the protection, preservation, and interpretation of cultural resources throughout the park units managed by the OHMVR Division. In addition, the General Plan includes a specific goal and guideline for the preservation, avoidance, and protection of cultural resources that may be present at Prairie City SVRA. CR Guideline 1.2 (shown above within the discussion of Impact 3.4-1) in the General Plan addresses the inadvertent discovery of cultural resources.

With adherence to this General Plan guideline, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.4-5 Unanticipated Discovery of Human Remains

CR Guideline 1.4 in the Prairie City SVRA General Plan (shown above within the discussion of Impact 3.4-1) provides direction in the event that human remains are discovered in the planning area.

Adherence to this General Plan guideline for the treatment of human remains and associated grave goods would avoid any adverse effects on human remains. Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.4.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the Prairie City SVRA General Plan and implementation of resulting actions would not result in significant impacts on cultural resources.

3.4.6 MITIGATION MEASURES

No significant impacts on cultural resources would result with implementation of the General Plan and no mitigation is required.

3.5 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

This section describes geology, soils, minerals, and paleontological resources in the planning area. It also discusses the state and local regulatory framework and analyzes the potential impacts of implementing the Prairie City State Vehicular Recreation Area (SVRA) General Plan on these resources.

3.5.1 EXISTING SETTING

The following is a brief summary of existing geology, soils, minerals, and paleontological resources in the planning area. For a more detailed description, see Section 2.3.1, "Physical Resources," of the General Plan.

GEOLOGY

Local Geology

The planning area lies at the edge of the Western Sierra Metamorphic Belt, which contains primarily volcanic and sedimentary rocks that were added to the continental margin during the Jurassic period. These rocks are overlain by younger upper Cretaceous and Tertiary sedimentary rocks of the Central Valley. The planning area consists of the following geologic formations, in order from youngest to oldest:

- *Dredge tailings* consist of piles of cobbles, silt, and sand from former gold dredge mining activities. In the vicinity of the planning area, these tailings likely were part of the Riverbank Formation, which formed an ancestral channel of the American River.

- The *Laguna Formation*, which is of Pliocene age (approximately 5 million years Before Present [B.P.]), consists primarily of silt to sandy silt and clay that was deposited on broad floodplains by meandering, slow-moving streams. These sedimentary deposits were laid down before the last major period of upthrust and tilting of the Sierra Nevada.

- The *Mehrten Formation* is of Pliocene-Miocene age (approximately 9 million years B.P.). It is a thick deposit consisting primarily of volcanic mudflow deposits and occasional beds of volcanic ash. However, the Mehrten Formation also contains deposits of andesitic boulders, cobbles, and gravels held together in a sandy matrix.

- The *Ione Formation* occurs as a 200-mile-long series of isolated exposures along the western foothills of the Sierra Nevada, from Oroville south to Friant in Fresno County. The Ione Formation was formed from fluvial, estuarine, and shallow marine deposits of Eocene age (approximately 35–55 million years B.P.). In consists of quartzose sandstone, conglomerate, and claystone.

Seismicity

The Foothills Fault System is the dominant structural feature of the western Sierra Nevada. However, with the exception of the Cleveland Hills Fault located near Lake Oroville, the western Sierra Nevada foothills have not been seismically active in the last 11,700 years (Holocene time). Faults with known or estimated activity during the Holocene are generally located in the San Francisco Bay Area to the west, or in the Lake Tahoe area to the east.

SOILS

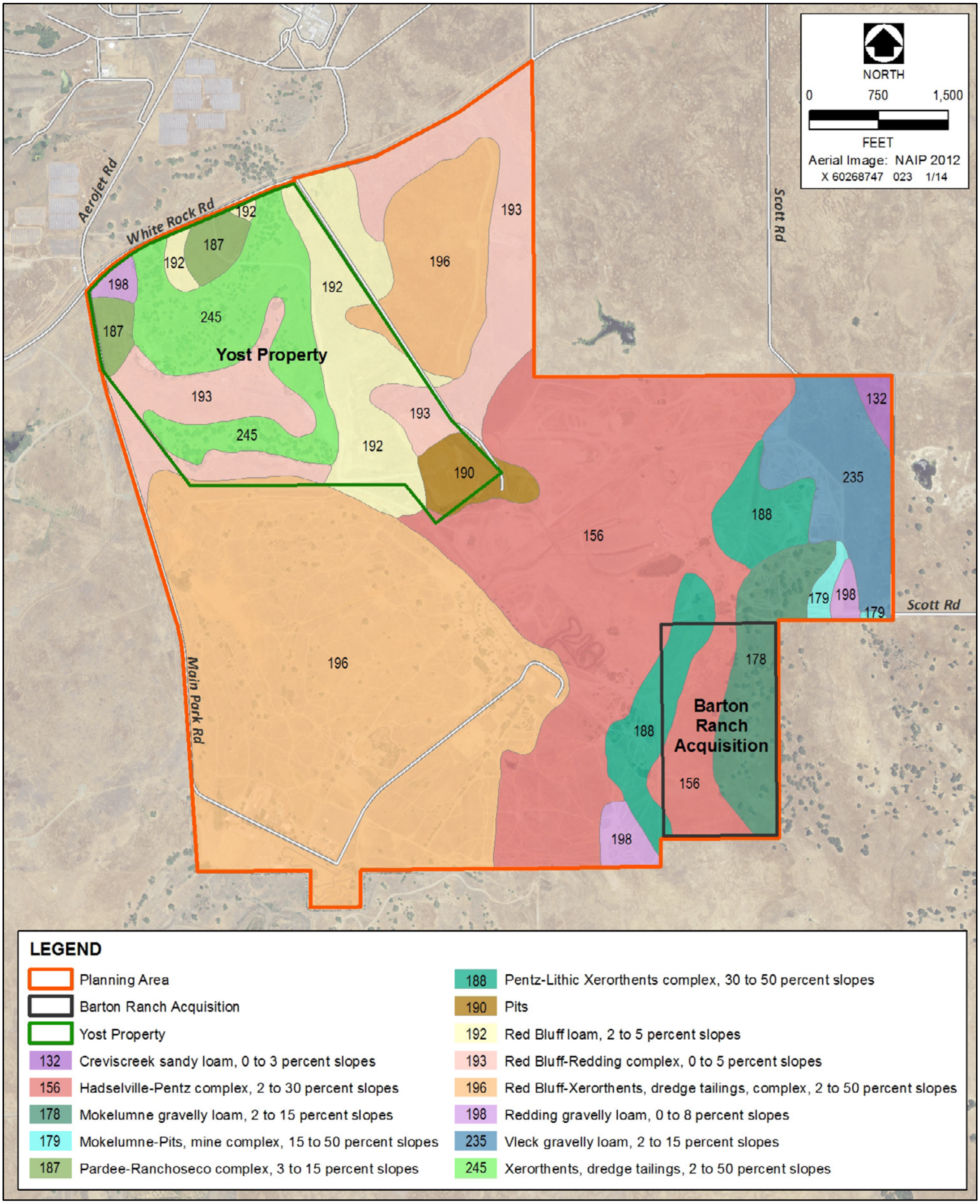
Figure 3.5-1 shows the locations of the various soil types present in the planning area. Table 3.5-1 summarizes the relevant general characteristics of these soils.

MINERALS

Within weeks after gold was found at Sutter’s Mill on the South Fork American River in 1848, Mormon Island (now buried underneath Folsom Lake) was being mined. Subsequent gold discoveries and mining operations developed at Beal’s Bar, Rattlesnake Bar, Negro Bar, Whiskey Bar, and Prairie City. When the Natomas Water and Mining Company began supplying water to the area around Prairie City in 1853, miners began staking claims along the company’s canal. When those claims were exhausted, the Natomas Company (as it was later called) began dredging the nearby ancient American River deposits. Dredging operations took place in a portion of the planning area. The piles of cobbles deposited during dredging operations in the vicinity of the planning area have proved to be a valuable source of sand and gravel, which are a source of construction aggregate.

Portions of the 211-acre Yost property in the northwest corner of the planning area were dredged for placer gold before sand excavations occurred (Dupras 1999). Intermittent sand and aggregate mining has occurred on this site since 1958. The site was formerly owned by James Yost and operated by American River Aggregates. Teichert began leasing the property in 2001 and the lease continued when State Parks purchased the property from James Yost in 2004. In 2007, Teichert continued reclamation efforts that were initiated by the previous operator, and the lease expired in June 2012. At that time, Sacramento County issued a letter to the Office of Mine Reclamation stating that “the lead agency certifies that the final reclamation is complete, and in accordance with the approved reclamation plan.” Mining operations on the Yost property ceased in 2012 (State Parks 2012a).

A small outcrop of the Ione Formation is present in the central portion of the planning area. Some areas of the Ione Formation have been known to contain kaolin clay. In addition, pisolitic clay and clay for use in ceramic raw material have been mined from the Ione Formation. Portions of the Ione Formation also have been known to produce commercial-grade specialty sand and lignite.



Source: NRCS 2013

Figure 3.5-1. Soil Types in the Planning Area

PALEONTOLOGICAL RESOURCES

Vertebrate mammalian fossils have been recovered from the Mehrten Formation from more than 40 locations in Calaveras, San Joaquin, Stanislaus, Tuolumne, and Merced Counties. In addition, several specimens of plant fossils have been recovered locally from the Mehrten Formation in Granite Bay, Roseville, and Rocklin. Vertebrate mammal, plant, and invertebrate fossils have been recovered from the Ione Formation from more than 300 locations in Nevada, Contra Costa, Placer, Amador, Butte, Alameda, Merced, Tuolumne, Sutter, Sierra, Plumas, Calaveras, Kern, and Stanislaus Counties (University of California Museum of Paleontology 2014).

3.5.2 REGULATORY SETTING

Section 2.7.3.3, “Geology, Soils, Minerals, and Paleontological Resources Regulations,” of the General Plan includes a discussion of state and regional and local plans, policies, regulations, and laws applicable to geology, soils, minerals, and paleontological resources in the planning area.

3.5.3 THRESHOLDS OF SIGNIFICANCE

GEOLOGY, SOILS, AND MINERALS

Based on Appendix G of the California Environmental Policy Act (CEQA) Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact on geology, soils, or minerals if it would:

- expose people, property, or structures to potential substantial adverse impacts, including the risk of loss, injury, or death involving:
  - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other 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 landslide, lateral spreading, subsidence, liquefaction, or collapse;

Table 3.5-1. Planning Area Soil Characteristics

Soil Map Unit Name	Surface Texture	Depth to Bedrock (inches)	Shrink-Swell Potential[1]	Permeability[2]	Water Erosion Hazard[3]	Wind Erodibility Group[4]	Drainage Class	Hydrologic Soil Group[5]	Off-Trail Erosion Hazard	Soil Suitability for Septic Systems	Limitations
Creviscreek sandy loam, 0 to 3 percent slopes	Sandy loam	57	Low	High	Moderate	3	Moderately well drained	B/D	Slight	Very limited	**Small Buildings and Shallow Excavations:** Very limited (shallow depth to saturated zone)
Hadselville-Pentz complex, 2 to 30 percent slopes	Fine sandy loam	7–16	Low	High	Moderate	3	Moderately well drained	D	Moderate (slope erodibility)	Very limited	**Small Buildings and Shallow Excavations:** Very limited (shallow depth to bedrock, steep slopes) **Embankments, Dikes, and Levees:** Very limited (thin soil layer, soil piping)
Mokelumne gravelly loam, 2 to 15 percent slopes	Gravelly loam	39–46	Moderate	Moderately high	Moderate	7	Well drained	D	Slight	Very limited	**Small Buildings and Shallow Excavations:** Very limited (steep slopes, shrink-swell potential) **Embankments, Dikes, and Levees:** Somewhat limited (thin soil layer, hard to pack)
Mokelumne-Pits, mine complex, 15 to 50 percent slopes	Gravelly loam	39–46	Moderate	Moderately high	Moderate	7	Well drained	D	Moderate (slope erodibility)	Very limited	**Small Buildings and Shallow Excavations:** Very limited (steep slopes, shrink-swell potential)
Pardee-Ranchoseco complex, 3 to 15 percent slopes	Gravelly loam	7–16	Low	Moderately high	Low	6	Well drained	D	Slight	Very limited	**Small Buildings and Shallow Excavations:** Very limited (shallow depth to bedrock, steep slopes)
Pentz-Lithic Xerorthents complex, 30 to 50 percent slopes	Fine sandy loam	16	Low	High	Moderate	3	Well drained	D	Severe (slope erodibility)	Very limited	**Small Buildings and Shallow Excavations:** Very limited (steep slopes, shallow depth to soft bedrock) **Embankments, Dikes, and Levees:** Very limited (steep slopes, shrink-swell potential)
Pits	Variable	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Red Bluff loam, 2 to 5 percent slopes	Loam	>70	Moderate	Moderately high	Moderate	6	Well drained	C	Slight	Very limited	**Small Buildings and Shallow Excavations:** Somewhat limited (shrink-swell potential)
Red Bluff–Redding complex, 0 to 5 percent slopes	Loam	>70	Moderate	Moderately high	Moderate	6	Well drained	C	Slight	Very limited	**Small Buildings and Shallow Excavations:** Somewhat limited (shrink-swell potential)
Red Bluff–Xerorthents, dredge tailings, complex, 2 to 50 percent slopes	Loam	>70	Moderate	Moderately high	NR	NR	Well drained	NR	NR	NR	NR
Redding gravelly loam, 0 to 8 percent slopes	Gravelly loam	>70	Moderate	Moderately high	Moderate	6	Moderately well drained	C	Slight	Very limited	**Small Buildings and Shallow Excavations:** Somewhat limited (shrink-swell potential)
Vleck gravelly loam, 2 to 15 percent slopes	Gravelly loam	50–53	Moderate	Moderately high	Moderate	6	Moderately well drained	D	Slight	Very limited	**Small Buildings and Shallow Excavations:** Very limited (steep slopes, shrink-swell potential)
Xerorthents, dredge tailings, 2 to 50 percent slopes	Fragmented material	NR	Low	Very high	NR	NR	Somewhat excessively drained	A	Severe	NR	NR

Notes: > = greater than; NR = not rated

Because the dredge tailings and pits have been disturbed and reworked, representative characteristics are not available and these soil types have not been rated.

[1] Based on percentage of linear extensibility; shrink-swell potential ratings of "moderate" to "very high" can result in damage to buildings, roads, and underground utilities.

[2] Based on standard U.S. Natural Resources Conservation Service (NRCS) saturated hydraulic conductivity (Ksat) class limits; Ksat refers to the ease with which pores in a saturated soil transmit water.

[3] Based on the NRCS erosion factor "Kw whole soil," which is a measurement of relative soil susceptibility to sheet and rill erosion by water.

[4] The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

[5] Hydrologic soil groups are based on runoff characteristics: Group A = low runoff potential, Group B = low to moderate runoff potential, Group C = moderate to high runoff potential, Group D = high runoff potential.

Source: NRCS 2013

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- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater;
- result in inundation by seiche, tsunami, or mudflow; or
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

PALEONTOLOGICAL RESOURCES

Based on Appendix G of the CEQA Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. A “unique paleontological resource or site” is one that is considered significant under the following professional paleontological standards.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies, depending on several factors: the age and depositional environment of the rock unit that contains the fossils; their rarity; the extent to which they have already been identified and documented; and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates generally are common, the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils generally are considered scientifically important because they are relatively rare.

ISSUES NOT DISCUSSED FURTHER IN THIS DEIR

The planning area is not located in a seismically active region; furthermore, no enclosed bodies of water exist in the planning area that would be large enough to pose a hazard from seismic seiches. Because of the long distance of the planning area from the Pacific Ocean, tsunamis would not represent a hazard. Thus, no impact from seiches or tsunamis would occur, and these issues are not discussed further in this draft environmental impact report (DEIR).

The map contained in California Geological Survey (CGS) Special Report 192 (Higgins and Clinkenbeard 2006) indicates that the planning area is located in the category "Areas Least Likely to Contain Naturally Occurring Asbestos." These areas contain rock formations that include unconsolidated alluvium, dredge tailings associated with gold mining, the Ione Formation, and the Mehrten Formation (see General Plan Figure 2-9). Therefore, naturally occurring asbestos is not anticipated to represent a hazard in the planning area, and this issue is not discussed further in this DEIR.

3.5.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

The evaluation of the impacts of General Plan implementation on geology, soils, minerals, and paleontological resources was based on existing land uses within Prairie City SVRA and changes that could occur in the planning area from implementation of the General Plan, and a review of applicable geologic maps and published literature.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.5-1 Seismically Induced Risks to People and Structures from Surface Fault Rupture, Strong Seismic Ground Shaking, and Liquefaction

Prairie City SVRA is not located on or adjacent to any known faults. Therefore, surface fault rupture is unlikely to occur.

A portion of the East Branch, Bear Mountains Fault Zone, near the community of Rescue (approximately 14 miles northeast of the planning area), shows evidence of displacement in the last 11,700–700,000 years (i.e., Pleistocene age). A detailed analysis prepared by Tierra Engineering Consultants in 1983 and summarized by Wahl et al. in 1989 indicated that this fault zone could generate a magnitude 6.0 to 6.5 earthquake with a return period of 400 years. The West Branch, Bear Mountains Fault Zone is located approximately 7 miles east of the eastern property boundary; however, Jennings (1994) does not indicate that fault activity on the West Branch has occurred within the last 11,700 years, and the slip rate of the Foothills Fault System is extremely low (0.05 millimeter per year), well below the planning threshold for major earthquakes (Wills et al. 2007). Faults that have been classified as "active" by CGS are located in the Coast Ranges (approximately 60 miles west of the planning area) or in the vicinity of Lake Tahoe (approximately 50 miles east of the planning area). Therefore, strong seismic ground shaking is unlikely to occur in the planning area.

Liquefaction potential is determined by the type and consistency of soils, level and duration of seismic ground motions, and depth to groundwater. The planning area is generally located in stable rock formations, potential seismic sources are a relatively long distance away, and the groundwater table is at least 120 feet below the ground surface (Sacramento Central Groundwater Authority 2012). Therefore, it is unlikely that soils in the planning area would be subject to liquefaction in the event of an earthquake.

Furthermore, by law, all buildings and associated facilities must be designed according to the requirements of the California Building Standards Code (CBC), which contains criteria specifically designed to reduce structural damage and personal injury from seismic events and liquefaction to the maximum extent practicable. The CBC is described in detail in Section 2.7.3, "Regulatory Influences," of the General Plan.

Because the planning area is unlikely to experience surface fault rupture, strong seismic ground shaking, or liquefaction, and considering that compliance with the CBC is required by law, the impact of the General Plan related to seismic hazards would be **less than significant.**

Mitigation Measure: No mitigation is required.

IMPACT 3.5-2 Risks to People and Structures from Landslides and Unstable Soils

Landslides may be the result of natural processes, such as seismic activity and intensive rainfall (primarily during the winter months in California) occurring on unstable slopes. Landslides also may be caused by construction activities when heavy equipment is used or structures are installed on steep, unstable slopes without proper engineering controls. Mudflows are similar to landslides, but are composed primarily of mud and water. The same factors that trigger landslides also may trigger mudflows.

The eastern portion of the planning area contains steep slopes; however, no landslides have been recorded in the planning area or vicinity, and this portion of the planning area is set aside for vernal pool management. Most of the western portion of the planning area contains level terrain; no structures are planned on the hillsides of the western planning area.

The area where water quality control features are proposed, in the southeast portion of the planning area, contains steep slopes that drain southeast toward the tributary of Coyote Creek. The proposed spray irrigation of collected stormwater could destabilize this slope. In addition, without proper engineering and design, construction of the proposed detention basin on a slope could result in seepage and earthen berm instability.

As described in the *Prairie City SVRA Barton Ranch Acquisition, Initial Study/Mitigated Negative Declaration* (State Parks 2012b:2-5), the detention basin would likely be constructed with an earthen berm and would be excavated to attain an effective depth adequate for containing and treating the stormwater flows. The top of the berm would be approximately 10 feet wide to provide access to the basin for routine maintenance and sediment removal. An overflow outlet would be located 6 feet above the bottom of the basin. The primary outlet for the basin would be a skimmer, which would be designed to take only the cleanest water from the top portion of the water column. As an alternative, or in addition to the sediment basin, bioswale(s) may be utilized. Bioswales are vegetated, typically low-aspect-ratio trapezoidal channels. Up to 5 acres of the Barton Ranch acquisition area may be used for land application of stormwater. Although some of the sprayed water would evaporate into the air, most would soak into and percolate through the soil. Depending on the amount of slope, the irrigated stormwater could also result in downslope runoff that could result in slope instability.

Geo Guideline 1.1, Soils Guideline 1.3, and Water Guideline 2.4 in the Prairie City SVRA General Plan (shown below) require that all drainage facilities be designed by a California-registered engineer and in accordance with the *OHV Best Management Practices Manual for Erosion and Sediment Control* (OHV BMP Manual) to minimize potential hazards from slope instability related to construction of detention basins and/or bioswales on slopes and runoff from stormwater irrigation.

- **Geo Guideline 1.1:** Drainage facilities shall be designed by a California-registered civil engineer, and a geotechnical engineer shall be retained to review construction of drainage facilities, to minimize potential safety hazards or downstream damage associated with failure of earthen or concrete barriers from slope instability.

- **Soils Guideline 1.3:** Incorporate the guidance provided in the OHV BMP Manual, or subsequent or replacement document, when planning for the development of new facilities. Select, implement, and maintain BMPs, including those designed for stockpiles, during and after construction activities to avoid soil loss and the potential for resulting air pollution or degradation of water quality.

- **Water Guideline 2.4:** Incorporate permanent water quality control features, as appropriate when developing detailed plans for facilities proposed and envisioned in this General Plan. As appropriate to designs, incorporate information from the OHV BMP Manual and the OHMVR Soil Standard [Off-Highway Motor Vehicle Recreation Division *Soil Conservation Standard and Guidelines*] (or subsequent amendments), and the Aerojet Feasibility Report for Area 39, which is expected to be completed in 2018 and will contain prescriptive measures designed to help reduce contaminant transport in groundwater. Select water quality control features suitable to site conditions at Prairie City SVRA and consistent with state-of-the art science on water quality management. Avoid direct discharge to receiving water bodies.

With adherence to these General Plan guidelines, the impact of the General Plan related to slope instability would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.5-3 Short-Term Construction-Related Erosion and Loss of Topsoil

Project-related trails and facilities at Prairie City SVRA would be constructed on a variety of soil types. As shown in Table 3.5-1, many of the soils in the planning area are rated by the U.S. Natural Resources Conservation Service (NRCS) as having a high runoff rate; these generally are the soils with a moderate to high clay content, because clay soils do not absorb water as well as sandy or loamy soils. Several of the soils also are rated by NRCS as being highly susceptible to wind erosion. Earthmoving activities for construction of proposed facilities would temporarily disturb soil and would expose disturbed areas to storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. If a storm is large enough to generate runoff, localized erosion could occur. On the steeper slopes, severe erosion could occur during winter rain events. In addition, soil disturbance occurring during summertime as a result of construction activities could cause soil loss from wind erosion.

However, as indicated in Water Guideline 2.3 in the Prairie City SVRA General Plan (shown at the end of this impact discussion), State Parks would prepare a storm water pollution prevention plan (SWPPP) as required by the National Pollutant Discharge Elimination System (NPDES) Construction General Permit for all projects subject to the permit. The SWPPP would include best management practices (BMPs) to reduce water quality degradation of receiving waters by construction activities. At each construction site, the contractor would implement construction-related BMPs from the OHV BMP Manual (State Parks 2007, or most current version at time of construction) that are specifically designed to reduce erosion and control sedimentation. BMPs that could be used during construction fall into the following broad categories: erosion prevention, surface stabilization, tracking control, runoff control, sediment control, and road and trail drainage (State Parks 2007). The following are examples of specific types of construction-related BMPs from the OHV BMP Manual that could be used:

- Erosion control (e.g., blankets, mulches, hydroseeding techniques)
- Scour control (e.g., check dams and armoring as in upland swales and ditches)
- Sediment basins
- Sediment traps
- Silt fences
- Fiber rolls
- Track-walking techniques
- Dust control
- Tracking control
- Waste management

In addition, Water Guideline 2.4 in the Prairie City SVRA General Plan (shown above within the discussion of Impact 3.5-2) recommends that facilities be designed to incorporate permanent water quality control features and information from the OHMVR Soil Standard (or subsequent amendments) to reduce sedimentation and erosion, and Water Guideline 2.5 (shown at the end of this impact discussion) recommends that any degraded areas be improved.

Water Guideline 2.1 in the General Plan (shown below) recommends that facilities not be located within or immediately adjacent to riparian or stream corridors or in waters of the United States or the state (including seeps, ponds, or drainages). In addition, stream corridors may be crossed only at designated crossing locations where required for circulation. Soils Guideline 1.1 in the General Plan (shown below) recommends that all Prairie City SVRA facilities meet the current OHMVR Soil Standard (State Parks 2008), which contains trail design and construction criteria to limit erosion.

Soils Goal 1: Manage the SVRA for a balance of uses that allow protection and conservation of soil while maintaining a quality OHV recreational experience.

- **Soils Guideline 1.1:** Manage Prairie City SVRA trails and facilities to meet the current OHMVR Division *Soil Conservation Standard* or subsequent amendments or replacement documents.

Water Goal 2: Manage the SVRA for the protection of water quality while maintaining a quality OHV recreational experience.

- **Water Guideline 2.1:** Avoid siting facilities in and immediately adjacent to riparian areas or stream corridors and within waters of the United States or the state. Stream corridors shall be managed with vegetated buffers and crossings shall be properly sited for circulation and designed to minimize erosion and other water quality impacts. Culverts or bridge crossings shall be considered in highly erosive areas. Design measures include but are not limited to:
  - armoring approaches,
  - providing sediment traps or filter areas,
  - hardening the crossing surface,
  - protecting the streambanks from vehicle backwash and overflow during flooding, and
  - modifying super elevation (direction of tilt) such that roads and trails drain away from stream corridors.
- **Water Guideline 2.3:** Implement all water quality control measures required under the NPDES Construction General Permit before, during, and after the construction of facilities proposed and envisioned in this General Plan. Develop a SWPPP, including the identification of BMPs that must be implemented to reduce water quality degradation of receiving waters during and after

construction activities. Incorporate construction BMPs from the OHV BMP Manual or subsequent applicable document, as appropriate.

- **Water Guideline 2.5:** Improve areas that have experienced substantial erosion from surface water runoff, as determined by annual inspections, to reduce erosion and sedimentation. Implement rehabilitation concepts for these features, as appropriate.

With adherence to these General Plan goals and guidelines and preparation and implementation of a SWPPP with BMPs for each construction project subject to the NPDES Construction General Construction Permit, the impact of the General Plan related to short-term construction-related erosion and loss of topsoil would be **less than significant.** (See Section 3.8, “Hydrology and Water Quality,” for additional detailed analyses regarding erosion and sediment transport, particularly those related to project design and operation.)

Mitigation Measure: No mitigation is required.

IMPACT 3.5-4 Increase in Geologic Hazards from Expansive Soils

Expansive soils shrink and swell as a result of moisture change. Over time, these volume changes can cause damage to building foundations, underground utilities, and other subsurface facilities and infrastructure that are not designed and constructed appropriately to resist damage associated with changing soil conditions. Placing buildings or constructing infrastructure on or in expansive soils can result in structural failure. As shown in Table 3.5-1, many of the soil types in the planning area have moderate shrink-swell potential.

However, by law, all buildings and associated facilities must be designed according to the requirements of the CBC, which contains criteria for reducing structural damage from expansive soils to the maximum extent practicable.

With compliance with the CBC, the impact of the General Plan related to hazards from construction in expansive soils would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.5-5 Construction on Soils Unsuitable for Septic Systems

The Prairie City SVRA General Plan discusses the potential to construct various new facilities in the future in addition to providing off-road riding opportunities. Such proposed new facilities include a visitor center, district office, ranger station, overnight campgrounds, and enhanced spectator facilities for large events. These new amenities would require wastewater treatment for new restroom facilities.

Based on a review of NRCS soil data (Table 3.5-1), soils in the planning area are rated with a severe limitation because they would be unsuitable for conventional septic leach fields. Most of the planning area's soils consist of a shallow layer of silt, sand, or clay, underlain by bedrock. In general, these shallow soils have a very low permeability rate (a high water-holding capacity) and thus tend to percolate too slowly. In contrast, most bedrock soils have a very high permeability rate (a very low water-holding capacity) and thus tend to percolate too quickly. Both conditions would render the planning area's soils unsuitable for conventional septic systems. All existing restroom facilities at Prairie City SVRA consist of either portable toilets or concrete vault toilets (where the wastewater is pumped and removed rather than percolated through the soil).

Geo Guidelines 1.1 (shown above within the discussion of Impact 3.5-2) and 1.2 (shown below) in the Prairie City General Plan recommends that restroom facilities be designed to use wastewater containment systems to avoid the need for soil percolation of wastewater.

Geo Goal 1: Manage the SVRA to minimize geologic hazards while maintaining a quality OHV recreational experience.

- **Geo Guideline 1.2**: Avoid constructing restroom facilities that require soil percolation of wastewater. All new restrooms should use wastewater containment systems (i.e., wastewater holding tanks such as those used in portable toilets or concrete vault toilets), with periodic removal, treatment, and disposal off-site by a licensed contractor.

With adherence to these General Plan guidelines, the impact of the General Plan related to soils that are unsuitable for conventional septic systems would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.5-6 Contribution to the Loss of Locally and/or Regionally Important Mineral Resources

As shown in Figure 2-11 of the General Plan, CGS has not designated any deposits in the planning area as regionally important mineral resources (i.e., Mineral Resource Zone 2, "Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists"). The planning area lies along one of the ancestral channels of the American River. Portions of the planning area, including the Yost site, were mined for gold in the late 1800s and early 1900s, leaving behind piles of dredger mine tailings. In addition, a portion of the Yost site has been mined intermittently for sand and aggregate over the last 50 years; however, mining operations at the Yost site ceased in 2012. A small outcrop of the Ione Formation is present in the central portion of the planning area. Some areas of the Ione Formation have been known to contain kaolin clay; however, it is unknown whether this formation in the planning area contains commercially viable clay mining deposits.

The planning area has already been mined for gold, and for aggregate used in commercial construction. If the Ione Formation in the planning area were to contain kaolin clay deposits, mining of such deposits would be an incompatible use with SVRA activities. Most of the planning area has been operated for off-road vehicle recreation since 1972. The activities proposed as part of the Prairie City SVRA General Plan would not result in changes to land uses in the area where the Ione Formation is located that would differ from the historic OHV uses. Therefore, the impact of the General Plan related to a loss of locally or regionally important mineral resources would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.5-7 Contribution to Damage to or Destruction of Unique Paleontological Resources

A detailed paleontological resource assessment and sensitivity determination for each rock formation present in the planning area is provided in Section 2.3.1, “Physical Resources,” of the General Plan and the location of the geologic formations in the planning area is shown in Figure 2-9 of the General Plan. As discussed in detail in Section 2.3.1, “Physical Resources,” of the General Plan, the dredge tailings and the Laguna Formation are not considered paleontologically sensitive. Therefore, earthmoving activities in these formations would have a less-than-significant impact on unique paleontological resources.

Portions of the planning area are underlain by the Mehrten and Ione Formations. Because of the large number of fossils that have been recovered from these formations at Ione, Iowa Hill, Camanche Reservoir, and other locations in the Central Valley and the Sierra Nevada foothills, these rock units are considered to be of high paleontological sensitivity. Thus, the potential exists for construction-related earthmoving activities in the Mehrten and Ione Formations to uncover additional, similar fossil remains. Therefore, previously unknown, unique paleontological resources could be damaged during construction-related earthmoving activities in the planning area within these rock formations. This impact would be potentially significant.

However, Geo Guideline 2.1 in the Prairie City SVRA General Plan (shown below) recommends that paleontological resources training be provided to park staff members. This training would include information about the areas most likely to contain unique paleontological resources, education on current laws related to paleontological resources, and the procedures to follow should paleontological resources be discovered inadvertently during construction. Geo Guideline 2.2 (shown below) states that if paleontological resources are discovered inadvertently during construction activities, construction activities must cease at the fossil location and within the immediate vicinity, and an OHMVR Division archaeologist or other qualified paleontological resource professional must be consulted to determine the potential significance of the find. Should a fossil be determined to be a unique paleontological resource, a recovery plan consistent with Society of Vertebrate Paleontology (1996) criteria would be developed and implemented. The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, curation for any specimen recovered, and a report of findings.

Geo Goal 2: Promote staff education and visitor awareness of paleontological resources and proper procedures to be followed if fossils are discovered.

- **Geo Guideline 2.1:** Provide annual paleontological resource training to all SVRA staff regarding procedures to be followed if paleontological resources are discovered during a project, or if SVRA visitors find a paleontological resource (as specified in Geo Guideline 2.2). Update State Parks peace officers (SPPOs) on current laws related to paleontological resource protection and inform them about areas most likely to contain the unique paleontological resources that would be most susceptible to looting, vandalism, or damage.

- **Geo Guideline 2.2:** If paleontological resources are discovered inadvertently during construction activities, cease construction activities within 100 feet of the fossil and consult an OHMVR Division archaeologist or other qualified paleontological resource professional to determine the potential significance of the find. If the fossil is determined to be a unique paleontological resource, develop and implement a recovery plan consistent with Society of Vertebrate Paleontology (1996) criteria. The recovery plan may include but is not limited to a field survey, construction monitoring, sampling and data recovery procedures, curation for any specimen recovered, and a report of findings.

With adherence to these General Plan guidelines, construction-related effects of the General Plan from inadvertent damage to or destruction of unique paleontological resources would be avoided. The impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

3.5.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the Prairie City SVRA General Plan and implementation of resulting actions would not result in significant impacts related to geology, soils, minerals, or paleontological resources.

3.5.6 MITIGATION MEASURES

No significant impacts related to geology, soils, minerals, and paleontological resources would result with implementation of the General Plan and no mitigation is required.

3.6 GREENHOUSE GAS EMISSIONS

This section evaluates the potential impacts of the Prairie City State Vehicular Recreation Area (SVRA) General Plan related to greenhouse gas (GHG) emissions and climate change. Existing conditions in the planning area and the federal, state, and local regulatory framework are presented in the General Plan. GHG impacts associated with the Prairie City SVRA General Plan are evaluated based on the environmental checklist in Appendix G of the California Environmental Quality Act (CEQA) Guidelines and on guidance from the Sacramento Metropolitan Air Quality Management District (SMAQMD).

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. The proper context for addressing this issue in an EIR is in an assessment of cumulative impacts. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the climate system. Unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of localized or regional concern, the locations where GHG emissions are generated are not much of a concern. Rather, the total amount and types of GHG emissions ultimately have the most significant effect on climate change.

As described further in Chapter 4, “Cumulative Analysis,” cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. A lead agency should generally undertake a two-step analysis when it determines the significance of a proposed project’s contribution to anticipated adverse future conditions. The first question to ask is whether the *combined* effects of *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question to ask is whether the proposed project’s *incremental* effects are cumulatively considerable, and thus significant in and of themselves.

3.6.1 EXISTING SETTING

EXISTING CLIMATE

The difference between weather and climate is a measure of time. Weather is the atmospheric conditions over a short period of time, and climate is the way in which the atmosphere “behaves” over relatively long time periods (NASA 2008). See General Plan Section 2.3, “Significant Resource Values,” for a detailed description of the existing climate in the Sacramento Valley Air Basin (SVAB).

ATTRIBUTING CLIMATE CHANGE—THE PHYSICAL SCIENTIFIC BASIS

Certain gases in the earth’s atmosphere, classified as GHGs, play a critical role in determining the earth’s surface temperature. When high-frequency solar radiation (such as visible light) enters the earth’s atmosphere from space (the sun), a portion of the radiation is absorbed by the earth’s surface and a smaller portion is reflected back toward space. When infrared radiation comes into contact with GHGs in the atmosphere, a portion of that thermal energy can be absorbed by the GHG molecule, re-radiated back toward the earth's surface, or both. In either case, heat is "trapped" within the earth's atmosphere. This phenomenon, known as the "greenhouse effect," 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 earth's greenhouse effect are carbon dioxide (CO_2), methane, nitrous oxide, and high–global warming potential (high-GWP) GHGs. High-GWP gases are typically emitted at lower rates than CO_2, methane, and nitrous oxide; however, emissions of these gases could still make a significant contribution to climate change because high-GWP GHGs are more effective at absorbing outgoing infrared radiation than CO_2.

The concept of CO_2-equivalency (CO_2e) is used to account for the different potentials of GHGs to absorb infrared radiation. This potential, known as the GWP of a GHG, depends on the lifetime or persistence of the gas molecule in the atmosphere, its ability to absorb or trap infrared radiation, and the spectrum of light energy (range of wavelengths and frequencies) absorbed by the gas molecule. Every GHG's GWP is measured relative to CO_2, which has a GWP of 1.

High-GWP GHGs include ozone-depleting substances, chlorofluorocarbons, hydrochlorofluorocarbons, and halons, in addition to their replacements, hydrofluorocarbons. Perfluorocarbons and sulfur hexafluoride also are high-GWP GHGs. Anthropogenic (human-caused) emissions of these GHGs have led to atmospheric levels of GHGs exceeding natural ambient concentrations, thus intensifying the greenhouse effect. Such emissions have led to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate (IPCC 2007:665). CO_2 emissions associated with fossil fuel combustion for energy-related activities are the primary contributors to human-induced climate change (EPA 2014).

Climate change is a global problem because GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for a long enough time to be dispersed around the globe, continually contributing to the greenhouse effect. The exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, but more CO_2 is currently emitted into the atmosphere than is sequestered. Carbon dioxide sinks or reservoirs include vegetation and the ocean, which respectively absorb CO_2 through photosynthesis and dissolution, two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, Northern Hemisphere forest regrowth, and other terrestrial sinks within a year, and the remaining 46 percent remains stored in the atmosphere (Seinfeld and Pandis 1998).

Similarly, effects of GHGs are borne globally, in contrast with the localized air quality effects of criteria air pollutants and TACs. GHG emissions generated in the United States could contribute to climate change impacts in other countries or continents. The quantity of GHG emissions necessary to ultimately result in climate change is not precisely known; suffice it to say that the quantity is enormous, and no single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or in the global or local climate or microclimate.

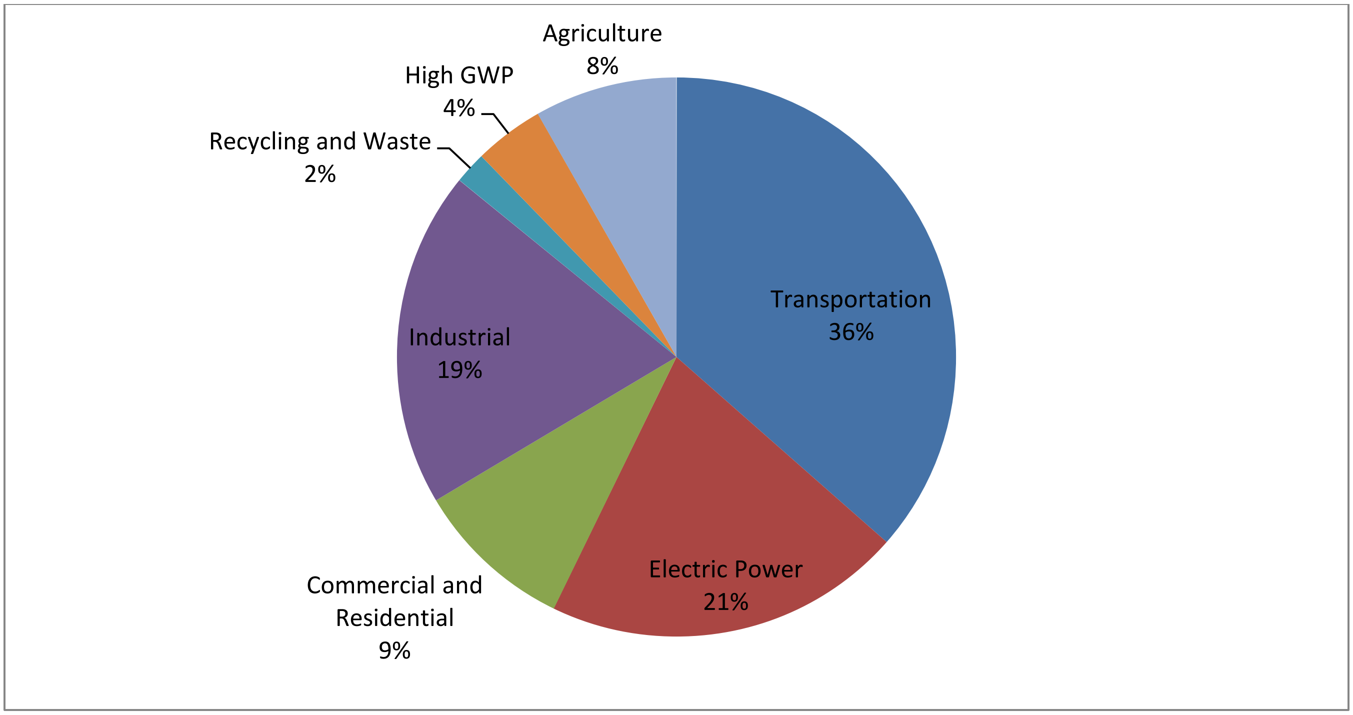
ATTRIBUTING CLIMATE CHANGE—GREENHOUSE GAS EMISSIONS

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 2014). Emissions of CO_2 are byproducts of fossil fuel combustion. Methane emissions are largely associated with anaerobic conditions (lack of oxygen) found in natural resources (e.g., wetlands), agricultural practices, and landfills. Nitrous oxide emissions are also largely attributable to agricultural practices and soil management.

Land use decisions and development projects are not themselves GHG emissions sectors; however, land use decisions can affect the rate at which GHGs are emitted from several sectors (e.g., transportation, energy consumption, water, and waste). In addition, activities associated with the long-term operation of development projects can result in direct or indirect GHG emissions. Direct emissions are GHG emissions generated at the site of consumption. For example, using natural gas for space or water heating generates direct GHG emissions because the natural gas is combusted at the site where the heat is used. Conversely, using electricity generates indirect GHG emissions because although the consumer may use the electricity at home, the generation of that electricity and the subsequent GHG emissions (if fossil fuels are used for generation) are likely occurring off-site. The following sections describe the major GHG emission sectors and their associated emissions at the state and local levels.

STATE GREENHOUSE GAS EMISSIONS INVENTORY

As the second largest emitter of GHGs in the United States and the 16th largest in the world (2002), California contributes a large quantity of GHGs to the atmosphere (CEC 2006:i). Emissions of CO_2 are byproducts of fossil-fuel combustion and are attributable in large part to human activities associated with the transportation industry, electricity generation, natural gas consumption, and agriculture (ARB 2014). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2014:Figure 3.6-1).



Source: ARB 2014

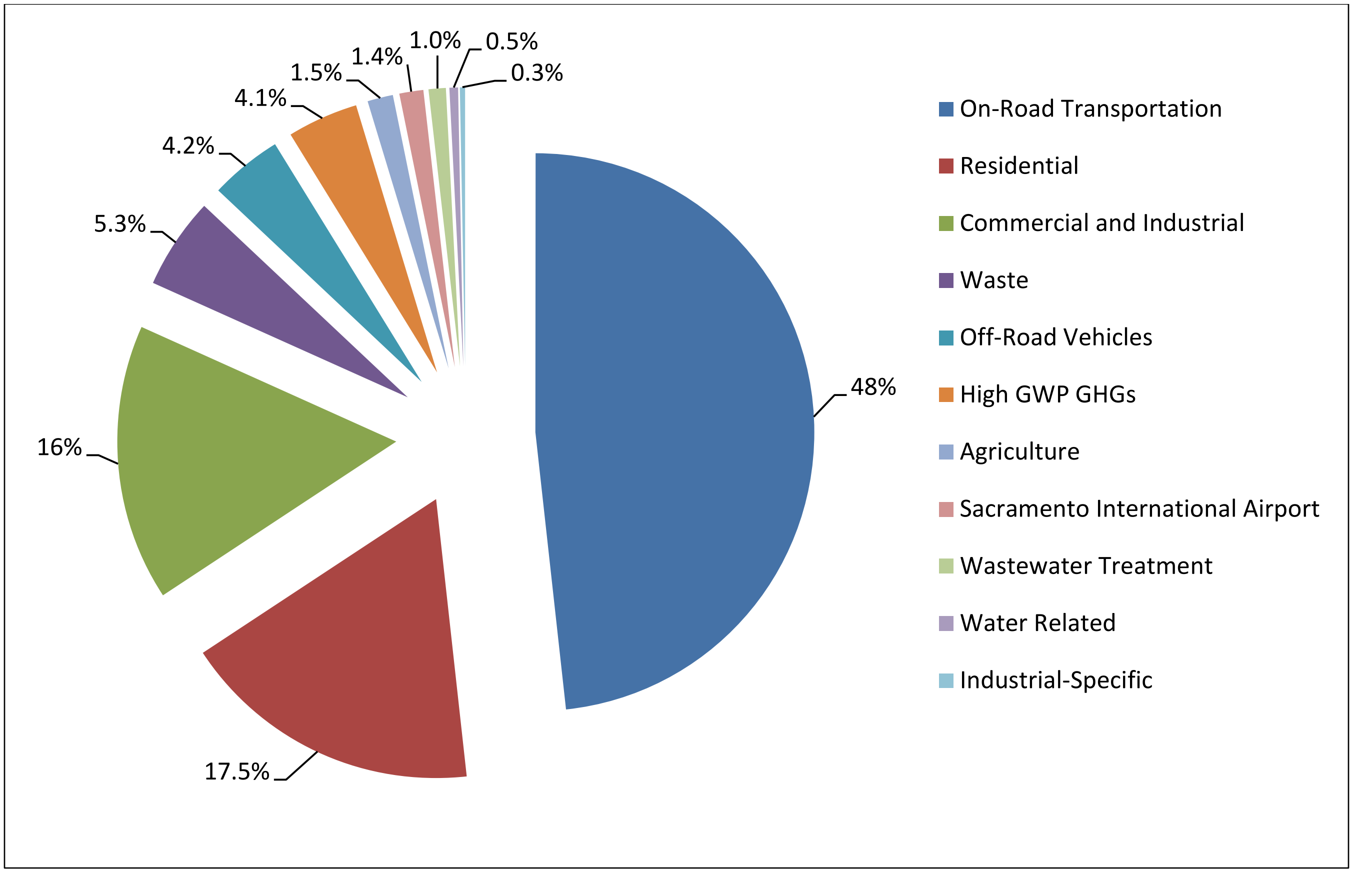
Figure 3.6-1. 2012 California Greenhouse Gas Emissions by Sector

LOCAL INVENTORY

In recognition of the rising concern about the threat of climate change, Sacramento County, along with all incorporated cities within Sacramento County, opted to join the International Council for Local Environmental Initiatives program. The county committed to conduct an inventory of emissions within its jurisdiction as part of a countywide effort to account for GHG emissions. The countywide inventory includes GHG emissions generated in both the incorporated and unincorporated areas of Sacramento County. In Sacramento County, on-road transportation is the largest emitter of GHGs (generating almost half of total GHG emissions), followed by residential energy use. In Sacramento County, off-highway vehicles (OHVs) account for 4.2 percent of GHG emissions (DERA 2009) (Figure 3.6-2).

3.6.2 REGULATORY SETTING

Federal, state, and regional and local plans, policies, regulations, and laws regarding GHG emissions that are relevant to land use planning are discussed in Section 2.7.3.5, “Greenhouse Gas Emissions Regulations,” of the General Plan.



Source: DERA 2009

Figure 3.6-2. 2005 Sacramento County Greenhouse Gas Emissions by Sector

3.6.3 THRESHOLDS OF SIGNIFICANCE

As discussed above, GHG emissions and climate change are inherently a cumulative impact. Therefore, all significance conclusions for this resource area consider if the project's impact would be cumulatively considerable. Based on Appendix G of the CEQA Guidelines, and guidance from SMAQMD, implementation of the Prairie City SVRA General Plan would have a potentially significant impact related to GHG emissions if it would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

As stated in Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Activities associated with the Prairie City SVRA General Plan would occur in the southeastern portion of the SVAB, where air quality is regulated by SMAQMD; thus, the thresholds of significance established by SMAQMD are used to evaluate emissions associated with implementation of the General Plan.

On October 23, 2014, the SMAQMD Board adopted recommended GHG emission thresholds of significance (SMAQMD 2014a), which are consistent with the GHG reduction goals of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. SMAQMD stated that during the development process, lead agencies should estimate project-related GHG emissions from both short-term construction activities and long-term operations, including direct mobile- and area-source GHG emissions and indirect emissions associated with the project's consumption of electricity and water (SMAQMD 2014b). SMAQMD adopted thresholds of significance for both the construction and operational phases of projects and defined both thresholds as 1,100 metric tons (MT) of CO_2e per year. SMAQMD also provides an option of demonstrating a 21.7 percent reduction in GHG emissions as an adequate mitigation measure to show consistency with AB 32 and the GHG reduction goals of ARB's Climate Change Scoping Plan (Scoping Plan).

3.6.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

At the time of this analysis, the construction activities associated with implementation of the Prairie City SVRA General Plan have not been fully defined; therefore, this discussion of construction emissions is limited to qualitative assessments based on potential activities.

With implementation of the General Plan, visitors and Prairie City SVRA maintenance staff members entering and exiting the SVRA, and on-site maintenance and recreational activities by OHVs (e.g., motorcycles, all-terrain vehicles [ATVs], four-wheel-drive vehicles, quarter midgets, karts) would generate long-term operational GHG emissions. Maintenance activities would be infrequent and nominal; the resulting emissions would be negligible and thus are not included in the emissions estimates presented in Table 3.6-1.

Long-term operational GHG emissions were quantified using the same methods and assumptions as those described in Section 3.2, "Air Quality": by comparing baseline emissions from 2013 against future emissions for 2030 based on projected population growth and a proportional increase in visitors to Prairie City SVRA. It should be noted that assuming that the number of visitors and amount of park use would increase proportional to regional population growth is a conservative assumption used for this analysis. In reality, only a portion of the additional population would use the SVRA. RV2013 and EMFAC2011, which were used to model air quality emissions, are also able to provide outputs for computing GHG emissions.

Table 3.6-1. Summary of Operational Greenhouse Gas Emissions from Implementation of the Prairie City SVRA General Plan

Source of Emissions	MT CO_2e per year				
	Existing Emissions[1]		Projected Emissions (2030)	Net Change[2]	
	2004	2013		2004–2030	2013–2030
Visitor vehicles[3]	962	663	565	(397)	(98)
OHVs	167	124	138	(29)	14
Total operational emissions	1,128	787	703	(425)	(84)

Notes: MT CO_2e = metric tons of carbon dioxide equivalent; OHV = off-highway vehicle; SVRA = State Vehicular Recreation Area

[1] 2004 represents the peak-attendance year between 1990 and 2013 and 2013 represents the baseline year. The net change between year 2013 and buildout year 2030 is used to conservatively evaluate the net change in operational greenhouse gas emissions associated with implementation of the Prairie City SVRA General Plan.

[2] Net decreases are shown in parenthesis.

[3] Mobile-source emissions for 2013 and 2030 estimated include California's Pavley clean-air standards and the Low Carbon Fuel Standard; these standards were not yet in effect in 2004.

[4] Off-highway vehicles represent only emissions associated with visitor recreational vehicles. Emissions associated with maintenance activities are expected to be negligible and are not included in these emissions estimates.

Source: Modeling performed by AECOM in 2014; Appendix B

Indirect GHG emissions could include emissions resulting from the use of electricity, water consumption, and solid waste disposal by facilities (including new buildings and infrastructure) proposed as part of the General Plan. Indirect emissions are those where the consumption or activity occurs in one area, but the emissions are generated in another physical location. Although the proposed buildings and infrastructure would be located on the SVRA site, the occurrence and generation of GHG emissions would be off-site. For example, electricity would be consumed at the site, but the actual electricity generation would occur at a power plant off-site. Similarly, solid waste would be generated on-site, but the GHG emissions associated with decomposition of the solid waste would occur at a landfill facility off-site. As discussed previously, because the SVRA construction plans have not yet been defined, quantifying long-term indirect GHG emissions associated with General Plan buildout would be speculative. Nevertheless, based on the limited information available, it is anticipated that new facilities envisioned in the General Plan would result in minimal increases in energy consumption, water consumption, and waste disposal during SVRA operations. In addition, the long-term operational GHG emissions generated by any new facilities would be subject to CEQA compliance when these facilities are proposed for construction or expansion. Therefore, GHG emissions from indirect sources were not quantified in this analysis.

The net change in long-term operational GHG emissions with implementation of the Prairie City SVRA General Plan was compared to the SMAQMD threshold of significance discussed above, 1,100 MT CO_2e per year, to determine the level of impact. In addition, the potential facilities and use areas of the

General Plan were evaluated against the AB 32 Scoping Plan to determine its consistency with the applicable GHG reduction plan.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.6-1 Direct or Indirect Generation of Greenhouse Gas Emissions that May Have a Significant Effect on the Environment

The Prairie City SVRA General Plan would expand the existing recreational OHV facilities and relocate other facilities such as the ranger station, Twin Cities District Office, kart track, dirt oval track (formerly known as mini MX track). It also includes new facilities such as a visitor center, overnight camping area, enhanced spectator facilities, improved circulation, and a multiuse special-events area. The General Plan also would provide additional route and trail system areas. Construction activities related to the new structures and recreational features would be developed across a 10- to 15-year time frame and the large usable acreage of the planning area. Operation of heavy-duty diesel equipment, material delivery trucks, and worker vehicles associated with future construction would produce short-term, localized GHG emissions. The precise specifications for the proposed facilities have not been determined at the time of this analysis, but the proposed facilities are anticipated to be minimal and would not require intensive construction activities. Therefore, construction-related GHG emissions are expected to be much less than the “example thresholds of significance” presented above in Section 3.6.3, and construction-related GHG impacts on the environment would be **less than significant**.

Design of the new facilities envisioned in the General Plan would comply with Title 24 of the California Building Standards Code, and the facilities would replace some existing, less efficient and more resource-intensive facilities currently operating at Prairie City SVRA. Thus, operational emissions from these new facilities would result in minimal increases in energy consumption, water consumption, and waste disposal. The impact of direct and indirect operational GHG emissions from new facilities would be **less than significant**.

It is anticipated that the number of visitors coming to Prairie City SVRA and the amount of activity by OHVs (e.g., vehicle miles traveled) would both increase as a result of projected population growth increases in Sacramento County and surrounding counties. These increased activity levels would be expected to cause an increase in the SVRA’s annual GHG emissions from visitor vehicles and OHVs. As discussed above, all operational emissions were quantified using the same assumptions and methods as described in Section 3.2, “Air Quality.”

Table 3.6-1 presents the estimated existing baseline GHG emissions (baseline year of 2013 and peak-attendance year of 2004), projected future emissions (2030) and the net change in operational GHG emissions associated with implementation of the Prairie City SVRA General Plan. Implementing the General Plan would result in GHG emissions decreases of approximately 425 MT CO_2e per year for 2004–2030 and 84 MT CO_2e per year for 2013–2030. In both scenarios, the change in net emissions would be negative, clearly meaning that they would be below the currently adopted thresholds of significance. The decrease would be the result of stricter regulations on vehicle emissions, the Low Carbon Fuel Standard, and vehicle fleet turnover.

The long-term operational emissions associated with new structures and increased trail maintenance activities and general park conditions in the planning area are not included in the emissions estimates presented in Table 3.6-1. However, based on the anticipated level of facilities development (newly constructed buildings) under the General Plan, it is highly unlikely that the operational GHG emissions associated with General Plan implementation would exceed the thresholds of significance, even when those emissions are added to the net change.

The purpose of this analysis is to put the General Plan's GHG emissions in the appropriate statewide context to evaluate whether the contribution of General Plan implementation to the global impact of climate change would have a significant impact on the environment. The GHG emissions associated with the General Plan fall well below the adopted threshold discussed above and, because of cleaner OHV and on-road vehicle engines and cleaner burning fuels, net GHG emissions would decrease in the future even with an increase in visitors. Therefore, GHG emissions changes resulting from implementation of the Prairie City SVRA General Plan would not have a significant effect on the environment, either directly or indirectly. This impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.6-2 Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The AB 32 Scoping Plan, along with the statewide GHG reduction plan, can be used to evaluate the impacts of the Prairie City SVRA General Plan. The AB 32 Scoping Plan does not specifically address OHVs; however, it discusses efficiency strategies and low-carbon fuels for OHVs as a strategy to achieve reductions from the transportation sector. The Low Carbon Fuel Standard is currently being implemented throughout the state, and fuel purchased for visitor vehicles and OHVs would be Low Carbon Fuel Standard fuels. Continuing implementation of and compliance with California's Red Sticker and Green Sticker Program (discussed in Section 3.2, "Air Quality") also would limit GHG emissions. Furthermore, Table 3.6-1 shows that the net change associated with development in the planning area would be negative and clearly would not exceed the applicable thresholds of significance when compared to either baseline year.

The approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. Considering this information, the design and purpose of the Prairie City SVRA General Plan would not conflict with implementation of the Sacramento County Climate Action Plan or the AB 32 Scoping Plan, or with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. This impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.6.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the General Plan and implementation of the resulting actions would not result in any significant impacts.

3.6.6 MITIGATION MEASURES

No significant impacts related to GHG emissions would result with implementation of the General Plan and no mitigation is required.

3.7 HAZARDS AND HAZARDOUS MATERIALS

This section describes the existing physical and regulatory setting for hazards and hazardous materials. It also presents an analysis of impacts related to hazards and hazardous materials that would result from implementing the Prairie City State Vehicular Recreation Area (SVRA) General Plan.

Other sections of this draft environmental impact report (DEIR) discuss potential hazards and associated impacts related to the following topics:

- *Emissions of air contaminants and inhalation:* Section 3.2, “Air Quality”
- *Geologic hazards:* Section 3.5, “Geology, Soils, Minerals, and Paleontological Resources”
- *Public health effects and hazards from groundwater contamination not associated with the site-specific drinking water source and flooding:* Section 3.8, “Hydrology and Water Quality”
- *Levels of service provided by fire personnel and other emergency responders:* Section 3.10, “Public Services and Utilities”

3.7.1 EXISTING SETTING

Section 2.3.1, “Physical Resources,” of the General Plan discusses water quality and contaminant transport and local hydrogeology within Prairie City SVRA. General Plan Section 2.4.2, “Public Safety,” describes the emergency services available to the SVRA. Additional information is provided below.

HAZARDOUS MATERIALS

“Hazardous materials” are both hazardous substances and hazardous wastes. Federal regulations define a hazardous material as “a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (Title 49, Section 171.8 of the Code of Federal Regulations [49 CFR 171.8]). Section 25501 of the California Health and Safety Code defines a “hazardous material” as follows:

> Hazardous material means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Section 25141(b) of the California Health and Safety Code defines “hazardous wastes” as wastes that:

> …because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness[, or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Prairie City SVRA is registered with the California Department of Toxic Substances Control (DTSC) as a Small Quantity Generator of hazardous waste. Hazardous materials that may be stored in the Prairie City SVRA maintenance yard include unleaded gasoline, diesel fuel, oil, and tires to be recycled. Gasoline and diesel fuel are stored in one aboveground tank separated in two 500-gallon sections. Hazardous materials are collected annually by a hazardous materials recycler. Every employee who handles these materials receives training and education. Safety meetings are held at Prairie City SVRA biweekly for maintenance staff members and bimonthly for support staff members.

As described in Chapter 2 of the General Plan, Prairie City SVRA contains about 200 acres of hydraulic dredge tailing remnants from 1850s placer mining operations. The tailings are located primarily in the northwest portion of the SVRA and consist of low (5- to 10-foot-high) mounds of cobbles, silt, and sand. The mining resulted in deposits of clays and silts known as “slickens.” Background studies conducted at the Aerojet site (Borch 1994, cited in Aerojet Rocketdyne 2013) concluded that metals concentrations in the slickens areas are typically higher than in the surrounding cobble piles. Metals are generally immobile but may leach into the soil column as precipitation infiltrates. Metals that are discharged in the form of plating fluids, or that are suspended/dissolved in water or solvents, may also contribute to the depth to which metals may migrate into the soil column. However, no evidence exists showing that metals that may be present in the mine tailings constitute a health or physical hazard to people, plants, or animals (Fennessy, pers. comm., 2014). The following is a detailed description of the hazardous materials sites and current site conditions.

AEROJET

Aerojet (now Aerojet Rocketdyne Holdings Inc.) has owned and operated a facility for aerospace testing activities in Rancho Cordova since the early 1960s. Approximately 5,900 acres of this site were designated as a Superfund site by the U.S. Environmental Protection Agency (EPA) in 1983. Previous activities conducted at the Aerojet facility included manufacturing and testing of solid rocket motors and liquid rocket engines, chemical manufacturing, and disposal of materials. During the development of rocket propulsion systems, the Aerojet facility used various chemicals, including solvents, propellants, fuels, oxidizers, metals, and explosives.

In 1989, Aerojet, EPA, the Central Valley Regional Water Quality Control Board (RWQCB), and DTSC entered into a partial consent decree. This agreement established procedures and obligations to achieve the goals listed in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA; generally referred to as Superfund) and the National Oil and Hazardous Substances Pollution Contingency Plan. Aerojet is leading groundwater and soil cleanup efforts, and is actively consulting with the federal, state, and local water agencies and the Community Advisory Group for Aerojet Superfund issues. Overseeing agencies closely monitor a large number of groundwater monitoring wells and require that the effectiveness of the groundwater containment system be evaluated regularly. EPA conducts a formal public review of the Superfund cleanup every 5 years to ensure that the activities are providing the expected level of protection.

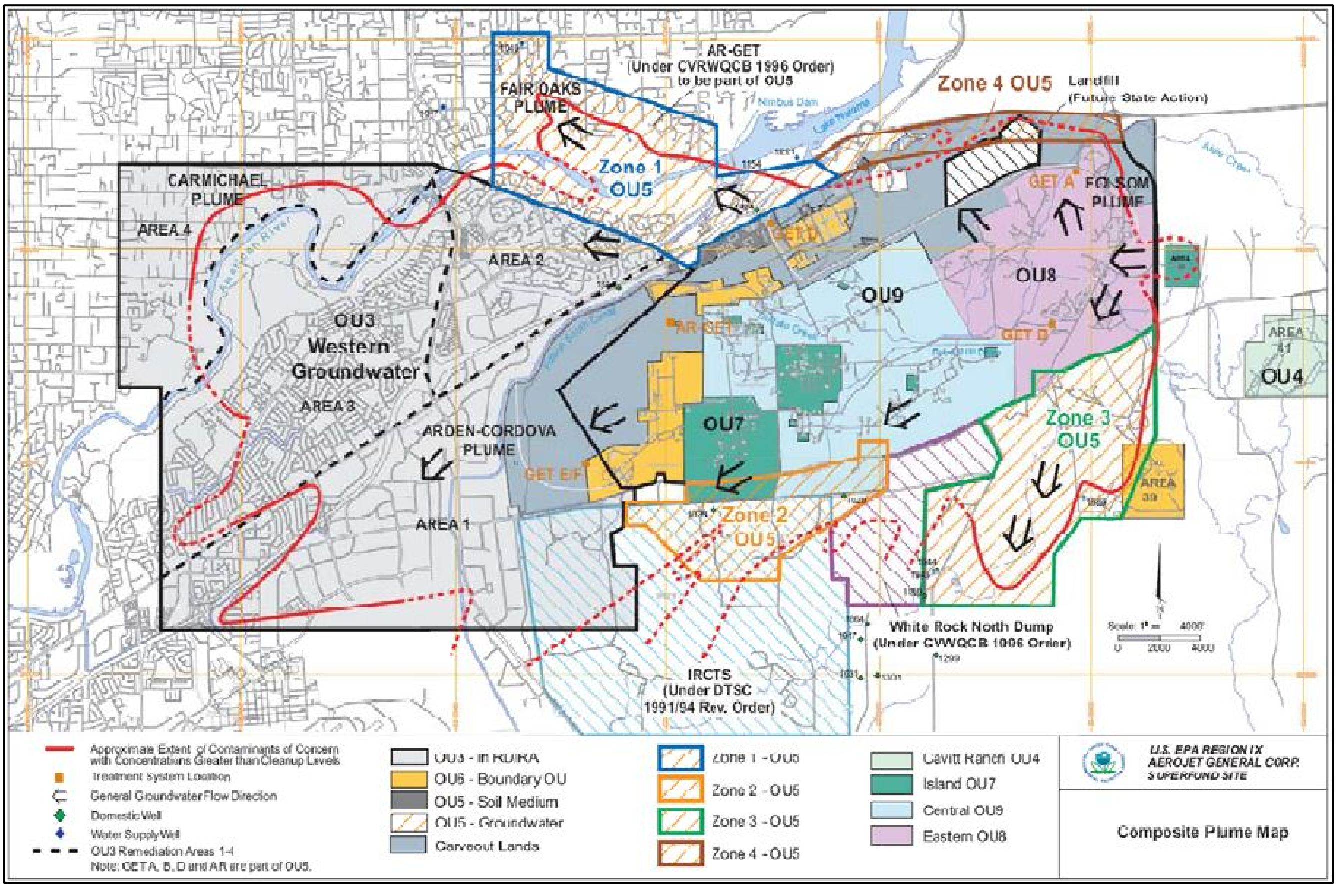
EPA updated its *Overview Report for the Aerojet General Superfund Site* on March 17, 2015 (EPA 2015). The report noted that potential health risks include drinking contaminated groundwater and, for persons with access to the Aerojet site or Areas 39, 40, and 41 and the Inactive Rancho Cordova Test Site, drinking contaminated surface water or coming into direct contact with or accidentally ingesting contaminated soils.

PERIMETER GROUNDWATER OPERABLE UNIT

In July 1998, the partial consent decree was modified to remove certain areas (referred to as “carve-out” lands) from the Aerojet Superfund site and divide the Superfund site into operable units (OUs) to facilitate completion of remedial investigation/feasibility studies. The OUs allowed Aerojet and the regulatory agencies to prioritize investigation and cleanup work. Before any portion of the Aerojet Superfund site can be made available for new uses, EPA must issue a record of decision (ROD) or similar certification indicating that remedial actions have been completed, and that no unacceptable risks would be posed to human health or the environment.

In August 2002, EPA and the Central Valley RWQCB issued parallel orders to Aerojet to begin or expand critical work to achieve full containment of contaminated groundwater on the north and south sides of the Aerojet property and to prevent contamination from flowing off Aerojet’s property. Aerojet was directed to conduct a remedial investigation/feasibility study for the Perimeter Groundwater Operable Unit (OU-5) to address the groundwater contamination and investigate more than two dozen potential soil source areas located within Aerojet’s perimeter development plans (EPA 2011). Contaminated drinking-water wells above the response levels have been removed from service (SWRCB 2010). (The response level is the concentration at which the California Department of Public Health recommends removing a drinking-water source from service.) The ROD for OU-5 was signed in February 2011, memorializing the plan to contain and treat contaminated groundwater moving off the Aerojet property (EPA 2011). The approach includes a system to pump groundwater at the outer edge of the plume to prevent further spread of contaminated groundwater. Existing treatment systems are located within the Aerojet site north of White Rock Road. This system would be improved by pumping additional water from more heavily contaminated areas near the Aerojet property. EPA considers this an interim groundwater remedy because cleanup relies on eliminating source areas to be addressed in future OUs. Implementing the cleanup action for OU-5, in conjunction with the existing OU-3 cleanup to the west and other state enforcement actions to the south, is expected to fully contain groundwater contamination around the boundary of the Aerojet property (EPA 2011). Together, the containment actions at OU-3 and OU-5 will pump and treat more than 20 million gallons of contaminated groundwater every day to prevent the loss of additional drinking water supplies.

In September 2011, EPA selected a remedial design and remedial action (RD/RA) for OU-5, which consists of four zones. The western half of the Prairie City SVRA is included in Zone 3 of OU-5 (EPA 2011) (Figure 3.7-1).



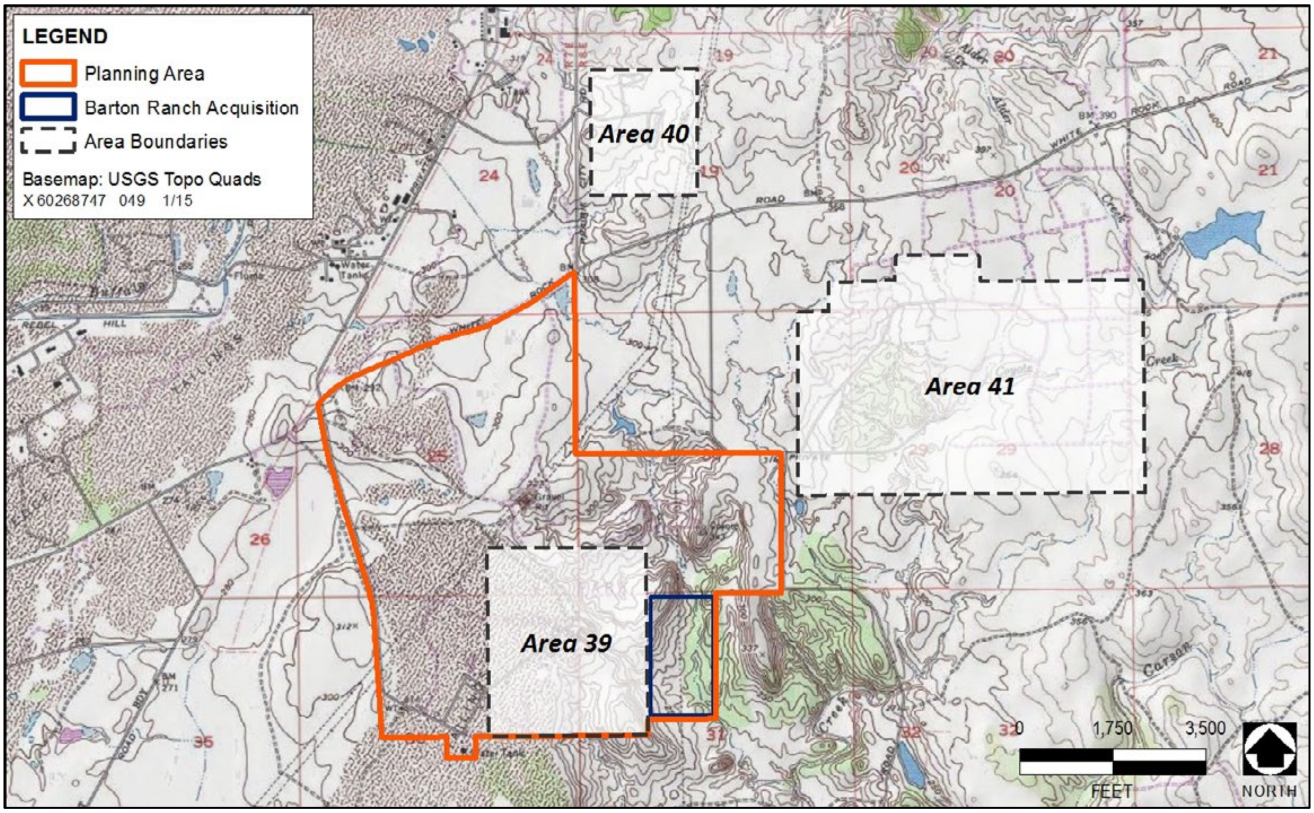
Source: Data compiled by AECOM in 2015

Figure 3.7-1. Aerojet Site—Relationship with All Operable Units and Existing and Proposed Extraction Wells

Seventeen of the soil areas investigated as part of OU-5 had no substantial contamination. However, in four areas, contaminated soil must be excavated to allow residential use, and another four areas will require a system to extract solvent vapors to reach cleanup standards. Figure 3.7-1 shows existing and proposed extraction wells. Two existing wells and one proposed well are located adjacent to the main entrance road to Prairie City SVRA. Three additional proposed wells are located near the intersection of White Rock Road and the main entrance road. Three other soil areas show effects from chemicals migrating from source areas that are in other operable units, and controls on uses of these lands will be needed in the foreseeable future. For the remaining source OUs on the Aerojet property, EPA continues to investigate and evaluate options to address both groundwater and soil contamination. As plans are developed for the source OUs, EPA will prepare a series of additional proposed plans to seek public input before making a determination on the best cleanup options.

AREA 39

Area 39 is located in the southeastern corner of the planning area (Figure 3.7-2). Between 1970 and 1972, Area 39 was the principal burn disposal site for Aerojet operations. During that period, a reported 60–80 pounds per day of the following wastes were burned on the property: ammonium perchlorate; potassium perchlorate; ammonium nitrate; nitroquanidine; trichloroethylene and solid propellant residues; nitroplasticizer wastes; igniter or pyrotechnic material; propellant and propellant-contaminated paper, cloth, tools, etc.; beryllium-contaminated material; laboratory chemicals; and miscellaneous chemicals (e.g., dilute acids, alkalis, flammables, process wastes, solvents) (State Parks 1991). Based on an analysis of Prairie City SVRA conducted by Aerojet, no hazardous wastes are known to exist on the property except in Area 39 (State Parks 2008).



Source: Data compiled by AECOM in 2015

Figure 3.7-2. Aerojet Areas 39, 40, and 41 Relative to the Planning Area

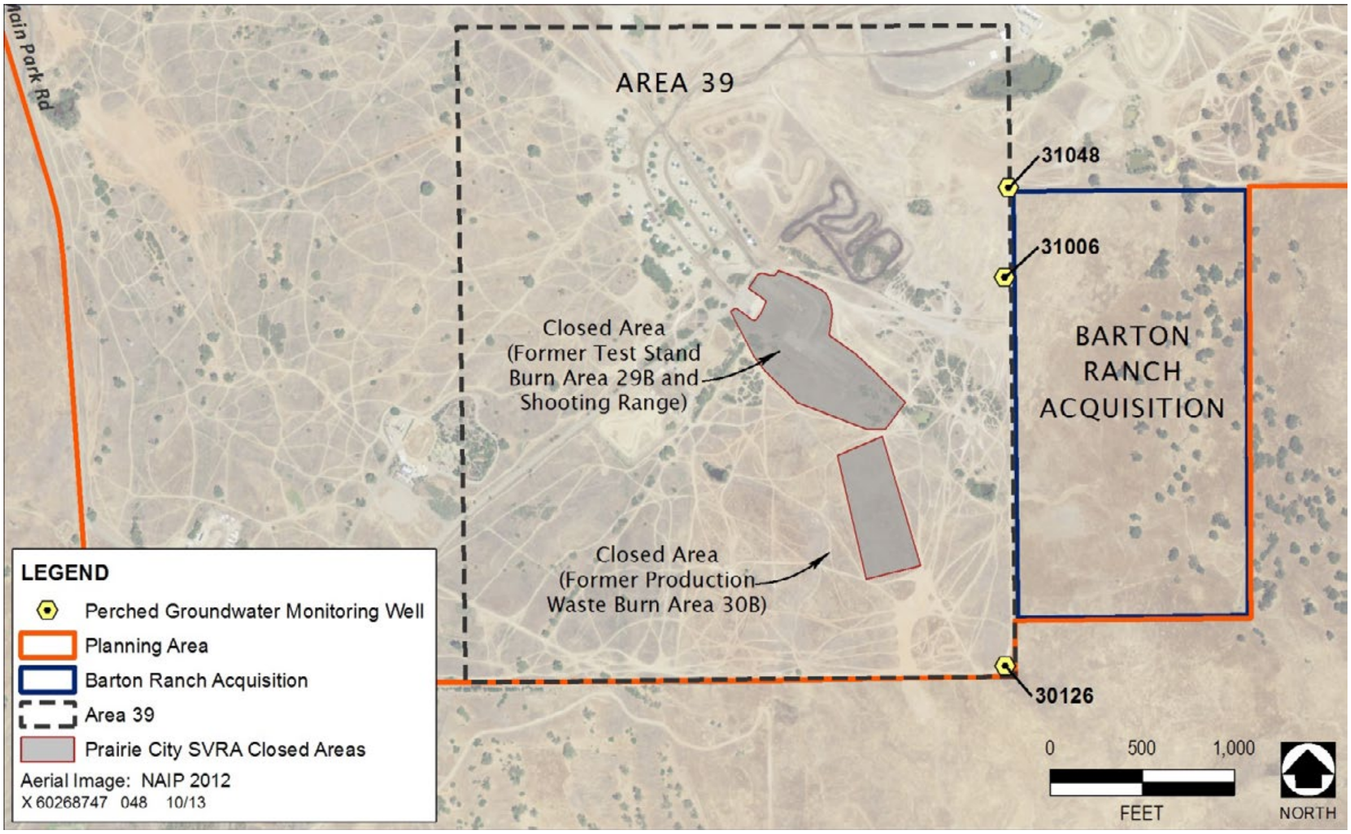
Chapter 2 of the Prairie City SVRA General Plan identifies the major contaminants found in Area 39. The contaminants in groundwater and the vadose zone (the area between the land surface and the water table) consist of n-nitrosodimethylamine (NDMA), perchlorate, and trichloroethylene (TCE). The Area 39 Open Space, located south and east of Area 39, is defined as the area surrounding known source areas where the review of historical aerial photographs revealed features of interest or areas where potential chemicals may have migrated from Area 39 source areas. Source areas within Area 39 were used to identify potential sampling locations to assess human health and ecological risks associated with the property (discussed further below). Potential source areas have been extensively evaluated through sampling of groundwater, surface water, soil, and soil vapors.

The Phase I Environmental Site Assessment prepared for the Barton Ranch acquisition summarizes the results of a remedial investigation for Area 39 prepared by Environmental Resources Management in October 2010. Laboratory analysis of surface water runoff from tributaries of Coyote Creek produced during the rainy season indicated low levels of nitrate at two sample locations within the SVRA. Concentration levels for nitrate in the surface water are lower than the maximum contaminant level of 45,000 micrograms per liter set by the California Department of Public Health.

The report also indicates that low levels of TCE were detected in groundwater samples collected from one of the three perched groundwater monitoring wells at Prairie City SVRA. TCE concentration levels in the perched groundwater are lower than the maximum contaminant level of 5 micrograms per liter set by the California Department of Public Health. The three perched groundwater monitoring wells extend north to south within the SVRA, near the western boundary of the Barton Ranch acquisition area (Figure 3.7-3). The lateral extent of TCE in perched groundwater has been adequately delineated. The available data indicate that the perched zone does not contain TCE concentrations greater than its allowable maximum contaminant level. The perched nature of the groundwater source indicates a limited recharge source, and subsequently precludes sustainable yields for domestic water use.

There are no plans to use perched groundwater as a domestic water source at the SVRA. Because of the relatively impermeable lithologic material within Area 39, most precipitation flows off the site instead of infiltrating into the soil. As a result, perched groundwater in Area 39 does not show significant seasonal variations. South of Site 30B, the perched groundwater's potentiometric surface contours indicate a southerly flow direction. Aerojet Rocketdyne's groundwater extraction and treatment system, located southwest of Area 39, is currently extracting and treating groundwater that emanates from the Aerojet site. This groundwater extraction causes groundwater to flow generally toward the west or southwest, away from the Barton Ranch acquisition area.

As reported in Chapter 2 of the Prairie City SVRA General Plan and noted above, EPA updated its *Overview Report for the Aerojet General Superfund Site* on March 17, 2015 (EPA 2015). Sampling results indicate that perchlorate was likely discharging to surface waters from two springs located south and southeast of the SVRA. Two source areas, both located within Area 39 in the planning area—29B, a former test stand burn area, and 30B, a former waste production burn area (Figure 3.7-3)—have been fenced off and access to these areas is prohibited. Source area 29B was closed primarily because of lead contamination associated with the firing range and the source area 30B was closed primarily because dioxins and furans were found in soils.



Source: Fennessy, pers. comm., 2014

Figure 3.7-3 Area 39 of the Former Aerojet Operations Facility, Located within the Planning Area

An additional investigation was completed by Aerojet (Aerojet Rocketdyne 2013) to further evaluate Area 39 and the surrounding area. The sampling results indicate that perchlorate was likely discharging to surface waters from two springs located to the south and southeast of the SVRA. State Parks coordinates directly with Aerojet regularly to assure that areas of concern are managed properly. A feasibility study with remedial actions and monitoring suggestions based on proposed uses is expected to be completed in 2018.

Human Health Risk Assessment

A human health risk assessment, screening-level ecological risk assessment, and risk-to-groundwater evaluation were completed for Area 39 and presented in the *Boundary Operable Unit Human Health and Ecological Risk Assessment Report*. The results were summarized in the *Draft Remedial Investigation Supplement for the Island Operable Unit (OU-7)* (Aerojet Rocketdyne 2013:5-16, 5-17).

Under current land use conditions for Area 39 (i.e., the southeastern corner of the planning area as shown in Figure 3.7-2), receptors are defined as commercial/industrial (industrial and maintenance/utility workers) and construction workers, as well as recreation visitors. Under realistic future-use conditions, receptors are defined as:

- industrial workers,
- construction workers,
- maintenance/utility workers,
- residents (adults and children),
- commercial workers,
- patrons of commercial establishments (e.g., shoppers or other visitors), and
- off-highway vehicle (OHV) recreation users of the use areas and potential facilities that would be constructed with implementation of the General Plan.

Of these receptor types in Area 39, current and future potential commercial/industrial workers, construction workers, and future potential residents (adults and children) likely have the greatest chance of exposure. The State of California's groundwater supply well located at the SVRA supplies water for three residential units, sinks and restrooms, administration areas, and dust suppression on the tracks and in the staging and concession areas. Because this area is used by off-road recreational motorsports traffic (all-terrain vehicles, off-highway motorcycles), recreational receptors were also included in the conceptual model for the site. Only residential receptors were evaluated in the supplemental human health risk screening, because the residential receptor is the most sensitive receptor scenario included in the site's conceptual model. Limiting the evaluation to this pathway was found to be sufficient to characterize potential risks based on the remedial investigation supplement (RIS) data.

The risks of the chemicals of potential concern identified in the RIS data set were calculated using the maximum concentrations. Incremental lifetime cancer risks and hazard indices were presented for each medium investigated (Aerojet Rocketdyne 2013:5-18, 5-19). The following conclusions were reached regarding the human health risk screening for the RIS data:

- No soil chemicals of potential concern were identified; consequently, incremental lifetime cancer risk and hazard-index values were not calculated for soil.
- Benzene and chloroform were identified as soil vapor chemicals of potential concern. The calculated incremental lifetime cancer risk and hazard index using the supplemental data are lower than those presented in the Boundary Operable Unit (BOU) risk assessment. The calculated hazard index was

below the target hazard index of 1 and the incremental lifetime cancer risk was slightly above the *de minimis* risk level of 1×10^{-6}.

- Nitrate, perchlorate, and phosphorus were identified as surface-water chemicals of potential concern. The calculated hazard index using the supplemental data is higher than the hazard index presented in the BOU risk assessment, but still below the point-of-departure hazard index of 1 (Aerojet Rocketdyne 2013:5-20, 5-21).

Ecological Screening

Ecological studies related to the use of Area 39 as an OHV park were performed for the State of California. Area 39 is highly disturbed by off-road vehicular traffic; however, it also contains numerous areas with sensitive ecological habitat for both terrestrial and aquatic species. By definition, the sensitive ecological receptors are plants, soil invertebrates, birds, and mammals. The United States Environmental Protection Agency Region 9 Ecological Soil Screening Levels (Eco-SSL) for terrestrial receptors were selected as the baseline risk value for the defined sensitive ecological receptors. The Eco-SSLs represent the conservative end of the exposure and effects species distributions, and thus are protective of terrestrial ecosystems.

The RIS data were reviewed against ecological screening levels to assess whether the data collected indicated potential ecological risks. This supplemental ecological screening focused on sensitive receptors and the limited RIS data set, and did not provide a detailed risk assessment as included in the BOU human health risk assessment. Off-road riding trails are scattered throughout Prairie City SVRA and some roads are paved. Area 39 and the Area 39 Open Space include ruderal/disturbed annual grassland habitat, intermixed with some paved areas and a few seasonal ponds. Fauna species common to this area, as identified in the BOU human health and ecological risk assessment, are habitat generalists such as the rock pigeon, mourning dove, western fence lizard, European starling, house mouse, and deer mouse, or species that may venture in from adjacent vegetation communities (Aerojet Rocketdyne 2013:5-21).

In May 2006, the two ponds (Area 39 Ponds 1 and 2) located downstream of the firing range below source area 29B (former test stand burn area) were observed to support a variety of aquatic life including green heron, bullfrogs, and songbirds (Figure 3.7-3). Other bird species noted were western meadowlark, swallow, lark sparrow, red-tailed hawk, and turkey vulture. Detention basins and drainages are present in the northern portion of Area 39. Numerous elderberry shrubs were observed adjacent to and near Area 39.

The Area 39 Open Space consists primarily of rangeland used for livestock grazing. The area has rolling hills largely covered in grasses; several springs are present, along with streams fed by these springs. The bird species noted above for Area 39 would also be expected in the Area 39 Open Space (Aerojet Rocketdyne 2013:5-21).

Nitrate in surface water was initially selected as a chemical of potential ecological concern. Further evaluation determined, however, that detections of this chemical are not an overriding concern because the ecological screening level used is based on the overly conservative assumption that nitrate is as toxic as nitrite to aquatic biota. No chemicals of potential ecological concern were selected in soil, soil vapor, or sediment samples collected in 2013 from the Area 39 Open Space.

A finding of no chemicals of potential ecological concern in current soil, soil vapor, and sediment samples demonstrates that previously identified ecological areas of concern at Area 39 do not need to be expanded. Based on the findings of the Area 39 screening-level ecological risk assessment and this supplemental ecological screening, a baseline ecological risk assessment is recommended for Area 39 (Aerojet Rocketdyne 2013:5-26, 5-27). The baseline ecological risk assessment will be incorporated into the feasibility study and used to develop a remedial plan.

DRINKING WATER SOURCE

An on-site well, approximately 286 feet deep, supplies water to Prairie City SVRA. Water is stored in a 500,000-gallon storage tank in the southwest portion of the SVRA. Approximately 83.4 million gallons of water are available each year, and the SVRA used approximately 14.5 million gallons in 2014. Existing and proposed facilities are or would be supported by this well, which currently supplies three residential units, sinks and restrooms, and administration areas, and provides water for dust suppression on the SVRA’s tracks and in its staging and concession areas.

On July 14, 2014, NDMA was detected at 8.2 nanograms per liter (ng/L) in the well. Although there is not a maximum contaminant level for NDMA in drinking water, the State of California has published a notification level for NDMA of 10 ng/L. If a chemical concentration is greater than its notification level in drinking water that is provided to consumers, the California Department of Public Health (CDPH) recommends that consumers be notified about the presence of the chemical, and about health concerns associated with exposure to it. The Response Level, the level at which CDPH recommends removing the source of potable supply, is 300 ng/L. An analysis conducted on April 27, 2015, concluded that the SVRA is at 4.2 ng/L, which is a reduction from the first detection of 8.2 ng/L in July 2014 (Harper, pers. comm., 2015).

During the expansion of the groundwater extraction and treatment facility, treatment of groundwater had to be discontinued for several months to allow for construction and piping modifications. This work was completed between October 2013 and May 2014. Aerojet has been extracting water again and treating this water to below required levels; however, the extended down time during construction may have allowed the NDMA plume to migrate south toward the Prairie City SVRA water supply well. Aerojet restarted the extraction wells near Prairie City SVRA, and groundwater flow (and the NDMA plume) is expected to be redirected toward the extraction wells. NDMA concentrations in the Prairie City SVRA water supply declined to 4.2 ng/L in April 2015 and are expected to reach nondetect levels over time. Per the long-term agreement between Aerojet and Prairie City SVRA, Aerojet will continue bimonthly testing unless a detection spike occurs, in which case sampling will increase to monthly or weekly depending on the severity.

DATABASE SEARCHES

In April 2014, AECOM performed a search of DTSC's EnviroStor database and the State Water Resources Control Board's (SWRCB's) GeoTracker database. Other databases searched include the SWRCB list of "active" cease-and-desist actions and cleanup or abatement orders, and the list of SWRCB solid-waste disposal sites with waste constituents above hazardous-waste levels outside the waste management unit for Prairie City SVRA and surrounding area (DTSC 2014; SWRCB 2014).

The DTSC database search identified no documented hazardous-materials release sites in or within one-quarter mile of the planning area. The SWRCB GeoTracker website lists seven "open-site assessment" cases in the planning area, and no cases within one-quarter mile (Table 3.7-1). Summaries of GeoTracker open-site assessment cases identify potential contaminants of concern, potential media affected, and a cleanup action report. The seven cases within Prairie City SVRA involve soil, soil vapor, and groundwater sampling for a variety of contaminants (e.g., dioxins, furans, perchlorate, volatile organic compounds [VOCs]) associated with the former burning activities that occurred in Area 39 as described above. Metals, perchlorate, dioxins/furan, and VOCs were found to exceed screening levels for human health and ecological risks.

Table 3.7-1. State Water Resources Control Board Spills, Leaks, Investigations, and Cleanup Program Cases within Prairie City SVRA

Geotracker ID	Site Name	Cleanup Status	Address	City	Latitude	Longitude
T10000002297	Aerojet-General Corporation—Aerojet 29b	Open—Site Assessment	0 Aerojet Road	Rancho Cordova	38.59617865	-121.149931
T10000002299	Aerojet-General Corporation—Aerojet 30b	Open—Site Assessment	0 Aerojet Road	Rancho Cordova	38.59326052	-121.1487722
T10000002300	Aerojet-General Corporation—Aerojet 31b	Open—Site Assessment	0 Aerojet Road	Rancho Cordova	38.59511162	-121.1472085
T10000002302	Aerojet-General Corporation—Aerojet 32b	Open—Site Assessment	0 Aerojet Road	Rancho Cordova	38.59686623	-121.1486435
T10000002303	Aerojet-General Corporation—Aerojet 33b	Open—Site Assessment	0 Aerojet Road	Rancho Cordova	38.59637989	-121.1476135
T10000002304	Aerojet-General Corporation—Aerojet 34b	Open—Site Assessment	0 Aerojet Road	Rancho Cordova	38.5954072	-121.1474848
T10000002305	Aerojet-General Corporation—Aerojet 35b	Open—Site Assessment	0 Aerojet Road	Rancho Cordova	38.59644697	-121.1563683

Source: SWRCB 2014

The SWRCB’s list of cease-and-desist actions and cleanup or abatement orders includes the Aerojet Superfund site. This list contains many cease-and-desist orders and cleanup and abatement orders that do not concern the discharge of wastes that are hazardous materials. Many of the listed orders relate to, for example, discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials. The SWRCB’s list of solid-waste disposal sites does not include the Aerojet Superfund site or the planning area.

AIRPORT SAFETY

The former Mather Air Force Base is located approximately 8 miles west of the planning area. The Air Force base was closed in September 1993. Sacramento County has implemented a reuse plan for the base. Mather Field reopened for civilian use in May 1995 and is home to Mather Regional Park, the Mather Commerce Center by McCuen Properties, and Mather Airport, to which UPS moved its operation (SCAS 2015). *The Mather Airport Comprehensive Land Use Plan* (SACOG 1997) identifies safety zones surrounding the airport that include land use compatibility criteria. Prairie City SVRA is outside of all the safety zones delineated in the plan.

There are no private airstrips within 2 miles of the planning area.

WILDLAND FIRE

California Public Resources Code (PRC) Sections 4201–4204 and Government Code Sections 51175–51189 require the identification of fire hazard severity zones in California. The California Department of Forestry and Fire Protection (CAL FIRE) has established a system for classifying the severity of fire hazards. Fire hazard severity zones are measured qualitatively, based on vegetation, topography, weather, crown fire potential (a fire’s tendency to burn upward into trees and tall brush), ember production, and movement within the area of question.

Fire prevention areas considered to be under state jurisdiction are referred to as “state responsibility areas.” In state responsibility areas, CAL FIRE is required to delineate three hazard ranges: moderate, high, and very high. Only the very-high-fire-hazard severity zones must be identified in “local responsibility areas,” which are under the jurisdiction of local entities (e.g., cities, counties).

The planning area is located in a moderate fire hazard severity zone as mapped by CAL FIRE (2007). Because Prairie City SVRA is a state facility, CAL FIRE provides on-site fire management. The El Dorado Station near Placerville is the primary CAL FIRE station that provides service to the planning area. Emergency response time from this station is estimated to be 25 minutes.

Fire protection in local responsibility areas is typically provided by city fire departments, fire protection districts, and counties, and by CAL FIRE under contract to local fire agencies. CAL FIRE and the Sacramento Metropolitan Fire District have entered into mutual-aid agreements. The Sacramento Metropolitan Fire District is responsible for responding to life and property fires in the planning area.

The closest Sacramento Metropolitan Fire District fire station, Station 63, is located approximately 6 miles west of the planning area. Additional discussion of fire services is included in Section 3.10, “Public Services and Utilities,” of this DEIR.

The *Wildfire Management Plan, Prairie City State Vehicular Recreation Area* (State Parks 2011) was prepared to identify employee responsibilities related to wildland fires and to inform fire control agency staff of ownership, control features, sensitive park resources, and policy. Chapter 1 of the plan describes activities and training that precede each fire season. Chapter 2 describes activities that occur during a fire, and Chapter 3 describes subsequent rehabilitation activities.

SCHOOLS

There are no existing schools within one-quarter mile of the planning area. The *Folsom South of 50 Specific Plan* was adopted by the City of Folsom in June 2011. The Public Services & Facilities section of this plan shows that the closest proposed school to Prairie City SVRA would be 0.8 mile east of the White Rock Road/Prairie City Road intersection, which is just outside the planning area boundary.

3.7.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous-Materials Handling

EPA is primarily responsible for enforcing and implementing federal laws and regulations pertaining to hazardous materials. Applicable regulations are contained mainly in CFR Titles 29, 40, and 49. Hazardous materials are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

- *Resource Conservation and Recovery Act of 1976 (RCRA)*: The RCRA (42 U.S. Code [USC] 6901 et seq.) established an all-encompassing federal regulatory program for hazardous substances. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques to dispose of various hazardous substances. EPA has delegated regulation oversight of many of the RCRA requirements to DTSC.
- *CERCLA*: Also called the Superfund Act, CERCLA (42 USC 9601 et seq.) required the creation of a trust fund to provide broad federal authority for releases or threatened releases of hazardous substances that could endanger public health or the environment.
- *Superfund Amendments and Reauthorization Act of 1986*: CERCLA created the Superfund hazardous-substance cleanup program (Public Law 96-510, enacted December 11, 1980). The program was enlarged and reauthorized by the Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499).

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. EPA compiles a list of national priorities among the known or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories, known as the National Priorities List. These locations are commonly referred to as “Superfund sites.” EPA provides oversight and supervision for federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous-materials disposal restrictions and treatment standards.

In addition, the federal Emergency Planning and Community Right-to-Know Act of 1986 states the planning requirements for hazardous materials, to help protect local communities in the event of accidental release of hazardous substances. The Construction Safety and Health Outreach Program of the U.S. Department of Labor’s Occupational Safety and Health Administration (OSHA) regulates use and safety considerations related to blasting activities. The Bureau of Alcohol, Tobacco, Firearms, and Explosives regulates storage of explosives and blasting agents (27 CFR 55, “Commerce in Explosives”).

Worker Safety Requirements

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

National Oil and Hazardous Substances Pollution Contingency Plan

The National Oil and Hazardous Substances Pollution Contingency Plan is the federal plan for responding to oil spills and releases of hazardous substances. The contingency plan established the National Response Team and its roles in the National Response System. The National Response Team plans and coordinates responses to major discharges of oil or hazardous waste, provides guidance to regional response teams, coordinates a national program of preparedness planning and response, and facilitates research to improve response activities.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California has been granted primary oversight responsibility by EPA to administer and enforce hazardous-waste management programs. DTSC, the SWRCB, and the California Department of Resources Recycling and Recovery (formerly California Integrated Waste Management Board) also regulate the generation of hazardous materials. State regulations have detailed planning and management requirements so that hazardous wastes are handled, stored, transported, and disposed properly, to reduce risks to human health and the environment. Key elements of state laws pertaining to hazardous wastes are highlighted below, with references to California code sections for more detailed information.

Hazardous-Materials Handling

The California Hazardous Materials Release Response Plans and Inventory Law of 1985, also known as the Business Plan Act, requires preparation of hazardous-materials business plans and disclosure of hazardous-materials inventories. A hazardous-materials business plan is to include an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for training employees on safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, and it delegates its authority to local jurisdictions that enter into agreements with the state. Local agencies, including Sacramento County, administer these laws and regulations.

Worker Safety Requirements

The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA), assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (California Code of Regulations [CCR] Title 8) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, warnings about exposure to hazardous substances, and preparation of emergency action and fire prevention plans. Cal/OSHA enforces hazard communication program regulations that require workplaces to maintain procedures for identifying and labeling hazardous substances, inform workers about the hazards of hazardous substances and their handling, and prepare health and safety plans to protect workers at hazardous-waste sites. Employers also must make material safety data sheets available to employees and document employee information and training programs.

Emergency Response to Hazardous-Materials Incidents

California has developed an emergency-response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous-material incidents is one part of this plan. The California Emergency Management Agency manages the plan and coordinates the responses of other agencies, including the California Environmental Protection Agency (Cal/EPA), California Highway Patrol, California Department of Fish and Wildlife, and Central Valley RWQCB.

Hazardous-Materials Transport

The California Highway Patrol, California Department of Transportation, and DTSC are responsible for enforcing federal and state regulations and responding to transportation emergencies involving hazardous materials. Regulations governing hazardous-materials transport are included in the California Vehicle Code (CCR Title 13), the State Fire Marshal Regulations (CCR Title 19), and CCR Title 22. Hazardous materials can be transported only under a registration issued by DTSC. DTSC or EPA issues identification numbers to track hazardous-waste transporters and treatment, storage, and disposal facilities for hazardous materials. The identification number is used to identify the hazardous-waste handler and to track waste from point of origin to final disposal. All materials transport takes place under a manifest, and compliance with CCR Title 22 requires that transporters take immediate action to protect human health and the environment in the event of spill, release, or mishap.

Government Code Section 65962.5 (Cortese List)

The provisions of Section 65962.5 of the California Government Code are commonly referred to as the "Cortese List," after the legislator who authored the legislation that enacted it. The Cortese List is a planning document used by state and local agencies to comply with the California Environmental Quality Act (CEQA) requirement to provide information about the location of hazardous-materials release sites. Section 65962.5 requires Cal/EPA to develop an updated Cortese List at least annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies must provide additional information for the Cortese List about releases of hazardous materials.

Cleanup of Contaminated Sites

Several state regulatory structures govern cleanup of contaminated sites in California. DTSC regulates many of these programs, including RCRA corrective actions, state Superfund sites, brownfields programs, and voluntary cleanups. The SWRCB (through the RWQCBs and some local agencies) regulates releases with the potential to affect water resources under programs such as the Leaking Underground Storage Tanks Program and the Spills, Leaks, Investigations, and Cleanups Program. Regulatory authority for these programs may be delegated by the federal government (as with RCRA corrective actions directed by DTSC) or may be found in the California Health and Safety Code. The specifics of these regulations vary. Generally, however, they require that sites where hazardous materials have been released be reported, investigated, and remediated, and that any hazardous materials be disposed of appropriately. These programs govern a range of pollutants, such as solvents, petroleum fuels, heavy metals, and pesticides in surface water, groundwater, soil, sediment, and air.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County

Sacramento County's involvement in hazardous-materials management is intended to minimize the impact of hazardous materials on human health and the environment. The Hazardous Materials Element of the *Sacramento County General Plan of 2005–2030* contains 15 policies that address providing educational programs, ensuring cooperation among agencies, preventing groundwater and soil contamination, reducing the occurrences of hazardous-materials accidents, and developing and implementing hazardous-materials management programs and processes. Many of the policies call for expanded involvement by local governments in regulating and enforcing hazardous materials, with funding provided by fees and fines. The primary focus of the implementation strategies is to maximize the use of existing expertise by Sacramento County agencies and minimize the need for extensive retraining for new programs (Sacramento County Community Planning & Development Department 2011).

The Hazardous Materials Division of the Sacramento County Environmental Management Department is the lead regulatory agency and is responsible for tasks related to the storage, handling, and management of hazardous materials (Sacramento County Environmental Management Department 2012, 2014). The division, appointed by the Secretary of Cal/EPA to be the Certified Unified Program Agency (CUPA), conducts inspections of all facilities that generate hazardous wastes. The Hazardous Materials Division is one of three local agencies that have a 24-hour hazardous-materials incident response team; the Sacramento (city) Fire Department and Sacramento County’s Transportation Division are the other two. The Hazardous Materials Division responds to all Level II and Level III incidents involving chemical releases, as well as any other hazardous-materials situations.

The CUPA Program is the consolidation of six state hazardous-materials management programs into one program under the authority of the CUPA. The CUPA inspects businesses or facilities that handle or store hazardous materials; generate and/or treat hazardous waste; own or operate underground storage tanks; store petroleum in aboveground tanks in amounts exceeding state thresholds; or store federally regulated hazardous materials in amounts exceeding state thresholds. The CUPA Program is instrumental in accomplishing this goal through education, community and industry outreach, inspections, and enforcement. Although the CUPA is administered by Sacramento County, because it was certified by Cal/EPA, the CUPA has regulatory authority at the state-owned Prairie City SVRA.

Spark Arrester Regulations

PRC Section 4442 and California Vehicle Code Section 38366 state that no person is to use, operate, or be allowed to use or operate any off-highway motor vehicle on any forest-covered land, brush-covered land, or grass-covered land unless the vehicle is equipped with a spark arrester that is maintained in effective working order. In addition, a spark arrester that is affixed to an exhaust system cannot be placed or mounted in a way that will allow flames or heat from the exhaust system to ignite any flammable material.

3.7.3 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact related to hazards and hazardous materials if it would:

- 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 require the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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;
- result in a safety hazard for people residing or working within the area covered by an airport land use plan or within the vicinity of a private airstrip;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

3.7.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

This analysis considered potential impacts related to hazards that are associated with the historic and current use of the planning area and its surroundings; the routine transport, use, or disposal of hazardous materials; wildland fire protection; and emergency response. It also analyzed potential impacts related to hazardous materials that could be introduced if the General Plan were implemented. The use areas and conceptual locations of the potential facilities presented in the General Plan were developed through a careful screening process of constraints mapping to avoid potential hazards.

The evaluation of potential impacts is based on a preliminary review of environmental risk databases including DTSC’s EnviroStor database, EPA’s Envirofacts website, and the SWRCB’s GeoTracker website, and CAL FIRE’s Fire Hazard Severity Zone maps for Sacramento County. In addition, reports documenting hazardous conditions resulting from Aerojet’s past activities in the area surrounding and within the planning area were reviewed. The reports reviewed include *EPA Selects Cleanup Plan for Operable Unit 5 of the Aerojet General Corporation Superfund Site*, *Superfund Site Overview Aerojet General Corporation* (EPA 2011, 2015), and *Draft Remedial Investigation Supplement for the Island Operable Unit (OU-7)* (Aerojet Rocketdyne 2013).

The information obtained from these sources was used to establish existing conditions, evaluate the significance of potential environmental impacts based on the thresholds of significance presented above, and determine whether any known hazardous materials may be present at active sites within 0.5 mile of the planning area. The Hazardous Waste and Substances Site List, also known as the EnviroStor database, is maintained by DTSC as part of the requirements specified in PRC Section 65962.5 (the Cortese List). In the EnviroStor database, DTSC identifies sites that have known contamination and sites for which there may be reasons to investigate further. The database lists federal Superfund sites

(National Priority List sites); state response sites, including military facilities and state Superfund sites; voluntary cleanup sites; and school sites.

The GeoTracker database is an information management system related to groundwater that is maintained by the SWRCB. The SWRCB uses GeoTracker to maintain data about leaking underground storage tanks and other types of soil and groundwater contamination, along with associated cleanup activities, as required by PRC Section 65962.5. Sites identified within the boundaries of Prairie City SVRA are listed in Table 3.7-1.

EPA's Envirofacts website identifies toxic releases, hazardous waste, and other violations. Envirofacts presents information from several regulatory agencies and databases, including EPA, DTSC, and the California Emergency Management Agency. This database also contains environmental information that is maintained by EPA, such as the locations of releases of more than 650 toxic chemicals, water-discharge permit compliance, hazardous-waste handling processes, Superfund status, and air emission estimates.

ISSUES NOT DISCUSSED FURTHER IN THIS DEIR

No schools are located within one-quarter mile of Prairie City SVRA. Therefore, implementation of the General Plan would not affect any schools. This issue is not discussed further in this DEIR.

Prairie City SVRA is located approximately 8 miles from the former Mather Air Force Base and is located outside the safety zones identified in the *Mather Airport Comprehensive Land Use Plan*. The SVRA is not located within 2 miles of a private airstrip. Therefore, implementation of the General Plan would not affect any public airports or private airstrips. This issue is not discussed further in this DEIR.

Implementation of the Prairie City SVRA General Plan would not result in substantial adverse effects on existing roadways and would not interfere with an adopted emergency response plans or emergency access routes (see Section 3.11, "Transportation and Traffic," of this DEIR). The General Plan proposes improvements to circulation to improve accessibility and traffic flow. This issue is not discussed further in this DEIR.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.7-1 Potential Risks Associated with the Routine Use, Transport, and Disposal of Hazardous Materials

Prairie City SVRA is registered as a Small Quantity Generator of hazardous waste with DTSC. Hazardous materials typically used in construction operations, such as diesel fuel, solvents, and paints, would likely be used during construction activities associated with General Plan implementation. Hazardous materials used during construction would be handled and stored in accordance with all federal, state, and local regulations, thus minimizing any potential for an accidental release of or exposure to such materials.

Enhancing and expanding facilities and recreational opportunities at Prairie City SVRA would not likely attract additional visitors to the SVRA; however, attendance is anticipated to increase over time, which would increase the use of gasoline and oils needed to operate OHVs. The increased use of these common materials would not create a substantial hazard to the public or environment because individuals would handle relatively small volumes of such materials to operate OHVs at Prairie City SVRA.

In addition, OM Guideline 3.10 in the General Plan (shown below) requires SVRA staff members to promptly clean up hazardous spills and dispose of trash for the health and safety of the environment. Furthermore, OM Guideline 3.4 (also shown below) requires that all facilities be constructed, maintained, and operated in compliance with federal, state, and local regulatory requirements regarding the handling and disposal of hazardous materials for the protection of surface and groundwater, soils, and people.

OM Goal 3: Provide facilities and services that contribute to the safety and convenience of visitors and staff.

- **OM Guideline 3.4:** Construct, maintain, and operate all facilities in compliance with all federal, state, and local regulatory requirements regarding the handling and disposal of hazardous materials for the protection of surface water and groundwater, soils, and people.
- **OM Guideline 3.10:** Promptly clean up and dispose of trash and hazardous spills for the health and safety of the environment and the public and to encourage good visitor stewardship of the SVRA.

With adherence to these General Plan guidelines, implementation of the General Plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.7-2 Potential Health Hazard or Environmental Damage from Release of or Exposure to Hazardous Materials in Area 39

As described in the Area 39 discussion above, pollutants of concern for Prairie City SVRA management are those that could have been generated by past land use activities or could be generated by present and future land use activities within the SVRA. Historic activities by Aerojet have resulted in residual soil and groundwater contamination in the planning area. Present activities such as OHV use and planned future construction, operations, and maintenance could create a new source of pollutants through accidental releases.

As described above, the EPA Region 9 Overview Report noted that potential health risks include drinking contaminated groundwater or surface water, and coming in direct contact with or accidentally ingesting contaminated soils. Source areas in Area 39 have been identified using aerial photography and historical documentation to determine potential sampling locations for assessing human health and ecological risks associated with the property. Potential source areas have been extensively evaluated through sampling of groundwater, surface water, soils, and soil vapors. Two source areas—29B, a former test stand burn area, and 30B, a former waste production burn area, both located within Area 39 in the planning area (Figure 3.7-3)—have been fenced off and access to these areas is prohibited. Source area 29B was closed primarily as a result of lead contamination associated with the shooting range and source area 30B was closed primarily as a result of dioxins and furans found in soils (Fennessy, pers. comm., 2014).

The human health risk assessment, screening-level ecological risk assessment, and risk to groundwater evaluation completed for Area 39 concluded that:

- no soil chemicals of potential concern were identified;
- soil vapors were below the target hazard index of 1 and the incremental lifetime cancer risk was slightly above the *de minimis* risk level; and
- surface water chemicals of potential concern are below the hazard index of 1.

The Response Level, or level at which CDPH recommends removing the source of potable supply, is 300 ng/L. As described above, NDMA currently is at 4.2 ng/L in the SVRA well, which is a reduction from the first detection of 8.2 ng/L in July 2014. In accordance with the long-term agreement between Aerojet and Prairie City SVRA, Aerojet will continue to test the well bimonthly unless a detection spike occurs, in which case sampling will increase to monthly or weekly depending on the severity. The goals and guidelines developed for the General Plan have been designed to prevent potential human health impacts associated with facility development in the vicinity of Area 39. In particular, adherence to the guideline under OM Goal 7 (shown below) would effectively reduce the potential for increased human health effects related to potable water supplies by requiring ongoing monitoring and communication with Aerojet before the siting of new facilities. In addition, Aerojet is preparing a feasibility study for Area 39, which is anticipated to contain prescriptive measures designed to help reduce contaminant transport in groundwater. State Parks plans to coordinate with Aerojet in the future to implement prescriptive measures from the feasibility study as they would apply to the SVRA.

OM Guideline 3.3 in the General Plan (shown below) provides that signage and/or fencing as appropriate would be installed around areas of known potential hazard, such as drop-offs, or restricted areas such as the environmentally contaminated areas in Area 39. General Plan OM Guideline 7.1 (also shown below) provides that when detailed plans are developed for proposed facilities, information from the feasibility study for Area 39 will be incorporated into the plans. All facilities should be sited and managed to avoid health hazards to sensitive receptors (construction workers, park users and employees, and habitat/wildlife). Measures may include implementation of project-specific design measures such as modifications to area closures, limiting uses in identified areas, specific best management practices, monitoring, or remedial measures identified in the feasibility study. In accordance with General Plan OM Guideline 3.13 (shown below), appropriate SVRA staff would obtain OSHA training to better coordinate with Aerojet and oversee construction and maintenance activities.

OM Goal 3: Provide facilities and services that contribute to the safety and convenience of visitors and staff.

- **OM Guideline 3.3:** Provide clear signage and/or fencing as appropriate around areas of known potential hazard, such as drop-offs, or restricted areas such as the environmentally contaminated areas in Area 39.

- **OM Guideline 3.13:** Provide OSHA training for staff, and utilize OSHA-certified staff to coordinate with Aerojet and oversee excavation associated with construction and maintenance activities within Area 39.

OM Goal 7: Manage the SVRA for the protection of human health and ecological health based on recommendations developed in the Aerojet Feasibility Study for Area 39.

- **OM Guideline 7.1:** Incorporate information from the Aerojet Feasibility Study for Area 39 when developing detailed plans for facilities proposed and envisioned in this General Plan. All facilities should be sited and managed to ensure that health hazards to sensitive receptors (construction workers, SVRA users and employees, and habitat/wildlife receptors) are avoided. Measures may include implementation of project-specific design measures such as modifications to area closures, enforcement of limits on uses in identified areas, specific best management practices, monitoring, or remedial measures identified in the Feasibility Study.

With adherence to these General Plan guidelines, implementation of the General Plan would not result in exposure to hazardous materials that could pose a health risk to the public. Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.7-3 Potential Exposure of People or Structures to Wildland Fire

Activities envisioned in the General Plan could ignite a wildland fire as a result of sparks from OHVs, four-wheel-drive vehicles, and off-highway motorcycles, which then could spread to adjacent areas. Implementation of the General Plan is expected to generate an increase in the number of visitors to the SVRA over time, thus increasing the risk of an accidental wildland fire. General Plan implementation also could result in construction of new structures, thus increasing the risk of potential damage to structures from wildland fire. In addition, activities taking place at Aerojet Rocketdyne north of White Rock Road could accidentally ignite a fire that could spread to the SVRA.

Prairie City SVRA is located in a moderate fire hazard severity zone. Prairie City SVRA's Wildfire Management Plan identifies SVRA staff responsibility for all activities related to wildland fires, and informs fire control agency staff of ownership, control features, and sensitive park resources and policy. The SVRA has a large proliferation of OHV trails, which tend to provide a fuel break[1] in the grassland. A fuel break is maintained annually around the three residences located within the SVRA. Roadways that border the SVRA to the north (Grant Line Road), east (Scott Road), and west (Main Park Road) would likely act as firebreaks.[2]

State Parks staff members would maintain a truck with a water tank and pumping capability on-site. Patrol vehicles would carry fire tools and limited water supplies. During periods of high fire danger, temporary closures also may be implemented for four-wheel-drive vehicles and other vehicles equipped with catalytic converters, if warranted to reduce fire risk.

Multiple entrances from White Rock Road and Scott Road provide emergency access routes into Prairie City SVRA. Implementation of OM Guideline 3.5 (shown below) in the General Plan would help to prevent accidental fire ignition and spread of wildfire to adjacent areas because OHVs would be monitored for spark arresters, fuel handling practices would be monitored, and recreational fires would be contained within fire pits.

OM Goal 3: Provide facilities and services that contribute to the safety and convenience of visitors and staff.

- **OM Guideline 3.5:** Prevent accidental fire ignition and spread of wildfire to adjacent areas by monitoring OHVs for spark arresters and by monitoring fuel handling practices. Limit fires to be contained within fire pits, noting such with signage, and provide campground facilities with fire pits for visitor use.

Because access to the SVRA would be improved with implementation of the General Plan, and General Plan guidelines would be followed to reduce the risk of starting accidental wildland fires, the potential for exposure to people and structures to the risks associated with wildland fires would not be substantial. The impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

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[1] A wide strip or block of land on which the native vegetation has been modified so that fires burning into it can be more readily extinguished. It may or may not have control lines constructed in it before a fire occurs.

[2] A natural or constructed barrier used to stop or check fires, or to provide a control line from which to work. A firebreak differs from a fuel break in that fuel has been removed rather than modified.

3.7.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the Prairie City SVRA General Plan and implementation of resulting actions would not result in significant impacts related to hazards and hazardous materials.

3.7.6 MITIGATION MEASURES

No significant impacts related to hazards and hazardous materials would result with implementation of the General Plan and no mitigation is required.

3.8 HYDROLOGY AND WATER QUALITY

This section evaluates the potential impacts of the Prairie City State Vehicular Recreation Area (SVRA) General Plan related to drainage, hydrology, erosion and sediment transport, and water quality. Existing conditions in the planning area and the federal, state, and local regulatory framework are presented in the General Plan.

3.8.1 EXISTING SETTING

Section 2.3.1, “Physical Resources,” of the General Plan includes a discussion of the existing hydrology and water quality setting that is relevant to the impact analysis found in this section.

3.8.2 REGULATORY SETTING

Section 2.7.3.2, “Hydrology and Water Quality Regulations,” of the General Plan describes the federal, state, and regional and local regulations applicable to hydrology and water quality in the planning area.

3.8.3 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact on hydrology and water quality if it would:

- violate any water quality standards or waste discharge requirements, including National Pollutant Discharge Elimination System (NPDES) waste discharge or stormwater runoff requirements, state or federal antidegradation policies, enforceable water quality standards contained in the *Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region* (Basin Plan) or statewide water quality control plans, or federal rulemakings to establish water quality standards in California;

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial on- or off-site erosion or siltation, or that would substantially increase the rate or amount of surface runoff in a manner that would result in on- or off-site flooding;

- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- otherwise substantially degrade water quality;

- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

- place housing, or structures that would impede or redirect flood flows, within a 100-year (0.01 percent annual exceedance probability [100-year flood event]) flood hazard area; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

The water supply for the planning area would be obtained from an on-site groundwater well. Potential impacts associated with the use of groundwater are evaluated in Section 3.13, "Public Services and Utilities."

3.8.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

The analysis considered potential impacts from implementation of the General Plan on hydrology and water quality in the planning area. Potential impacts on resources pertaining to hydrology and water quality (referred to in this section as "water resources") in the planning area are based on information from past studies and on applicable regional planning documents. Among these information sources are the following:

- *Temporary Sediment and Erosion Control Plan for Prairie City State Vehicular Recreation Area, Sacramento County, California* (ARCADIS 2007)
- Engineering field reports (Lund 2005)
- *Folsom South of U.S. 50 Specific Plan Public Draft EIR/EIS* (City of Folsom and USACE 2010)
- *Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan, Grading Permit, Encroachment Permit, and Development Agreement Final Environmental Impact Report* (DERA 2010)
- *Draft Remedial Investigation Supplement for the Island Operable Unit (OU-7), Aerojet Superfund Site, Sacramento County, California* (Aerojet Rocketdyne 2013)
- *Phase I Environmental Site Assessment, Prairie City Barton Ranch, Rancho Cordova, California* (State Parks 2012)

The use areas and conceptual locations of the potential facilities presented in the General Plan were developed through a careful screening process that involved mapping constraints based on the location of known water resources. The potential facilities allowable in each use area would be sited to maximize quality off-highway vehicle (OHV) recreational experiences while avoiding or minimizing impacts on sensitive hydrologic and water resources in the most sensitive areas. Some use areas, such as the stormwater management use area, have very few allowable uses and are subject to specific resource management requirements.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.8-1 **Creation of or Contribution to Water Runoff Exceeding the Existing or Planned Capacity of Stormwater Drainage Systems, or Additional Sources of Polluted Runoff that Could Violate Water Quality Standards or Waste Discharge Requirements**

Existing Stormwater Drainage System

Prairie City SVRA does not have a separate storm sewer system to manage stormwater runoff from the planning area. Runoff infiltrates into the subsurface, evaporates, or flows directly into Coyote Creek or Buffalo Creek and their tributaries as surface water runoff (General Plan Figure 2-12). Several sediment basins and other water quality control best management practices (BMPs) are located throughout Prairie City SVRA to improve water quality and reduce sediment loads to Coyote Creek. Stormwater from the planning area commonly sheet flows into existing drainages, which convey the water to several detention basins. These sediment basins, generally located south of the Prairie City Motocross Track (formerly referred to as the Hangtown Motocross Track) (General Plan Figures 2-6 and 2-15), were developed to capture sediment from the track and other exposed portions of the planning area. However, the current sediment load below the track warrants additional water quality control improvements for average and above-average storm events.

Future Planned Stormwater Drainage System

To provide better water quality to downstream sources, the General Plan proposes to use the Barton Ranch acquisition property as a stormwater management use area. The stormwater management use area would serve as a buffer area where up to 10 acres would be used for water quality improvement facilities and would be designed to accommodate a 100-year storm event. An additional 5 acres of undisturbed land may be used as a spray field for collected stormwater.

To treat runoff from the existing SVRA, the Off-Highway Motor Vehicle Recreation (OHMVR) Division proposes installing a sediment basin and/or biofiltration swale (bioswale) or other stormwater control features in the stormwater management use area. Although not designed yet, the proposed basin and/or bioswale system would be designed to remove sediment and improve water quality so that discharges would meet regulatory requirements before leaving the planning area.

Sources of Potential Polluted Runoff

Pollutants of concern for Prairie City SVRA management are those that could have been generated by past land use activities or could be generated by present and future land use activities. Historic activities by Aerojet have resulted in residual soil and groundwater contamination in the planning area. Concentrations of N-Nitrosodimetylamine (NDMA) in Prairie City SVRA's water supply declined to 4.2 nanograms per liter in April 2015 (Harper, pers. comm., 2015) and are expected to reach nondetect levels over time.

Present activities such as OHV use and planned future construction, operations, and maintenance could also create a new source of pollutants through accidental releases. The General Plan describes the use areas and facilities that could be constructed over the long term (General Plan Table 4-1 and Figure 4-1). The specific facilities envisioned include trails and distributed riding areas, a visitor center, a ranger station, an overnight camping area, a kart track, a dirt oval track, enhanced spectator facilities, improved circulation, the State Parks district offices, and a multiuse special-events area. Typical operation and maintenance activities in the planning area would include washing, fueling, repair, and maintenance of equipment and vehicles; repair of roadways, trails, and other facilities; landscaping; vector and weed control; painting; removal of sanitary waste; litter control; and patrols by State Park Peace Officers. Both construction and routine operation and maintenance often require using chemicals and materials (e.g., fuels, lubricants, paints, solvents, waste materials, fertilizers, insecticides, and herbicides) that can reduce the quality of receiving waters if not managed properly. Furthermore, construction can redistribute pollutants associated with historic uses. Pollutants can be transported into receiving water bodies through stormwater runoff and OHV use.

Based on the potential pollutant sources in the planning area and the water quality objectives presented in the Basin Plan (Central Valley RWQCB 2011, the following constituents have been identified as pollutants of concern for the planning area:

- **Heavy Metals.** Metals are prevalent in OHV components and can be deposited in the watershed through typical vehicle wear and leaks. Additional sources of metals are fuels, adhesives, paints and other coatings, buildings, infrastructure, and the remnants of tailing piles associated with historic mining activities. Metals are of concern because of their acute and chronic toxic effects on aquatic life and their potential to bioaccumulate in aquatic organisms.

- **Nutrients.** Nutrients are inorganic forms of nitrogen and phosphorus. Potential nutrient sources in the planning area are decomposition of organic matter, fertilizers from landscaped areas, and atmospheric deposition. Excess nutrients can contribute to surface algal scum and water discoloration.

- **Pathogens.** Potential sources of pathogens in the planning area consist of waste from domestic pets, wildlife, cattle and livestock, and humans, as well as leaking septic tanks. If transported to receiving waters, pathogens can pose a direct health risk to humans.

- **Pesticides.** Pesticides (herbicides, insecticides, and fungicides) are chemical compounds commonly used to control insects, rodents, plant diseases, and weeds. Excessive application of a pesticide may cause runoff to contain toxic levels of its active component. (The U.S. Environmental Protection Agency has restricted the use of organophosphorus pesticides, including diazinon and chlorpyrifos, and State Parks does not use them in the planning area.)

- **Petroleum Hydrocarbons.** Potential sources of oil, grease, and other petroleum hydrocarbons in the planning area consist of spills and leaks of fuels and lubricants, atmospheric deposition, wearing of tires, and deposition from vehicle exhaust. Petroleum hydrocarbons such as polycyclic aromatic hydrocarbons can accumulate in aquatic organisms from contaminated water, sediments, and food, and they are toxic to aquatic life at low concentrations. Hydrocarbons can persist in sediments for long periods and can result in adverse effects on the diversity and abundance of benthic communities.

- **Sediment.** Sediments consist of total suspended solids, total dissolved solids, and bed load material. Erosion, transport, and deposition of sediment in surface waters can degrade water quality, in addition to inundating riparian vegetation (thereby reducing beneficial habitat structure in stream channels).

- **Trash and Debris.** Trash (e.g., paper, plastic, polystyrene packing foam, aluminum materials) and biodegradable organic matter (e.g., leaves, grass cuttings, food waste) are general waste products that are deposited by anthropogenic (human-caused) and natural processes. Park visitors are the primary source of trash and debris in the planning area. The presence of trash and debris may adversely affect water bodies' recreational value and aquatic habitat. Excess organic matter can create high biochemical oxygen demand in a stream, thereby lowering the water quality. Also, in areas of stagnant water, the presence of excess organic matter can result in the growth of undesirable organisms and the release of odorous and hazardous compounds, such as hydrogen sulfide.

- **Various Chemicals.** Past Aerojet land use activities have left various chemical contaminants in the soil and groundwater in the vicinity of the planning area. The major identified contaminates include NDMA, perchlorate, and trichloroethylene. Per the long-term agreement between Aerojet and Prairie City SVRA, Aerojet will continue bimonthly sampling of drinking water sources unless a detection spike occurs, in which case sampling will increase to monthly or weekly depending on the severity of the spike. Aerojet is currently planning a feasibility study for Area 39 in 2018.

Potential Impact and Mitigation

Implementing the Prairie City SVRA General Plan could result in a potentially significant impact by violating Central Valley Regional Water Quality Control Board (RWQCB) standards. The General Plan could cause such a violation by creating or contributing to water runoff that exceeds existing and planned capacity, and/or by generating additional polluted runoff. However, State Parks plans to manage the discharge of stormwater to Coyote Creek by coordinating with the Central Valley RWQCB and Aerojet. In addition, State Parks would continue to implement the current *OHV BMP Manual for*

Erosion and Sediment Control (OHV BMP Manual) (State Parks 2007), which has specific BMPs to help manage stormwater runoff, sediment transport, and water quality. State Parks would implement the goals and guidelines detailed in Chapter 4 of the General Plan to reduce or eliminate pollutant discharges from the planning area (according to the "maximum extent practicable" performance standard specified in Section 402[p] of the Clean Water Act). These goals and guidelines provide descriptive BMPs that are being used or proposed for stormwater management in the planning area. The BMPs fall under six program areas (also referred to as "minimum control measures"), plus a seventh program area related specifically to OHV management. The seven program areas and the associated General Plan goals are as follows:

- Public Education (IE Goal 3)
- Public Participation (IE Goal 3)
- Illicit Discharge Detection and Elimination (Water Goal 2)
- Construction Site Stormwater Runoff Control (Water Goal 1)
- Postconstruction Stormwater Management (Water Goal 2)
- Pollution Prevention/Good Housekeeping (IE Goal 3 and Water Goal 2)
- OHV Trails and Facilities Management (IE Goal 3 and Water Goal 2)

However, State Parks would also implement General Plan IE Guidelines 3.1 through 3.3, OM Guideline 7.1, Soils Guideline 1.3, and Water Guidelines 1.1 and 2.1 through 2.7 (shown at the end of this impact discussion). These guidelines call for preplanning efforts so that future facilities are located outside of sensitive resource areas to the maximum extent practicable. In areas where avoidance is not feasible, the applicable resource agencies would be consulted, and permits and authorizations would be obtained as needed. In addition, the guidelines call for designing facilities to protect water resources to the maximum extent practicable. For example, the guidelines call for designing roads and trails to include sediment traps or filter areas, armoring stream-channel approaches, hardening the surface of stream crossings, protecting streambanks from vehicle backwash and overflow during flooding, and modifying super elevation (direction of tilt) so that roads and trails drain away from stream corridors.

The General Plan guidelines also call for the use of stormwater BMPs and for areas specifically dedicated to stormwater management. Up to 10 acres of the recently acquired Barton Ranch property would be dedicated to stormwater management and water quality improvements. BMPs such as a sediment basin and/or biofiltration swales would be used in the stormwater management use area to treat runoff exiting the SVRA. Finally, the goals and guidelines have been designed to prevent construction and operation of the planned facilities from contributing to contaminants associated with Area 39, and to prevent residual contaminants from past dredging/mining activities from being released to receiving water bodies. In particular, adherence to the guidelines under OM Goal 7 and to Soils Guideline 1.3 and Water Guideline 2.4 would effectively reduce the potential for exacerbation, release, and/or transport of chemical contaminants found in the soil and groundwater by requiring communication with Aerojet before the siting of new facilities. In addition, Aerojet is preparing a feasibility study for Area 39, which is anticipated to contain prescriptive measures designed to help reduce contaminant transport in groundwater. State Parks plans to coordinate with Aerojet in the future to implement prescriptive measures from the feasibility study as they would apply to the SVRA.

IE Goal 3: Expand understanding of ecological relationships and heighten awareness of and sensitivity to human impacts.

- **IE Guideline 3.1:** Work with interested parties to provide education about the natural ecosystem processes at the SVRA.

- **IE Guideline 3.2:** Provide opportunities for visitors to gain an understanding of the SVRA's diverse natural resources, including vernal pools, oak woodland, and grassland. Interpret local ecology and explain vulnerabilities of sensitive biological resources to human disturbance.

- **IE Guideline 3.3:** Highlight opportunities for OHV recreationists to minimize their impacts on natural resources through engaging, creative interpretive programming. Provide information about temporary and rotating area closures to encourage visitors to allow natural regenerative processes to occur in these areas; foster an understanding about the benefits of these closures.

OM Goal 7: Manage the SVRA for the protection of human health and ecological health based on recommendations developed in the Aerojet Feasibility Study for Area 39.

- **OM Guideline 7.1:** Incorporate information from the Feasibility Study for Area 39 when developing detailed plans for facilities proposed and envisioned in this General Plan. All facilities should be sited and managed to ensure that health hazards to sensitive receptors (construction workers, SVRA users and employees, and habitat/wildlife receptors) are avoided. Measures may include implementation of project-specific design measures such as modifications to area closures, enforcement of limits on uses in identified areas, specific best management practices, monitoring, or remedial measures identified in the Feasibility Study.

Soils Goal 1: Manage the SVRA for a balance of uses that allow protection and conservation of soil while maintaining a quality OHV recreational experience.

- **Soils Guideline 1.3:** Incorporate the guidance provided in the OHV BMP Manual, or subsequent or replacement document, when planning for the development of new facilities. Select, implement, and maintain BMPs, including those designed for stockpiles, during and after construction activities to avoid soil loss and the potential for resulting air pollution or degradation of water quality.

Water Goal 1: Manage the SVRA for the protection of jurisdictional waters of the United States, including wetlands, and waters of the state, while maintaining a quality OHV recreational experience.

- **Water Guideline 1.1:** Avoid locating facilities in areas delineated as jurisdictional waters of the United States, including wetlands; areas that qualify as waters of the state under the Porter-Cologne Water Quality Control Act of 1969, and areas subject to California Department of Fish and Wildlife (CDFW) regulation under California Fish and Game Code Section 1602. Where avoidance is not feasible, such as for trail crossings, design facilities to minimize impacts.

Water Goal 2: Manage the SVRA for the protection of water quality while maintaining a quality OHV recreational experience.

- **Water Guideline 2.1:** Avoid siting facilities in and immediately adjacent to riparian areas or stream corridors and within waters of the United States or the state. Stream corridors shall be managed with vegetated buffers and crossings shall be properly sited for circulation and designed to minimize erosion and other water quality impacts. Culverts or bridge crossings shall be considered in highly erosive areas. Design measures include but are not limited to:
    - armoring approaches,
    - providing sediment traps or filter areas,
    - hardening the crossing surface,
    - protecting the streambanks from vehicle backwash and overflow during flooding, and
    - modifying super elevation (direction of tilt) such that roads and trails drain away from stream corridors.

- **Water Guideline 2.2:** Implement BMPs in operating the SVRA, consistent with the most current water quality management prescriptions. Monitor water quality regularly and implement adaptive management practices as warranted. Adaptive management practices used may include permanent or seasonal area closures, facility redesign, and hillside restoration.

- **Water Guideline 2.3:** Implement all water quality control measures required under the NPDES Construction General Permit before, during, and after the construction of facilities proposed and envisioned in this General Plan. Develop a storm water pollution prevention plan (SWPPP), including the identification of BMPs that must be implemented to reduce water quality degradation of receiving waters during and after construction activities. Incorporate construction BMPs from the OHV BMP Manual or subsequent applicable document, as appropriate.

- **Water Guideline 2.4:** Incorporate permanent water quality control features, as appropriate, when developing detailed plans for facilities proposed and envisioned in this General Plan. As appropriate to designs, incorporate information from the OHV BMP Manual and the OHMVR *Soil Conservation*

Standard and Guidelines (Soil Standard) (or subsequent amendments), and the Aerojet Feasibility Report for Area 39, which is expected to be completed in 2018 and will contain prescriptive measures designed to help reduce contaminant transport in groundwater. Select water quality control features suitable to site conditions at Prairie City SVRA and consistent with state-of-the art science on water quality management. Avoid direct discharge to receiving water bodies.

- **Water Guideline 2.5:** Improve areas that have experienced substantial erosion from surface water runoff, as determined by annual inspections, to reduce erosion and sedimentation. Implement rehabilitation concepts for these features, as appropriate.
- **Water Guideline 2.6:** Close an area to OHV use if it has been determined that the area cannot feasibly be rehabilitated or reclaimed in accordance with OHMVR Division water quality management standards.
- **Water Guideline 2.7:** Prohibit recreational use of special vehicles and accessories, such as “widowmaker” tires, chained tires, or tracked vehicles, in the SVRA unless special permission is given by the District Superintendent. The District Superintendent has the authority to prohibit use of any vehicle or accessory that is inappropriate in the SVRA.

With adherence to these General Plan goals and guidelines, the impact related to a potential violation of water quality standards or waste discharge requirements would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.8-2 Creation of or Contribution to Erosion and Stormwater Runoff by Temporary Construction Activities, and Potential Effects on Water Quality

The construction of facilities (both structures and trails/access roads) envisioned under the Prairie City SVRA General Plan, while temporary, would require soil-disturbing activities like grading, excavation, and trenching. Most of these foreseen activities would be associated with the creation of new trails and access roads, and to a limited extent, with the construction of new buildings. These construction activities would lead to the potential for soil erosion, stormwater runoff, and transport of sediment or soil chemical contaminants to downstream receiving water bodies. Additionally, pollutants and hazardous materials could be accidentally released to the ground surface through leaks, broken hydraulic lines, fuel spills, and other operations and maintenance practices. Such accidental releases could degrade water quality downstream if sediment-laden stormwater were to flow into tributaries to Coyote Creek and Buffalo Creek and the surrounding watersheds, as is especially possible during heavy precipitation. The soil types present in the planning area belong in hydrologic group D (NRCS 2013), are moderately susceptible to water erosion, and have high runoff potential. Therefore, these soil types further increase the potential for construction to degrade water quality by releasing sediment to downstream sources.

State Parks has prepared various documents that contain goals, standards, guidelines, and BMPs designed to prevent water quality degradation. The documents that pertain specifically to Prairie City SVRA consist of the Prairie City SVRA Resource Element (State Parks 1990), Prairie City SVRA Master Plan (State Parks 1991), OHV BMP Manual (State Parks 2007), and Soil Standard (State Parks 2008). The OHV BMP Manual contains guidelines designed to reduce erosion and control pollutant transport, and would be implemented during construction activities foreseen in the Prairie City SVRA General Plan. BMPs that could be used during construction activities fall into the following broad categories: erosion prevention, surface stabilization, tracking control, runoff control, sediment control, and road and trail drainage control. The following are examples of specific types of construction-related BMPs from the OHV BMP Manual that could be used:

- Erosion control (e.g., blankets, mulches, hydroseeding techniques)
- Scour control (e.g., check dams and armoring as in upland swales and ditches)
- Sediment basins
- Sediment traps
- Silt fences
- Fiber rolls
- Track-walking techniques
- Dust control
- Tracking control
- Waste management

The General Plan also provides goals and guidelines to ensure that future construction activities would have no significant impact on water resources. OM Goal 7 (shown above in the discussion of Impact 3.8-1) would require State Parks to perform preplanning actions with Aerojet so that constructing new facilities would not result in the release of chemical contaminants into stormwater flows.

The guidelines associated with Water Goals 1 and 2 (shown above in the discussion of Impact 3.8-1) would require protection of water features through preproject planning and coordination with the resource agencies. One such preplanning effort is Water Guideline 2.3, which calls for the development of a SWPPP for projects that would disturb more than 1 acre of soil as required under the NPDES Construction General Permit. The SWPPP would include BMPs to reduce water quality degradation of receiving waters by construction activities. As part of the construction contractor's SWPPP certification, crews would also have completed environmental training and would be competent to respond to rain events and accidental releases of pollutants/hazardous materials.

In addition, Aerojet is preparing a feasibility study for Area 39, which is anticipated to contain prescriptive measures designed to help reduce contaminant transport in groundwater. State Parks plans to coordinate with Aerojet in the future to implement prescriptive measures from the feasibility study as they would apply to the SVRA.

With adherence to these General Plan guidelines and the current State Parks guiding documents, water quality impacts from short-term construction-related erosion and stormwater runoff would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.8-3 Contribution to Transport of Sediment and Other Pollutants from Operations, Leading to Erosion and Stormwater Runoff

During implementation of the General Plan, OHV use and SVRA operations would result in soil-disturbing activities, which have the potential to cause erosion and contribute to the transport of sediment and other pollutants. The development of facilities (including OHV trails and access roads) would increase soil compaction from OHV use, remove vegetative cover for new facilities, and create additional impervious surfaces, resulting in increased surface water runoff in the planning area. The increased runoff would result in additional erosion where unprotected soil surfaces are exposed to regular or continual disturbance (e.g., OHV use). However, the magnitude of erosion and transport of pollutants to receiving waters would depend primarily on the total area of unprotected soil surfaces disturbed, soil conditions, rainfall during storm events, and frequency and amount of disturbance in a given area.

The greatest contribution to erosion and sediment/pollutant discharge occurs in areas with little or no vegetative cover. As a result of development and OHV ridership, approximately 19 percent of the land surface in the planning area features little to no vegetative cover (AECOM 2014). These areas can contribute substantially to erosion and sediment mobilization. Bare soils are subject to greater erosive forces, including increased raindrop impacts, runoff volumes, and flow velocities, than would normally occur if vegetation were present and soils were not compacted.

State Parks manages discharge of stormwater runoff to Coyote Creek through several sediment basins, although other stormwater BMPs are used as needed. These sediment basins are located south of the Prairie City National Motocross Track. The basins were developed to capture sediment coming off the track and other exposed portions of the planning area. However, the sediment loads below the track warrant additional water quality control improvements for average and above-average storm events. The General Plan proposes to remedy this problem by using the Barton Ranch acquisition area as a stormwater management use area. The stormwater management use area would serve as a buffer, with up to 10 acres of the property used for water quality improvement facilities and designed to accommodate a 100-year storm event. An additional 5 acres of undisturbed land may be used as a spray field for collected stormwater. To treat runoff from the existing SVRA, State Parks proposes to install a sediment basin and/or biofiltration swales (bioswale) or other stormwater control features. The proposed basin and/or bioswale system would be designed to remove sediment and improve water quality so that discharges do not contribute to degradation of water quality in downstream water bodies.

In addition to creating the stormwater management use area, State Parks plans to manage the discharge of stormwater to Coyote Creek by continuing to implement the current OHV BMP Manual (State Parks 2007) and by implementing the goals and guidelines detailed in Chapter 4 of the General Plan. The OHV BMP Manual has the following specific BMPs that would help protect water quality:

- Erosion control (e.g., blankets, mulches, hydroseeding techniques)
- Scour control (e.g., check dams and armoring as in upland swales and ditches)
- Sediment basins
- Sediment traps
- Silt fences
- Fiber rolls
- Track-walking techniques
- Tracking control
- Waste management

Furthermore, the General Plan goals and guidelines were developed to reduce or eliminate pollutant discharges from the planning area (according to the “maximum extent practicable” performance standard specified in Section 402[p] of the Clean Water Act). The goals and guidelines provide descriptive BMPs that are being used or proposed for stormwater management in the planning area. These BMPs fall under six program areas (also referred to as “minimum control measures”), plus a seventh program area related specifically to OHV management. The seven program areas and the associated General Plan goals are as follows:

- Public Education (IE Goal 3)
- Public Participation (IE Goal 3)
- Illicit Discharge Detection and Elimination (Water Goal 2)
- Construction Site Stormwater Runoff Control (NRM Goal 1 and Water Goals 1 and 2)
- Postconstruction Stormwater Management (Water Goal 2)
- Pollution Prevention/Good Housekeeping (IE Goal 3, NRM Goal 1, and Water Goal 2)
- OHV Trails and Facilities Management (IE Goal 3, NRM Goal 1, and Water Goal 2)

The General Plan goals and guidelines are designed to reduce the erosion potential of proposed facilities and operations, and the potential project contribution to the transport of sediment and other pollutants. First, the guidelines under IE Goal 3 (shown above in the discussion of Impact 3.8-1) would educate members of the public using Prairie City SVRA about the impacts that OHV riding can have on water quality and would highlight ways that they can minimize their impact. By educating the public, State Parks aims to keep OHV riders within appropriate and approved areas to reduce the acreage of denuded areas and severe soil compaction. NRM Goal 1 (shown below) would protect water quality by avoiding siting new facilities in areas of high resource value. The guidelines under Water Goal 2 (shown above in the discussion of Impact 3.8-1) call for management strategies like stream corridor vegetative buffers, armoring, sediment traps and filters, topographic contouring, culverts and bride crossings, closures, and construction of facilities with permanent water quality control features. State Parks would monitor water quality to assess the effectiveness of these management strategies in reducing the impact of any new facility operations.

NRM Goal 1: Manage the SVRA for a balance of uses that allow protection and stewardship of natural resources while maintaining a quality OHV recreational experience.

- **NRM Guideline 1.1:** Locate visitor-serving facilities in prior disturbed areas or in areas of relatively low resource value to minimize disturbance to higher value habitat areas.
- **NRM Guideline 1.2:** Conduct site-specific surveys/mapping of sensitive biological resources (such as special-status species and sensitive habitats) before planning new visitor-serving or operations facilities, or expanding or relocating existing ones. Consider the location and extent of these resources during the planning and design process. Design the route and trail system in the northern portion of the planning area to avoid vernal pools. Avoid affecting sensitive biological resources during planning, design, and construction. Utilize fencing and other methods to exclude public access in the vernal pool management use area and other environmentally sensitive areas, as necessary. Conduct worker environmental awareness training for construction personnel before construction.
- **NRM Guideline 1.3:** In the event that disturbing a sensitive biological resource is unavoidable, minimize the disturbance to the minimum area necessary to achieve the project purpose. Identify and implement measures to offset impacts in consultation with a qualified biologist and the appropriate resource agencies (e.g., CDFW, U.S. Fish and Wildlife Service [USFWS], U.S. Army Corps of Engineers [USACE], and the Central Valley RWQCB), depending on the listing or protection status of the resource. Measures may include seasonal closures to avoid sensitive resources, on-site habitat restoration and/or creation, or acquisition of off-site mitigation credits.
- **NRM Guideline 1.4:** Continue to implement the OHMVR Division’s Habitat Monitoring System (HMS) consistent with State Park resource management directives, and with the specific biological provisions that outline management programs for working with natural processes of vegetation succession, controlling the spread of noxious and invasive weeds, and protecting natural wildlife habitat. Use the HMS as a tool to aid in the implementation of park-specific monitoring and adaptive management, with a focus on trends in percent habitat cover, focal species distribution and abundance, and comparisons between riding and nonriding areas. When completed, incorporate use of the HMS data management system to accumulate, standardize, and analyze records of plants, animals, and habitats in the planning area and guide adaptive management.
- **NRM Guideline 1.5:** Focus new trail development in areas of relatively low habitat value. Route new trails around the edges of high-quality habitat and include buffers to avoid habitat fragmentation. Determine the size of the buffers based on site-specific conditions and the habitat

requirements of the species that may use the habitat and buffers, in communication with appropriate trustee and responsible agencies, such as CDFW, USACE, and USFWS. Where high-quality habitats being avoided are close to each other, size the buffers to provide connectivity between the habitats.

With adherence to these General Plan goals and guidelines and the OHV BMP Manual, the operational impact on surface water quality caused by erosion and transport of sediment and other pollutants would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.8-4 Potential for Substantial Alteration of Drainage Patterns, Resulting in Substantial Erosion or Flooding from Increased Surface Water Runoff

The new and relocated potential facilities and the five use areas envisioned in the General Plan could result in changes to drainage patterns and increases in impervious surface area that would increase the volume and peak-flow rate of the runoff. If left unchecked, this runoff could result in increased erosion and/or flooding.

The General Plan envisions construction of only a limited number of facilities with impermeable surfaces (i.e., new buildings and concrete pads). The primary new facilities in the planning area would be those that would be relocated to a new location in the SVRA (the ranger station, kart track, dirt oval track, and district office), facilities associated with the route and trail system use area on the Yost property, and the stormwater management use area in the Barton Ranch acquisition area. As described in DEIR Table 2-1, OHV recreation would be allowed only on identified routes and trails in the route and trail system use area (Figure 2-5). Route and trail locations and specifications will be determined during a subsequent project-specific planning effort. The southwestern portion of the SVRA would be a distributed OHV recreation use area and would continue to allow OHV recreation that would not be confined to identified routes and trails.

For new creek crossings, State Parks would either employ culverts or harden the creek bottom surface at the crossing (e.g., using articulated concrete block) to prevent erosion and avoid obstructing streamflows. The installation of new roads, trails, and stream crossings would be controlled by the design, construction, and monitoring criteria specified in the OHV BMP Manual (State Parks 2007), the OHMVR Soil Standard (State Parks 2008), and the applicable goals and guidelines in the General Plan.

The General Plan both incorporates existing guiding documents like the OHV BMP Manual and defines goals and guidelines to reduce the potential for erosion and flooding from surface water runoff. Specifically, the guidelines under the General Plan's Water Goal 2 (shown above in the discussion of Impact 3.8-1) call on State Parks to implement stormwater management strategies, identify specific BMPs, and incorporate the OHV BMP Manual's recommended practices during preplanning for any future facility. In addition, adherence to this General Plan goal would limit the construction of new roads, routes, and trails so that sensitive natural areas would be avoided.

With adherence to these General Plan guidelines, there would be no substantial alteration of drainage patterns resulting in substantial erosion or flooding from increased surface water runoff. This impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.8-5 Potential for Substantial Interference with Groundwater Recharge

As discussed in detail in Section 3.10, “Public Services and Utilities,” an on-site well located in the southwestern portion of the SVRA near the maintenance office, approximately 286 feet deep, supplies water to Prairie City SVRA. Implementing the General Plan would generate water demand for new facilities—an overnight camping area, a multiuse special events area, enhanced spectator facilities, a visitor center, and distributed OHV recreation facilities—and result in relocation of the district offices and ranger station and continued use of existing facilities. Water usage at Prairie City SVRA has fluctuated in the last several years; however, in 2014, SVRA water usage was reduced by 37 percent to a total of approximately 14.5 million gallons (approximately 44.5 acre-feet) per year. Attendance at the SVRA is anticipated to reach 168,481 visitors by 2030, a decrease of approximately 12.9 percent compared to the fiscal year 2004 peak of 193,330 visitors. Approximately 83.4 million gallons (approximately 255 acre-feet) per year of water are available from the on-site well. Because the projected water use during the General Plan’s planning horizon (i.e., 2030) would be less than the peak 2004 water demands, surplus supplies of potable water from the on-site well would be available to meet the demands of the new development envisioned in the General Plan.

Implementing the General Plan would not substantially increase the amount of impervious surfaces in the planning area because only a limited number of new buildings and concrete pads would be constructed, and in a number of cases, concrete foundations and pads would be removed after the building relocations. Most new facilities would be associated with roads and trails. As described under Impact 3.8-1, planned improvements would increase the effectiveness of the existing sediment basin systems by increasing the stormwater holding capacity that allows infiltration to groundwater. In addition, vegetated buffers are proposed along stream corridors, allowing for continued infiltration in those areas. The General Plan would modify the existing SVRA to reduce the acreage of off-trail riding areas, and Water Guideline 1.1 (shown above in the discussion of Impact 3.8-1) would limit new road and trail construction to avoid sensitive natural areas. Also, although OHV use would result in compaction of the roads and trails, the trails would not be hard surfaced, and some infiltration to groundwater would still occur. Most of the planning area’s soils are classified as hydrologic group D, which indicates high runoff potential and a very slow water infiltration rate (NRCS 2013). Most groundwater recharge in the planning area occurs through the piles of dredger mine tailings and within the on-site watercourses and drainage swales. Water Guideline 2.1 (shown above in the discussion of Impact 3.8-1) requires that new facilities not be located within or adjacent to stream corridors. As a result, facility development would not affect the areas within the planning area where the greatest amount of recharge occurs.

Water Goal 3 and the associated guidelines (shown below) direct the SVRA to be managed to conserve water resources.

Water Goal 3: Manage the SVRA to conserve water resources while maintaining a quality OHV recreational experience.

- **Water Guideline 3.1:** Use recycled water, as available, for dust control and irrigation as allowed by water quality and health regulations and as available at the site or nearby.
- **Water Guideline 3.2:** Manage facilities to accommodate periods of drought or low water supply. Minimize the use of water for dust control unless recycled or grey water, and continue to use alternative dust suppression methods, as necessary.
- **Water Guideline 3.3:** Implement water conservation measures that will reduce water use by 10 percent by 2015 and 20 percent by 2020 as measured against a 2010 baseline. These measures are in accordance with Executive Order B-18-12 issued by Governor Edmund G. Brown Jr. on April 25, 2012, with the Proclamation of a State of Emergency signed on January 17, 2014. The Proclamations of Continued State of Emergency signed on April 25, 2014, and December 22, 2014, and Executive Order B-29-15 issued on April 1, 2015, impose restrictions to achieve a 25 percent reduction in potable water usage through February 28, 2016.

With adherence to this General Plan goal and the associated guidelines, implementation of the General Plan would result in a water demand that is well within the sustainable yield of the existing groundwater basin and the capacity of the existing on-site well. Because a substantial amount of new impervious surfaces would not be created, the General Plan would not result in substantial interference with groundwater recharge. Therefore, the impact related to substantial interference with groundwater recharge would be **less than significant**.

Mitigation Measure: No mitigation is required.

IMPACT 3.8-6 Potential to Create Hazards to People and Structures from Flooding

New facilities, primarily trails and access roads, would be constructed in the planning area under the General Plan, and there are no plans to develop housing units within the SVRA. The nearest Federal Emergency Management Agency–designated 100-year floodplain is located near the American and Cosumnes Rivers, several miles away. Although the planning area is not located within the 100-year floodplain, it is subject to minor flooding. Specifically, the creek bed channels in the planning area are shallow and undefined, and the General Plan foresees that during a 25-year or greater storm event, minor flooding may occur along the creek banks and associated waterways at lower elevations (primarily in the south).

The few structures slated for construction under the General Plan may be susceptible to flooding if they are placed adjacent to creeks. The General Plan provides Water Goal 2 (shown above in the discussion of Impact 3.8-1) and particularly Water Guideline 2.1 to prevent impacts on structures from occurring. Water Guideline 2.1 calls for State Parks to avoid siting new structures near stream corridors; therefore, adherence to this guideline would avoid any flooding impact on these facilities.

Therefore, with adherence to preplanning efforts detailed in these General Plan guidelines, flooding impacts would be **less than significant**.

Mitigation Measure: No mitigation is required.

3.8.5 SUMMARY OF SIGNIFICANT IMPACTS

The General Plan includes goals and guidelines that would be implemented during project planning and construction in the planning area to avoid or minimize potential adverse effects related to hydrology and water quality. With adherence to these goals and guidelines, impacts related to hydrology and water quality would be less than significant.

3.8.6 MITIGATION MEASURES

Impacts related to hydrology and water quality would be less than significant with implementation of the policies contained in the General Plan. Therefore, no mitigation measures are required.

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3.9 NOISE

This section describes ambient noise conditions in the planning area; discusses the federal, state, and local regulatory framework; and evaluates potential noise-related impacts from implementation of the Prairie City State Vehicular Recreation Area (SVRA) General Plan.

3.9.1 EXISTING SETTING

Applicable acoustical terminology and existing noise-sensitive land uses are described in Section 2.3.5 of the General Plan.[1] Three caretaker housing units owned by the Off-Highway Motor Vehicle Recreation (OHMVR) Division of State Parks are located approximately 1,000 feet southeast of the Aerojet Road/White Rock Road intersection, and seven offices are located in the western portion of Prairie City SVRA. There are no noise-sensitive receptors in the planning area because on-site uses are either caretaker housing or office uses. The staff members residing in the caretaker housing units typically work at the SVRA during the day. Office uses are not considered noise sensitive because the intended use of an office land use category is indoors and a receptor would be exposed to these noise levels only when outside the office building. The nearest noise-sensitive land uses are residential land uses located approximately 2 miles north and southwest of the SVRA.

An overnight camping area is proposed to be located in and around the existing staging area at the center of the SVRA (Figure 2-5); however, campers would stay in the planning area for only a limited amount of time. The proposed campsites are not considered noise-sensitive receptors because campers are not long-term residents by definition, would use the resource with an understanding of the type of activities to which the campsites would be exposed, and would not be affected by these activities. The State Parks on-site caretaker housing units are not considered noise sensitive because they meet the criteria for a compatible use within all community noise equivalent level (CNEL)[2] ranges, as defined by the *Sacramento County General Plan* Noise Element (Sacramento County Community Planning & Development Department 2011:Noise Element p. 21):

> Caretaker residences are a compatible use within all CNEL ranges, provided that they are ancillary to the primary use of a property, intended for the purpose of property protection or maintenance, and subject to the condition that all residential units be designed to limit intruding noise such that interior levels do not exceed 45 CNEL, with windows closed, in any habitable room.

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[1] Noise-sensitive land uses are those uses where quiet is essential to the purpose of the land use. Noise-sensitive land uses include residences and buildings where people normally sleep (including hospitals, hotels), as well as uses where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material, such as schools, libraries, theaters, and houses of worship (City of Sacramento 2014:4.8-5).

[2] The CNEL is a 24-hour noise level descriptor that penalizes evening and nighttime hours to more appropriately evaluate human response to noise.

Appendix C of this draft environmental impact report (DEIR) provides additional information about environmental noise. General Plan Section 2.3.5 also describes an ambient-noise-level measurement survey conducted by AECOM on three separate time periods to quantify the existing acoustical environments in the planning area. These time periods were Friday, April 5 through Monday, April 8, 2013; Wednesday, May 15 through Tuesday, May 21, 2013; and Friday, September 5 through Monday, September 8, 2014. Measurements of ambient sound levels were conducted at four locations, as described in Section 2.3.5 of the General Plan. Figure 3.9-1 (identical to Figure 2-19 in the General Plan) illustrates the four measurement locations. Table 3.9-1 summarizes the results of the noise surveys.

EXISTING TRAFFIC NOISE

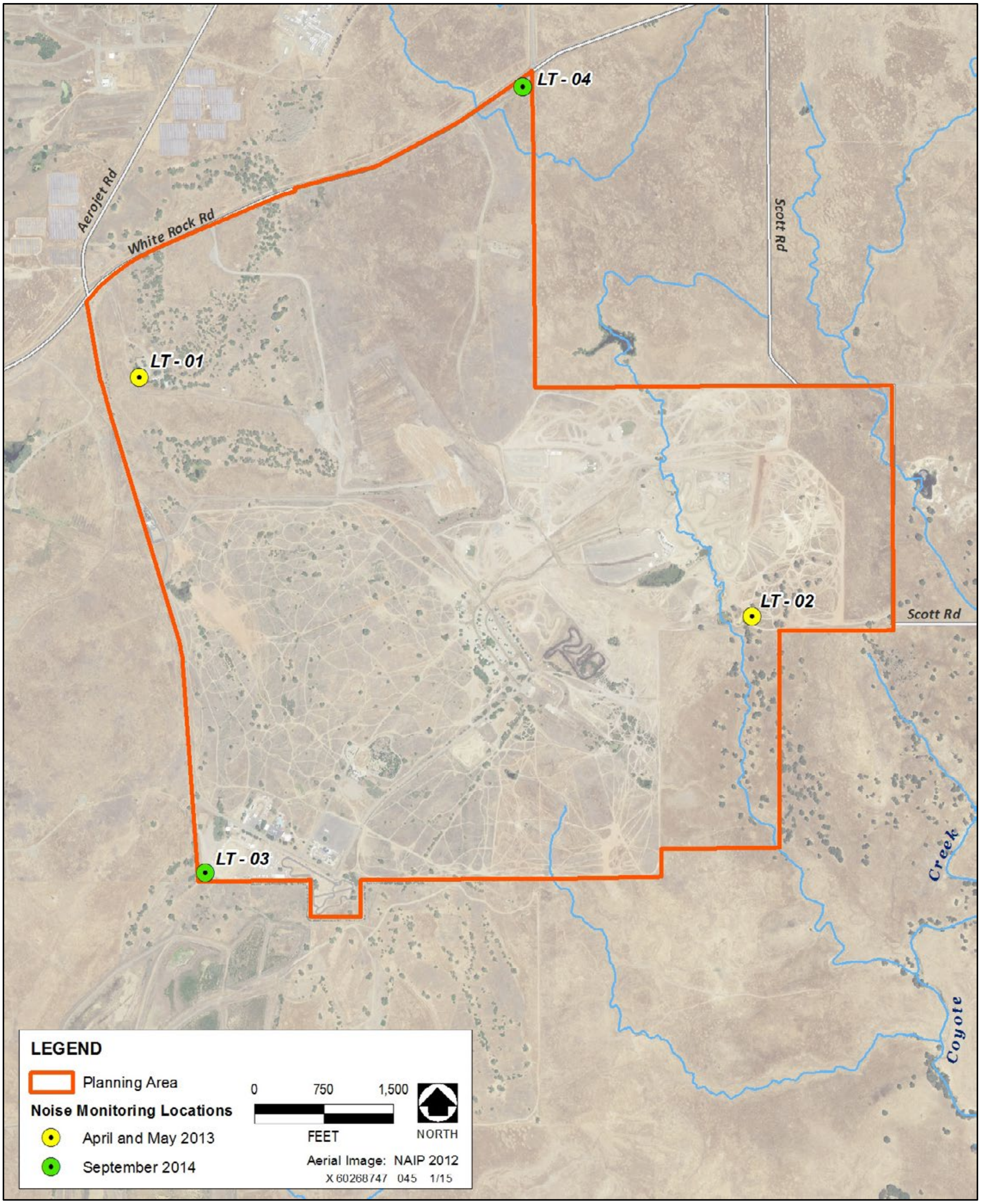
Existing noise levels from vehicle traffic in the vicinity of the planning area, including regional roadways, were modeled using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic count data provided by the Prairie City SVRA General Plan traffic consultant (KD Anderson & Associates 2013; Appendix C). The FHWA model is based on California Vehicle Noise (CALVENO) reference noise factors for automobiles, medium trucks, and heavy trucks, with vehicle volume, speed, roadway configuration, distance to the receptor, and ground attenuation factors considered.

Table 3.9-2 summarizes the modeled existing (2013) traffic noise levels, shows noise levels at 100 feet from the centerline of each major roadway in the vicinity of the planning area, and lists distances from the roadway centerlines to the 60-A-weighted decibel (dBA), 65-dBA, and 70-dBA day-night average noise level (L_{dn}) traffic noise contours. As shown in Table 3.9-2, the location of the 60-dBA L_{dn} contour ranges from 7 feet to 208 feet from the centerline of the modeled roadways. The extent to which existing off-site land uses in the vicinity of the planning area are affected by existing traffic noise depends on their proximity to the roadways and their individual sensitivity to noise. Figure 3.9-2 shows the existing modeled traffic noise contours.

3.9.2 REGULATORY SETTING

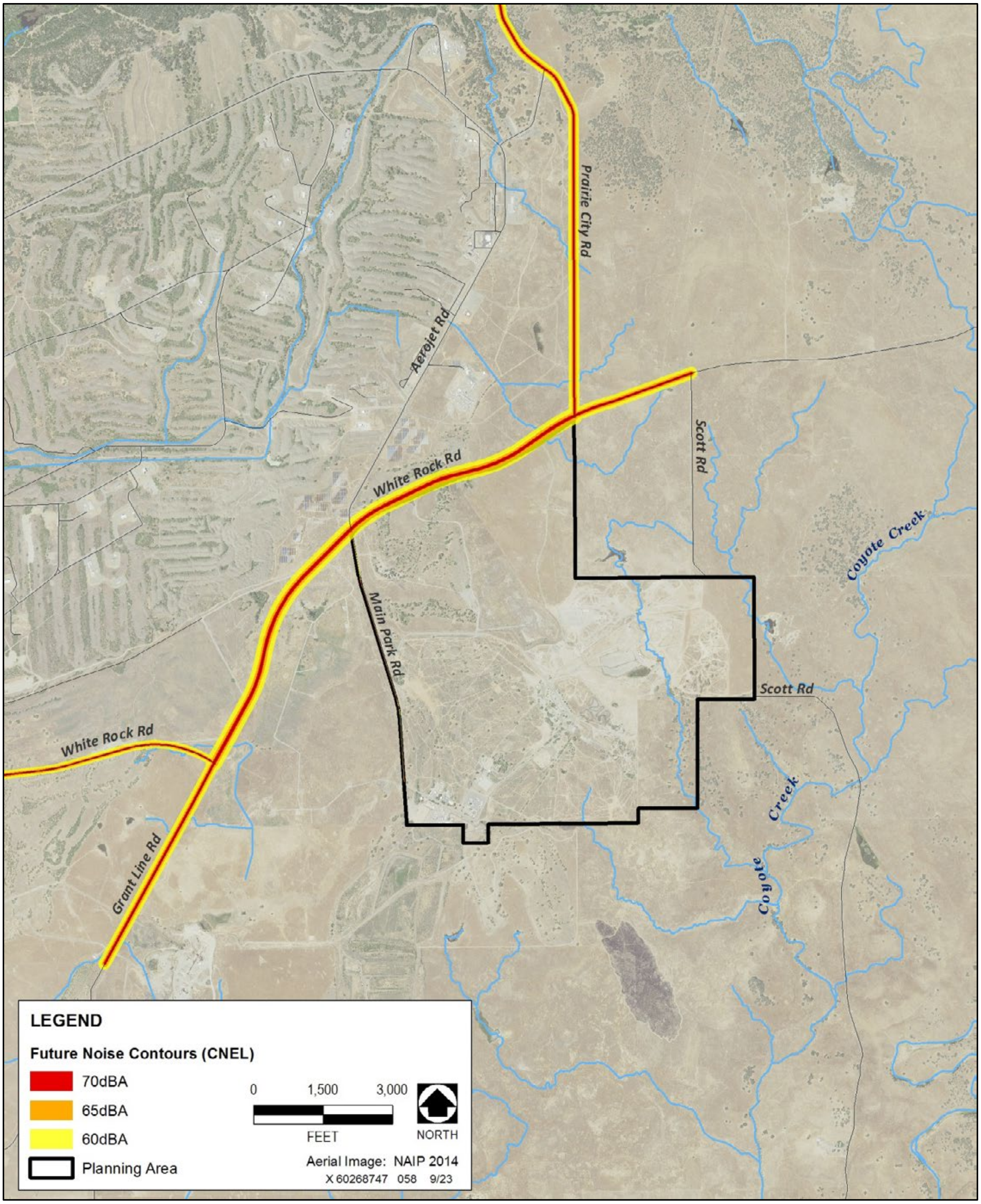
Section 2.7.3.7, “Noise Regulations,” of the General Plan describes the federal, state, and regional and local regulations applicable to noise in the planning area. In addition, the federal recommendations described in this section were considered in this analysis.

The discussion below is based on recommendations made in August 1992 by the Federal Interagency Committee on Noise (FICON) to provide guidance on assessing increases and decreases in noise levels relative to the ambient noise condition resulting from aircraft operations. The recommendations are based on studies that relate aircraft noise levels to the percentage of persons



Source: Data compiled by AECOM in 2014

Figure 3.9-1. Noise Measurement Locations



Source: AECOM 2015

Figure 3.9-2. Existing Modeled Traffic Noise Contours

Table 3.9-1. Summary of Noise Measurements

Noise-Level Measurement Location	Time of the Week	Date and Time		Hourly L_{eq}, dBA	
		From	To	Day 8 a.m.–6 p.m.	Night 7 p.m.–7 a.m.
Typical Conditions (first round of measurements, April 5–8, 2013)					
Location 1: Northwest section of Prairie City SVRA, south of White Rock Road, behind SVRA caretaker properties.	Weekend	4:00 p.m. on Friday, April 5, 2013	3:00 p.m. on Saturday, April 6, 2013	59	41
	Weekend	4:00 p.m. on Saturday, April 6, 2013	3:00 p.m. on Sunday, April 7, 2013	60	40
	Weekday	4:00 p.m. on Sunday, April 7, 2013	3:00 p.m. on Monday, April 8, 2013	58	44
Location 2: Southeastern boundary of Prairie City SVRA, west of Scott Road.	Weekend	5:00 p.m. on Friday, April 5, 2013	4:00 p.m. on Saturday, April 6, 2013	49	47
	Weekend	5:00 p.m. on Saturday, April 6, 2013	4:00 p.m. on Sunday, April 7, 2013	52	48
	Weekday	5:00 p.m. on Sunday, April 7, 2013	4:00 p.m. on Monday, April 8, 2013	67	56
Hangtown Motocross Classic (second round of measurements, May 15–21, 2013)					
Location 1: Northwest section of Prairie City SVRA, south of White Rock Road, behind SVRA caretaker properties.	Weekday	3:00 p.m. on Wednesday, May 15, 2013	2:00 p.m. on Thursday, May 16, 2013	65	61
	Weekday	3:00 p.m. on Thursday, May 16, 2013	2:00 p.m. on Friday, May 17, 2013	67	59
	Weekend	3:00 p.m. on Friday, May 17, 2013	2:00 p.m. on Saturday, May 18, 2013	69	42
	Weekend	3:00 p.m. on Saturday, May 18, 2013	2:00 p.m. on Sunday, May 19, 2013	63	40
	Weekday	3:00 p.m. on Sunday, May 19, 2013	2:00 p.m. on Monday, May 20, 2013	47	39
	Weekday	3:00 p.m. on Monday, May 20, 2013	2:00 p.m. on Tuesday, May 21, 2013	45	43
Location 2: Southeastern boundary of Prairie City SVRA, west of Scott Road.	Weekday	3:00 p.m. on Wednesday, May 15, 2013	2:00 p.m. on Thursday, May 16, 2013	64	50
	Weekday	3:00 p.m. on Thursday, May 16, 2013	2:00 p.m. on Friday, May 17, 2013	49	48
	Weekend	3:00 p.m. on Friday, May 17, 2013	2:00 p.m. on Saturday, May 18, 2013	49	48
	Weekend	3:00 p.m. on Saturday, May 18, 2013	2:00 p.m. on Sunday, May 19, 2013	51	49
	Weekday	3:00 p.m. on Sunday, May 19, 2013	2:00 p.m. on Monday, May 20, 2013	48	50
	Weekday	3:00 p.m. on Monday, May 20, 2013	2:00 p.m. on Tuesday, May 21, 2013	48	50
4x4 Track during the NorCal Rock Racing (third round of measurements, September 5–8, 2014)					
Location 3: Southwestern corner of Prairie City SVRA.	Weekend	4:14 p.m. on Friday, September 5, 2014	3:14 p.m. on Saturday, September 6, 2014	57	47
	Weekend	4:14 p.m. on Saturday, September 6, 2014	3:14 p.m. on Sunday, September 7, 2014	49	37
	Weekday	4:14 p.m. on Sunday, September 7, 2014	3:14 p.m. on Monday, September 8, 2014	40	37
Location 4: Northeastern corner of Prairie City SVRA by White Rock Road/Prairie City Road intersection.	Weekend	4:35 p.m. on Friday, September 5, 2014	3:35 p.m. on Saturday, September 6, 2014	60	55
	Weekend	4:35 p.m. on Saturday, September 6, 2014	3:35 p.m. on Sunday, September 7, 2014	59	57
	Weekday	4:35 p.m. on Sunday, September 7, 2014	3:35 p.m. on Monday, September 8, 2014	58	55

Notes: dBA = A-weighted decibels; L_{eq} = equivalent sound level (average of the sound energy occurring over a specified time period); L_{max} = maximum sound level (highest instantaneous sound level measured during a specified period); SVRA = State Vehicular Recreation Area

Source: Data compiled by AECOM in 2013 and 2014

Table 3.9-2. Summary of Existing (2013) Traffic Noise Levels Modeled in the Vicinity of the Planning Area

Roadway	Segment	Existing—Weekday				Existing—Saturday Noon				Existing—Saturday Special			
		Noise Level at 100 Feet	Contours			Noise Level at 100 Feet	Contours			Noise Level at 100 Feet	Contours		
			70 dBA	65 dBA	60 dBA		70 dBA	65 dBA	60 dBA		70 dBA	65 dBA	60 dBA
Prairie City Road	From White Rock Road to north of White Rock Road	61	25	55	118	57	14	30	64	65	44	94	202
White Rock Road	From Prairie City Road to east of Prairie City Road	62	29	63	136	58	17	36	78	61	24	52	113
White Rock Road	From Prairie City Road to special event access	64	38	82	177	60	21	44	95	65	44	94	203
White Rock Road	From special event access to Prairie City Road	64	38	82	176	60	21	45	96	64	41	88	190
White Rock Road	From special event access to main park access	64	38	82	176	60	21	45	96	62	29	62	134
Main park access	From White Rock Road to south of White Rock Road	43	1	3	7	51	6	12	26	60	23	49	105
White Rock Road	From main park access to special event access	64	38	81	175	60	22	48	102	61	26	57	122
White Rock Road	From main park access to west of main park access	64	38	81	175	60	19	42	90	64	42	90	194
Grant Line Road	From White Rock Road to south of White Rock Road	62	29	62	133	59	17	37	80	61	26	57	123
White Rock Road	From Grant Line Road to north of Grant Line Road	64	37	80	171	60	19	40	86	64	41	88	190
White Rock Road	From Grant Line Road to west of Grant Line Road	59	19	41	89	51	6	12	26	63	31	68	146

Notes: dBA = A-weighted decibels; EB = eastbound; WB = westbound; L_{dn} = day-night average noise level.
Source: Modeled by AECOM in 2014

highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, they are commonly applied to all sources of noise and described in terms of cumulative noise exposure metrics such as the L_{dn}. Specifically, they provide a good correlation to transportation-related noise sources.

An increase in traffic noise levels becomes more significant as the ambient noise level increases. For instance, a significant increase in traffic noise levels is expected to be 1.5 dBA when the no-project traffic noise level exceeds 65 dBA L_{dn}. However, a significant increase in the traffic noise level is expected to be 5 dBA when the no-project traffic noise level is less than 60 dBA L_{dn}. In other words, as ambient noise levels increase, a smaller increase in noise resulting from the project is sufficient to cause significant annoyance.

Using a single value to evaluate an impact of a noise-level increase would fail to account for the existing ambient noise levels to which the receivers are accustomed. Studies assessing the percentage of people highly annoyed by changes in noise levels indicate that when ambient noise levels are low, a greater change is needed to cause a response. As ambient noise levels increase, a lesser change in noise levels is required to elicit substantial annoyance.

3.9.3 THRESHOLDS OF SIGNIFICANCE

CEQA GUIDELINES

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact related to noise if it would:

- expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- expose persons to or generate excessive groundborne vibration or groundborne noise levels;
- create a substantial permanent increase in noise exposure relative to ambient noise levels in the project vicinity;
- create a substantial temporary or periodic increase in noise exposure relative to ambient noise levels in the project vicinity; or
- expose persons residing or working in the project area to excessive aircraft noise levels (for a project located within an airport land use plan or within 2 miles of a public, public-use, or private airport/ airstrip).

These significance criteria are applied broadly. Under CEQA, the required analysis extends only to whether the project will cause impacts on the existing environment. In some community noise assessments, impacts may be considered less than significant if increases in community noise levels associated with a project's implementation would not exceed 3 dBA at noise-sensitive locations in that project's vicinity.

In practice, more specific professional standards have been implemented. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local or regional planning criteria or ordinances or substantially increase noise levels at noise-sensitive land uses. For Prairie City SVRA, the significance of anticipated noise effects is based on a comparison between predicted noise levels and noise criteria defined by Sacramento County, the California Department of Transportation, and the Federal Transit Administration (FTA).

Because Prairie City SVRA is owned and operated by the State of California, it is not subject to local policies or ordinances. Nonetheless, the OHMVR Division intends to develop the SVRA in a manner compatible with the surrounding community. Therefore, local policies and ordinances were considered as part of this environmental evaluation, and these policies were used as thresholds of significance in this analysis.

LOCAL NOISE STANDARDS

Noise standards from various local jurisdictions are listed below.

- Sacramento County:
- The Noise Element of the general plan for Sacramento County indicates that in this county, transportation noise impacts are considered significant if existing noise-sensitive land uses would be exposed to exterior noise levels in excess of 65 dBA Ldn or interior noise levels in excess of 45 dBA Ldn.
- The municipal code for Sacramento County indicates that in this county, nontransportation noise impacts are considered significant if existing noise-sensitive land uses would be exposed to daytime (7 a.m.–10 p.m.) noise levels in excess of 55 dBA L50 (i.e., the noise level exceeded 50 percent of the time) or nighttime (10 p.m.–7 a.m.) noise levels in excess of 50 dBA L50.
- Folsom:
- The Noise Element of the general plan for the City of Folsom indicates that in this city, transportation noise impacts are considered significant if existing noise-sensitive land uses would be exposed to exterior noise levels in excess of 60 dBA Ldn or interior noise levels in excess of 45 dBA Ldn.
- The municipal code for the City of Folsom indicates that in this city, nontransportation noise impacts are considered significant if existing noise-sensitive land uses would be exposed to daytime (7 a.m.–

10 p.m.) noise levels in excess of 50 dBA L50 or nighttime (10 p.m.–7 a.m.) noise levels in excess of 45 dBA L50.

- Rancho Cordova:
- The Noise Element of the general plan for the City of Rancho Cordova indicates that in this city, transportation noise impacts are considered significant if existing noise-sensitive land uses would be exposed to exterior noise levels in excess of 55 dBA Ldn or interior noise levels in excess of 45 dBA Ldn.
- The municipal code for the City of Rancho Cordova indicates that in this city, nontransportation noise impacts are considered significant if existing noise-sensitive land uses would be exposed to daytime (7 a.m.–10 p.m.) noise levels in excess of 55 dBA Leq (i.e., equivalent sound level, the average of the sound energy occurring over a specified time period) or nighttime (10 p.m.–7 a.m.) noise levels in excess of 45 dBA Leq.

Based on the above standards, a significant project-related impact with respect to ambient conditions would occur if the project were to result in the following traffic noise level increases:

- +5 decibels (dB) relative to ambient (no project) traffic noise levels less than 60 dBA L_{dn},
- +3 dB relative to ambient levels of 60–65 dBA L_{dn}, or

These criteria are consistent with the FICON criteria established in 1992 in the *Federal Agency Review of Selected Airport Noise Analysis Issues* (FICON 1992:3-15 through 3-17).

PRAIRIE CITY SVRA GENERAL PLAN NOISE STANDARDS

According to the OHMVR Division, a significant noise impact of the Prairie City SVRA General Plan would occur if project-related exterior noise levels from operation and maintenance (nontransportation noise sources) would exceed 55 dBA L_{eq} during the day or 45 dBA L_{eq} at night at the property line of the nearest off-site noise-sensitive receptors in adjacent future planning areas. The *Folsom Plan Area Specific Plan* (FPASP) area to the north and east, the East Planning Area to the south and west, and the Grant Line West Planning Area to the west propose future noise-sensitive residential land uses that may be exposed to future nontransportation noise sources associated with implementation of the General Plan. The Aerojet Planning Area to the north would not introduce new noise-sensitive land uses; industrial land uses are proposed for this area.

According to the OHMVR Division, a significant noise impact of the Prairie City SVRA General Plan would occur if project-related increases in traffic volume (transportation noise sources) would result in a +3 dBA L_{dn} increase relative to existing and future traffic noise levels without project-related traffic increases.

3.9.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

Noise from recreational activities associated with off-highway vehicle (OHV) use with implementation of the Prairie City SVRA General Plan was estimated based on noise level restrictions provided in the California Vehicle Code. According to Vehicle Code Section 38370(h)(1):

> Noise emissions of competition off-highway vehicles manufactured on or after January 1, 1998, shall be limited to not more than 96 dBA, and if manufactured prior to January 1, 1998, to not more than 101 dBA, 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 dBA if manufactured on or after January 1, 1986, and not more than 101 dBA 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.

For the purposes of this analysis, OHVs operating at Prairie City SVRA, including special events, are assumed to generate noise levels not exceeding 96 dBA at a distance of 20 inches.

To assess potential short-term construction noise impacts associated with implementation of the Prairie City SVRA General Plan, off- and on-site receptors and their relative exposure to noise were identified. The noise levels from activities that could be heard at these sensitive receptors were predicted using the FTA document *Transit Noise and Vibration Impact Assessment* (FTA 2006:Chapter 12).

Regarding increases in traffic noise during project operation, AECOM created models of noise levels at affected roadway segments (e.g., White Rock Road and Prairie City Road) using the FHWA Highway Traffic Noise Prediction Model (RD-77-108) (FHWA 1978) and traffic data (e.g., average daily traffic volumes) from traffic count data provided by KD Anderson & Associates (Becker, pers. comm., 2014). This model is based on the CALVENO reference noise emission factors for automobiles, medium trucks, and heavy trucks, and it accounts for vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. The model does not assume that the noise would be shielded by anything natural or human-made (e.g., vegetation, berms, walls, buildings); therefore, it is a conservative estimate. Increases in traffic noise levels attributable to implementation of the General Plan were calculated by comparing the predicted noise levels at 100 feet from the centerline of the road with and without Prairie City SVRA–generated traffic under existing and cumulative conditions.

All noise measurements were taken using Larson-Davis Laboratories (LDL) Model 820 and 824 precision integrating sound level meters. The meters were calibrated before the measurements using an LDL Model CA200 acoustical calibrator. The measurement equipment used meets the applicable criteria established by the American National Standards Institute (ANSI) for Class 1 sound level meters

(ANSI S1.4). Measurement microphones were placed on tripods approximately 5 feet above the ground, and were equipped with appropriate wind screens. The sound level meters were programmed to record hourly sound levels in terms of the energy-equivalent noise level (L_{eq}), maximum instantaneous noise level during a specific period (L_{max}), and other statistical descriptors.

Atmospheric conditions were observed during the noise surveys. Wind speeds typically ranged from 0 to 15 miles per hour, temperatures ranged from 46 to 66 degrees Fahrenheit, with moderate humidity during April 2013 survey. During May 2013 survey, wind speeds typically ranged from 0 to 15 miles per hour and temperatures ranged from 41 to 89 degrees Fahrenheit, with moderate humidity. During the September 2014 survey, wind speeds typically ranged from 0 to 12 miles per hour and temperatures ranged from 53 to 91 degrees Fahrenheit, with moderate humidity. In general, the atmospheric conditions were appropriate for environmental acoustics measurements.

ISSUES NOT DISCUSSED FURTHER IN THIS DEIR

Increased use of OHVs at Prairie City SRVA is not anticipated to generate vibration levels that would be experienced at nearby sensitive receptors (i.e., residences). Distances to the nearby sensitive receptors and recreational areas at Prairie City SRVA would be greater than 100 feet; therefore, increased OHV use would not result in human response for residential uses (i.e., annoyance) at any nearby existing sensitive land uses. The distance between the existing and potential facility construction areas and existing vibration-sensitive uses would be greater than 100 feet, and construction associated with the Prairie City SVRA General Plan is not expected to produce substantial vibration levels at off- and on-site vibration-sensitive receptors. Therefore, vibration-related impacts are not discussed further in this DEIR.

The nearest airport to the planning area is Sacramento Mather Airport in the city of Mather, which is located approximately 7 nautical miles west of the planning area. There are no airstrips in the vicinity of the planning area. Implementing the General Plan would not expose any noise-sensitive receptors to excessive aircraft noise. The planning area is not located within the boundaries of an airport land use plan or within 2 miles of a public, public-use, or private airport/airstrip. Thus, no impact related to aircraft noise would occur, and this topic is not discussed further in this DEIR.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.9-1 Increased Off-Site and On-Site Noise Levels Related to Off-Highway Vehicle Use

For the analysis in this DEIR, it is assumed that attendance at Prairie City SVRA will likely rise with population growth and general economic conditions in the region, but not significantly. As discussed in Chapter 2, “Project Description,” based on the California Department of Finance’s demographic projections for 2010 through 2060, Sacramento County and El Dorado County are expected to experience average annual growth rates of 0.89 percent and 1.02 percent, respectively. Although the

Prairie City SVRA General Plan would expand the SVRA's OHV options, attendance would likely grow naturally, and the expanded OHV options would not result in doubling of attendance on any given day or at any special event. Therefore, on-site noise measurements conducted during typical daytime operations and during special events are considered representative of future Prairie City SVRA noise levels to which future planned adjacent communities and on-site receptors may be exposed.

Off-Site Noise-Sensitive Uses

Location 1 (i.e., LT-01) in Figure 3.9-1 (see also Table 3.9-1) represents the northwest portion of the planning area within the Yost property. Existing State Park caretaker housing units are the only uses that are present in this immediate area; however, the planned development designated by the City of Rancho Cordova for future residential use (General Plan Figures 2-1 and 2-3) in the East Planning Area may be considered noise sensitive. The community noise survey for this DEIR was conducted during peak activity in 2013 at Prairie City SVRA and is considered to represent peak noise levels that may be associated with operations at off-site sensitive receptors. Under typical SVRA conditions, the maximum average noise level at the State Park caretaker housing units would be 60 dBA L_{eq}. During a special event, the Hangtown Motocross Classic, the maximum average noise level measured 69 dBA L_{eq} (see LT-01 in Figure 3.9-1; see also Table 3.9-1).

Location 2 (i.e., LT-02) in Figure 3.9-1 (see also Table 3.9-1) represents the southeast portion of the planning area near the Barton Ranch acquisition area. No existing noise-sensitive land uses are present in this area; however, the planned development designated by the City of Rancho Cordova for future residential use (General Plan Figures 2-1 and 2-3) in the East Planning Area may be considered noise sensitive. The community noise survey for this DEIR was conducted during peak activity in 2013 at Prairie City SVRA and is considered to represent peak noise levels that may be associated with operations at off-site sensitive receptors. Under typical SVRA conditions, the maximum average noise level at Location 2 would be 52 dBA L_{eq}. During a special event, the Hangtown Motocross Classic, the maximum average noise level measured 64 dBA L_{eq} (see LT-02 in Figure 3.9-1; see also Table 3.9-1).

Location 3 (i.e., LT-03) in Figure 3.9-1 (see also Table 3.9-1) represents the southwest portion of the planning area. No existing noise-sensitive land uses are present in this area; however, the planned development designated by the City of Rancho Cordova for future residential use (General Plan Figures 2-1 and 2-3) in the East Planning Area may be considered noise sensitive. The community noise survey for this DEIR was conducted during peak activity in 2014 at Prairie City SVRA and is considered to represent peak noise levels that may be associated with operations at off-site sensitive receptors. During a special event, the NorCal Rock Racing event, the maximum average noise level measured 57 dBA L_{eq} (see LT-03 in Figure 3.9-1; see also Table 3.9-1).

Location 4 (i.e., LT-04) in Figure 3.9-1 (see also Table 3.9-1) represents the northeast portion of the planning area. No existing noise-sensitive land uses are present in this area; however, the planned development designated by the City of Folsom for future residential use (General Plan Figures 2-1 and

2-3) in the FPASP area would include commercial uses adjacent to the planning area as well as residential uses farther northeast that may be considered noise sensitive. The area immediately north of this location is designated by the *Rancho Cordova General Plan* as the Aerojet Planning Area for industrial and commercial office use and is not considered noise sensitive. The community noise survey for this DEIR was conducted during peak activity in 2014 at Prairie City SVRA and is considered to represent peak noise levels that may be associated with operations at off-site sensitive receptors. During a special event, the NorCal Rock Racing event, the maximum average noise level measured 60 dBA L_{eq} (see LT-04 in Figure 3.9-1; see also Table 3.9-1).

The dominant noise source at Locations 1 and 4 is vehicular traffic on White Rock and Prairie City Road, 63 dBA L_{dn} and 61 dBA L_{dn}, respectively. Location 2 is exposed to traffic noise from Scott Road. The only planned development with future residential uses that may be exposed to Prairie City SVRA noise is the FPASP area. However, OHV noise levels in this residential development would be reduced by noise attenuation associated with the proposed intervening commercial structures in the development (planned commercial area just east of Prairie City Road and north of White Rock Road) and the increased distance (more than 4,000 feet) to the proposed residential areas. Furthermore, as the FPASP area builds out, White Rock Road would increase to a six-lane expressway when the Capital Southeast Connector Project is constructed. The resulting traffic noise would dominate the noise environment for residential uses in the vicinity of the planning area and most likely mask future Prairie City SVRA noise. Therefore, noise impacts from SVRA operation at off-site noise sensitive uses would be **less than significant**.

On-Site Uses

OHV noise levels at Prairie City SVRA were measured for 15-minute intervals at 50 feet from the OHV trails during the weekend events in 2013 and 2014 (see Table 3.9-3). These noise levels were evaluated to determine the associated impact on the State Park caretaker housing units, camping, and office uses within the SVRA boundary; however, on-site uses are not considered noise sensitive. These noise measurements represent SVRA operational noise levels from the center of the most active portion of the planning area (4x4 track and open area, Coyote Ravine, motorcycle and all-terrain vehicle area, and Hangtown Motocross Track) relative to the land use; see General Plan Figure 2-6. Based on the noise levels measured, the average reference noise level of 86 dB (highest average of noise levels in Table 3.9-3) at 50 feet is considered the appropriate noise level for evaluating Prairie City SVRA operational noise at receptor locations.

Noise generated from mobile sources generally attenuate at a rate of 4.5 dBA per doubling of distance (dB/DD). Stationary noise sources spread with more spherical dispersion patterns and attenuate at a rate of 6 dB (hard ground) to 7.5 dB/DD (soft ground) (FHWA 2011). The OHV activities are considered moving point sources for noise modeling.

Therefore, assuming a reduction of 6 dBA/DD, OHV operation within 1,750 feet would exceed the exterior threshold of 55 dBA for noise-sensitive uses. Table 3.9-4 shows the distances from the nearest concentrated OHV activity area (i.e., motocross practice track, multiuse special-events area) and resulting noise levels relative to proposed on-site land uses. The OHV operation would exceed the daytime exterior threshold of 55 dBA L_{eq} only at the camping area and State Parks caretaker housing units, as shown in Table 3.9-4.

Table 3.9-3. Summary of Reference Noise Measurements

Noise-Level Measurement Location	Time of the Week	Date and Time	L_{eq}, dBA at 50 Feet	Average L_{eq}, dBA at 50 Feet
Typical Condition (first round of measurements, April 5–8, 2013)				
Four Locations: Hangtown Motocross Track	Weekend	Saturday, April 6, 2013	74	79
			84	
			77	
			72	
Hangtown Motocross Classic (second round of measurements, May 15–21, 2013)				
Two Locations: Hangtown Motocross Track	Weekend	Saturday, May 18, 2013	81	86
			87	
			87	
4x4 Events (third round of measurements, September 5–8, 2014)				
Four Locations: 4x4 Track and Open Area, 4x4 Trials Area	Weekend	Saturday, September 6, 2014	76	84
			84	
			80	
			84	
			82	

Notes: dBA = A-weighted decibels; L_{eq} = equivalent sound level (average of the sound energy occurring over a specified time period); L_{max} = maximum sound level (highest instantaneous sound level measured during a specified period)
All measurements conducted 50 feet from off-highway vehicle trails.
Source: Data compiled by AECOM in 2013 and 2014

The results shown in Table 3.9-4 represent a conservative noise exposure. The noise levels do not take into account noise attenuation associated with varying topography and atmospheric absorption because the reference noise levels were measured at a distance of 50 feet from the source and do not represent the site-specific attenuation rate. Therefore, actual noise levels and the associated contour distances at on-site uses could be less.

Table 3.9-4. Exterior Noise Levels (dBA) vs Distance (feet)

On-Site Use	Noise Level, dBA	Distance (feet)
	86	50
District Office	58	1,300
State Parks Caretaker Housing	61	800
Visitor Center	58	1,300
Environmental Training Center	61	800
Overnight Camping Area	66	500

Note: dBA = A-weighted decibels; State Parks = California Department of Parks and Recreation
Source: Data compiled by AECOM in 2015.

Based on the results in Table 3.9-4, the proposed overnight camping area and State Parks caretaker housing units would be the only on-site uses associated with outdoor activities that would be exposed to SVRA operational noise levels above 55 dBA L_{eq}. As shown in Table 3.9-1, operational noise levels from OHV events measured the highest (63–69 dBA) at Location 1 (State Parks caretaker housing) for a couple of hours during the midday, while typical operational noise levels at State Parks caretaker housing units range from 58 to 60 dBA. OHVs would not operate past sunset, with the exception of a limited number of nighttime special events, such as the Headlight Festival held annual in December. Prairie City SVRA typically operates during daylight hours, from 8 a.m. to sunset, as discussed in Section 2.2.3 of the General Plan. During the daytime when the OHV operations occur (particularly during the events), campers and State Parks employees would be either operating OHVs and/or watching events from even a closer distance to OHV trails, or working the events. The exterior areas of the office uses are not considered noise sensitive because the intended use of an office land use category is indoors and a receptor would be exposed to these noise levels only when outside the office building. Interior-to-exterior noise reduction typically results in a 25-dBA noise reduction when constructed using the Uniform Building Code, resulting in interior noise levels ranging from 33 dBA to 36 dBA L_{eq}. Therefore, noise impacts from SVRA operation at the camping area would be **less than significant**.

Because off-site noise levels related to future OHV use may increase at future sensitive uses adjacent to the planning area, and on-site noise levels related to OHV use may increase at the State Parks caretaker housing, the noise impact from increased recreational activities over time with implementation of the General Plan could be significant. However, OM Goal 5 and Guidelines 5.2, 5.3, 5.4 and 5.6 (shown below) of the Prairie City SVRA General Plan recommend implementation of a number of noise-reduction measures at the park.

OM Goal 5: Develop and maintain SVRA facilities and monitor OHV activities to ensure compatibility with surrounding land uses.

- **OM Guideline 5.2**: Require that noise levels not exceed relevant jurisdiction (county) noise standards for hourly exposure at or beyond the boundary line of the SVRA. In the SVRA, similar limits shall be strived for in areas of permanent human habitation (e.g., State Parks caretaker housing units).

- **OM Guideline 5.3:** Maintain instrumentation and trained personnel to enforce the California Vehicle Code regulation concerning excessive vehicle noise. All vehicles operating in the SVRA shall meet applicable noise limits set in the California Vehicle Code.

- **OM Guideline 5.4:** Maintain a buffer area between OHV trails at Prairie City SVRA and the on-site properties to minimize conflicts and prevent OHV use where it is not allowed. Specifically, maintain buffers of 100 feet and 50 feet from State Parks caretaker housing and on-site offices, respectively. OHV use should be limited to speeds of 15 miles per hour within 100 feet of State Parks caretaker housing and within 50 feet of offices.

- **OM Guideline 5.6:** Subject to existing law, require mufflers that are consistent with the equipment manufacturer’s specifications (original equipment or equivalent).

Implementing these guidelines would reduce potential operational noise impacts at noise-sensitive receptors so that ambient noise levels would not increase significantly. These measures require that noise levels not exceed relevant jurisdiction (county) noise standards (OM Guideline 5.2) and include applying California Vehicle Code regulations concerning excessive vehicle noise that would reduce noise levels related to operational activities (OM Guideline 5.3), maintaining the required buffer between OHV trails at Prairie City SVRA and the noise-sensitive properties (on- and off-site) (OM Guideline 5.4), and requiring mufflers that are consistent with the equipment manufacturer’s specifications (OM Guideline 5.6). Therefore, with implementation of these General Plan goal and guidelines, the impact related to increases in off-site noise levels related to OHV activities would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.9-2 Increased Noise Levels Related to Traffic

Traffic noise modeling was conducted using the FHWA Highway Traffic Noise Prediction Model and traffic data provided by the project traffic engineer (Becker, pers. comm., 2014). Traffic noise modeling was conducted for both existing conditions and future conditions with implementation of the Prairie City SVRA General Plan.

Traffic noise predictions are based on 24-hour roadway counts and peak-hour intersection counts. Refer to DEIR Section 3.11, “Transportation and Traffic,” for traffic volumes. For modeling purposes, future (year 2030) roadway geometries, traffic mix, and speed conditions are assumed to remain the same as existing conditions. Table 3.9-5 summarizes the modeled future (2030) traffic noise levels at roadways in the vicinity of the planning area and on-site Main Park Road and summarizes the modeling noise level increases expected following implementation of the General Plan.

The extent to which noise-sensitive receptors in the vicinity of the planning area are affected by traffic noise depends on their proximity to the roadways and their individual sensitivity to traffic noise. As shown in Table 3.9-5, traffic noise level increases in future (year 2030) SVRA special-event operations would range between 0 dBA and 10 dBA versus typical future weekday traffic noise levels. It should be noted that future Prairie City SVRA General Plan–related traffic noise level increases occurring on special-event weekends are typically lower than or equal to future weekday traffic noise levels without General Plan traffic volumes. As shown in Table 3.9-5, traffic noise levels in the future (year 2030) would significantly increase at 100 feet from the centerline of three studied roadway segments: Prairie City Road from White Rock Road to north of White Rock Road, White Rock Road from Grant Line Road to west of Grant Line Road, and Main Park Road.

No noise-sensitive receptors are currently located within 100 feet of the studied roadway segments and these Prairie City SVRA General Plan–related traffic noise increases are considered to be short term, typically occurring only over a weekend. Planned noise-sensitive land uses have been designated north of Prairie City Road within the FPASP area (see General Plan Figure 2-2); however, distances to the future noise-sensitive land uses are not known at this time and it is assumed that future traffic noise levels, especially future weekday, would be mitigated during development of those land uses. The nearest existing noise-sensitive uses, the three State Parks caretaker housing units located approximately 1,000 feet south of White Rock Road, would be exposed to future traffic noise levels of 52 dBA L_{dn}. State Parks caretaker housing units are also located approximately 1,100 feet north of the Main Park Road and would be exposed to future special-event traffic noise levels of 45 dBA L_{dn}. Therefore, this impact would be **less than significant**.

IMPACT 3.9-3 Increase in Temporary, Short-Term Off-Site Noise Levels during Construction and Maintenance

Construction and maintenance activities for facilities envisioned in the Prairie City SVRA General Plan would generate short-term, temporary, and intermittent noise at or near off-site individual noise-sensitive locations near the planning area as well as on-site State Parks caretaker housing receptors. Noise levels generated during construction and maintenance would fluctuate depending on the physical location of construction activities at the SVRA, and on the particular type, number, and duration of use of various pieces of equipment. Noise from construction and maintenance activities is typically considered point-source noise. Noise levels drop off at a rate of 6 dBA/DD over hard site surfaces such parking lots, and approximately 7.5 dBA/DD over soft site surfaces such as grass fields and open terrain with vegetation (FTA 2006:2-10 through 2-11).

Equipment required for construction and maintenance activities in the planning area would likely consist of a paver, backhoe, bulldozer, tractor, and various trucks. The maximum noise levels produced by one of these types of equipment, at a distance of 50 feet and without noise controls, could range from 80 to 85 dBA L_{max} (Table 3.9-6). Noise levels vary for individual pieces of equipment because equipment comes in different sizes and with different engines. 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, including work breaks and idle time, have long-term noise averages that are lower than many short-term noise events. In addition, because of the dynamic nature of a construction site, noise levels are calculated from the center of the activity. Using these parameters, construction activities, including simultaneous operation of multiple pieces of equipment, were modeled to generate a combined noise level of 85 dBA L_{eq} at 50 feet from the center of construction activity (Appendix C).

The closest on-site uses are the State Parks caretaker housing units located along White Rock Road approximately 450 feet within the northwestern boundary of the SVRA and offices located 700 feet within the southwestern boundary of Prairie City SVRA. The intervening ground type is primarily open space and is considered acoustically soft. When modeled using FTA noise methodology (FTA 2006:12-1 through 12-15) and the above parameters, noise from construction and maintenance activities would generate a combined noise level of 66 dBA L_{eq} at State Parks caretaker housing units and 62 dBA L_{eq} at SVRA offices.

Construction noise would be temporary, and the existing noise environment surrounding the SVRA already is considered intermittently loud because of OHV use and traffic along White Rock Road and Prairie City Road. Ambient noise levels measured at the western boundary of the SVRA closest to this noise-sensitive receptor (Location 1 in Table 3.9-1) ranged from 45 to 69 dBA L_{eq}, on weekdays and weekends, respectively. Anticipated noise levels generated by construction and maintenance activities could exceed existing noise levels in this area. However, construction noise is considered short term and is typically exempt from varying property line noise standards related to nontransportation noise sources.

Regarding project-related construction traffic, the scale of facilities envisioned with the General Plan and the fact that the facilities would be constructed over time, future construction activities for facilities envisioned in the General Plan are anticipated to result in a short-term, temporary addition of haul trucks along White Rock Road and Prairie City Road. The existing peak-hour traffic volumes along White Rock Road near the existing SVRA main access road (Main Park Road) are 1,197 vehicles per hour under the weekday condition, 527 vehicles per hour under the Saturday noon condition, and 1,469 vehicles per hour under the Saturday special condition. The existing peak-hour traffic volumes along Prairie City Road near the existing SVRA main access road are 650 vehicles per hour under the weekday condition, 258 vehicles per hour under the Saturday noon condition, and 1,461 vehicles per hour under the Saturday special condition. Traffic data were provided by the project traffic engineer (Becker, pers. comm., 2014).

Table 3.9-5. Future (2030) Noise Levels Modeled for Traffic in the Vicinity of the Planning Area

		2030—Weekday				2030—Saturday Noon				2030—Saturday Special				
		Noise Level @ 100 Feet (dBA, L_{dn})	Contours			Noise Level @ 100 Feet (dBA, L_{dn})	Contours			Noise Level @ 100 Feet (dBA, L_{dn})	Contours			2030—Change in Noise Level @ 100 Feet (dBA) Saturday Special vs. Saturday Noon
Roadway	Segment		70 dBA	65 dBA	60 dBA		70 dBA	65 dBA	60 dBA		70 dBA	65 dBA	60 dBA	
Prairie City Road	From White Rock Road to north of White Rock Road	67	59	127	274	62	31	67	144	67	62	134	290	**+5** (+0.3 weekday change)
White Rock Road	From Prairie City Road to east of Prairie City Road	68	77	166	357	64	40	87	187	65	45	97	209	+1
White Rock Road	From Prairie City Road to special event access	70	99	213	459	66	52	112	240	68	74	159	342	+2
White Rock Road	From special event access to Prairie City Road	70	97	209	449	66	53	113	244	68	73	157	338	+2
White Rock Road	From special event access to main park access	70	97	209	449	66	53	113	244	66	55	117	253	0
Main park access	From White Rock Road to south of White Rock Road	44	2	4	8	51	5	11	24	61	25	55	118	**+10** (45 dBA L_{dn} at 1,100 feet, or State Parks caretaker housing)
White Rock Road	From main park access to special event access	70	97	208	449	66	53	113	244	66	56	121	261	0
White Rock Road	From main park access to west of main park access	70	97	208	449	66	51	111	239	68	70	150	324	+2
Grant Line Road	From White Rock Road to south of White Rock Road	68	74	159	342	64	39	83	179	65	47	101	218	+1
White Rock Road	From Grant Line Road to north of Grant Line Road	70	97	208	449	66	51	109	235	68	70	150	324	+2
White Rock Road	From Grant Line Road to west of Grant Line Road	65	47	102	219	61	25	53	115	64	41	89	191	**+3** (-0.9 weekday change)

Notes: dBA = A-weighted decibels; EB = eastbound; WB = westbound; L_{dn} = day-night average noise level; **Bold** = a significant traffic noise level increase due to General Plan implementation.

Source: Modeled by AECOM in 2014

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Table 3.9-6. Typical Noise Levels Caused By Construction Equipment[1]

Equipment Type	Typical Noise Level (dBA L_{max}) at 50 feet
Backhoe	80
Concrete mixer truck	85
Concrete pump truck	82
Dozer	85
Dump truck	84
Generator	82
Grader	85
Paver	85
Tractor	84

Notes: dBA = A-weighted decibels; L_{eq} = energy-equivalent noise level; L_{max} = maximum instantaneous noise level during a specific period

[1] All equipment fitted with properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are the actual measured noise levels for each piece of heavy construction equipment.

Sources: BBN 1981:8-4 through 8-5; FTA 2006:12-6 through 12-7; FHWA 2006:3

Implementation of the General Plan is not anticipated to generate 275 haul truck trips per hour on any given roadway for any given project. For construction activities to cause a significant increase (+3 dBA) in existing traffic noise, the number of trips would need to double (i.e., increase by 100 percent or doubling of existing traffic volumes). Thus, the anticipated temporary and short-term increase in traffic from construction activities would be substantially less than a doubling, resulting in an imperceptible increase in traffic noise.

Construction activities related to implementation of the Prairie City SVRA General Plan would not cause an increase in temporary short-term noise levels during construction and maintenance. Such activities also would not cause temporary short-term traffic noise levels to increase substantially or increase traffic noise levels at on- and off-site noise-sensitive receptors. Therefore, the impact of off-site noise levels related to traffic would be **less than significant**.

With implementation of OM Guideline 5.5 (shown below) in the General Plan, typical noise-reduction measures during construction would be implemented, and a maximum distance from on-site uses would be maintained within the planning area during construction activities.

- **OM Guideline 5.5:** Employ practices to reduce noise levels for noise-sensitive receptors during construction of facilities. Reduce noise generated during construction and maintenance activities by:
    - properly maintaining equipment with noise-reduction devices in accordance with manufacturer specifications (e.g., mufflers, shrouds, filters);

- using quieter than standard equipment when possible (e.g., electrically powered equipment);
- limiting construction activities to between 8:00 a.m. and 6:00 p.m., Monday through Saturday (excluding emergency work);
- restricting, when possible, equipment travel near noise-sensitive receptors unless the equipment used would not exceed the daytime standard of 55 A-weighted decibels day-night average sound level (dBA L_{eq}) and the nighttime standard of 45 dBA L_{eq} at the property line of noise-sensitive receptors;
- turning off equipment during prolonged periods of nonuse;
- restricting alarms to warn of safety issues only;
- using noise-attenuating shields (e.g., berms, stationary barriers, noise blankets, shrouds) when construction activities would occur over the long term or when activities take place within close proximity of on-site uses;
- locating equipment staging areas and material loading and unloading zones greater than 500 feet from the nearest sensitive receptor;
- using rubber-tired equipment as much as feasible to minimize groundborne noise; and
- locating any stationary noise sources (e.g. generators) within noise enclosures.

With adherence to OM Guideline 5.5, the impact related to increases in temporary short-term off-site noise levels during construction and maintenance activities from implementation of the General Plan would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.9.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the Prairie City SVRA General Plan and implementation of resulting actions would not result in significant noise impacts on noise-sensitive receptors.

3.9.6 MITIGATION MEASURES

No significant impacts on noise resources would result with implementation of the Prairie City SVRA General Plan and no mitigation is required.

3.10 PUBLIC SERVICES AND UTILITIES

This section describes public services and utilities in the planning area. It also discusses the state and local regulatory framework and analyzes the potential impacts of implementing the Prairie City State Vehicular Recreation Area (SVRA) General Plan on these resources.

3.10.1 EXISTING SETTING

The existing setting for public services and utilities is described in Chapter 2, “Existing Conditions,” of the General Plan. Section 2.4.2, “Public Safety,” characterizes security and emergency services in the planning area, including fire protection, medical aid, and emergency access and egress. Section 2.2.3, “Facilities,” includes a description of electrical service, telecommunications, water delivery and wastewater treatment, and solid waste disposal at Prairie City SVRA. General Plan Figure 2-8 depicts the locations of the existing easements in the planning area.

3.10.2 REGULATORY SETTING

Section 2.7.3.9, “Public Resources Regulations,” of the Prairie City SVRA General Plan summarizes the state and regional plans, policies, regulations, and laws related to public services and utilities at Prairie City SVRA.

3.10.3 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, implementation of the Prairie City SVRA General Plan would have a potentially significant impact related to public services and utilities if it would:

- exceed the service capacity of existing local and regional energy supplies during peak and base periods (CEQA Guidelines Appendix F);
- result in insufficient water supplies available to serve the project from existing entitlements and resources, or cause significant environmental impacts from the need for new or expanded entitlements;
- exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board (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 stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to supply the project's projected demand in addition to the provider's existing commitments;
- 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; or
- cause significant environmental impacts from the construction of new or expanded facilities or services required to maintain acceptable service ratios, response times, or other performance objectives for any public services, including police, fire, medical aid, emergency access, or schools.

3.10.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

Impacts were evaluated in relation to General Plan implementation activities that would have the potential to result in physical environmental effects. The evaluation of potential impacts related to public services and utilities is based on a review of emergency services (park security, fire protection, medical aid, and emergency access and egress) and utilities (electricity and telecommunications services, water delivery, wastewater treatment facilities, and solid waste).

Water quality issues associated with stormwater runoff are addressed in Section 3.8, "Hydrology and Water Quality," of this DEIR. Wildland fire hazards and emergency access issues are addressed in Section 3.7, "Hazards and Hazardous Materials," of this DEIR.

ISSUES NOT DISCUSSED FURTHER IN THIS DEIR

Implementation of the General Plan would not result in or encourage the development of any residential land uses that would generate a demand for school services. Therefore, these issues are not addressed further in this DEIR.

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.10-1 Increased Demand for Water Supplies and Infrastructure

As described in Section 2.2.3, "Facilities," of the Prairie City SVRA General Plan, water is currently required for the State Parks district offices, the environmental training center, Prairie City SVRA's maintenance shop and ranger station, restrooms, drinking fountains, landscaping, and dust suppression. Implementing the General Plan would result in construction of new facilities—an overnight camping area, a multiuse special events area, enhanced spectator facilities, a visitor center, off-highway vehicle (OHV) recreation facilities/trails, and relocation of the district offices and ranger station. State Parks would continue to provide water from the on-site well and 500,000-gallon storage tank located in the southwest corner of the SVRA near the maintenance office. Water is distributed from the storage tank to central points throughout the park. Water demand for Prairie City SVRA is well within the capacity of the existing on-site groundwater well. Approximately 83.4 million gallons of water are available each year. In 2013, the SVRA used approximately 23,134,702 gallons of water, and in 2014 water usage was reduced by 37 percent to 14,507,632.

Visitor attendance at Prairie City SVRA peaked in 2004 at 193,330 visitors (State Parks 2012), and it is assumed that peak water demands would also have occurred in 2004. Attendance is anticipated to reach 168,481 visitors by 2030, which equates to a decrease of approximately 12.9 percent compared to the fiscal year 2004 peak of 193,330 visitors. Given a corresponding decrease in demand for potable water, which would be less than the peak 2004 water demands, surplus supplies of potable water are available to meet the demands of the new development envisioned in the General Plan.

Implementation of General Plan Water Goal 3 and associated guidelines (all shown at the end of this impact discussion) would ensure that future development and improvements at Prairie City SVRA would conserve water resources. Water Guideline 3.1 supports the use of recycled water for dust control and irrigation, as allowed by water quality and health regulations and as available at the site or nearby. Water Guideline 3.2 recommends management of facilities to accommodate periods of drought or low water supply, by restricting the use of water for dust control and calling for the use of alternative dust suppression methods, as necessary. Water Guideline 3.3 recommends implementing water conservation measures to reduce water use by 20 percent by 2020 in accordance with Executive Order B-18-12.

OM Guideline 6.1 (shown at the end of this impact discussion) recommends various actions to minimize fugitive dust emissions during maintenance activities. These actions would minimize the use of water for dust suppression. In addition, OM Guideline 6.5 (shown at the end of this impact discussion) recommends that event sponsors and/or staff members implement various actions to reduce the release of fugitive dust during special events. These actions would minimize the use of water for dust suppression.

Water Goal 3: Manage the SVRA to conserve water resources while maintaining a quality OHV recreational experience.

- **Water Guideline 3.1:** Use recycled water, as available, for dust control and irrigation as allowed by water quality and health regulations and as available at the site or nearby.

- **Water Guideline 3.2:** Manage facilities to accommodate periods of drought or low water supply. Minimize the use of water for dust control unless recycled or grey water, and continue to use alternative dust suppression methods, as necessary.

- **Water Guideline 3.3:** Implement water conservation measures that will reduce water use by 10 percent by 2015 and 20 percent by 2020 as measured against a 2010 baseline. These measures are in accordance with Executive Order B-18-12 issued by Governor Edmund G. Brown Jr. on April 25, 2012, and with the Proclamation of a State of Emergency signed on January 17, 2014. The Proclamations of Continued State of Emergency signed on April 25, 2014, and December 22, 2014, and Executive Order B-29-15 issued on April 1, 2015, impose restrictions to achieve a 25 percent reduction in potable water usage through February 28, 2016.

OM Goal 6: Reduce potential air quality impacts that could result from construction, maintenance, and OHV recreation activities.

- **OM Guideline 6.1:** The following Basic Construction Emission Control Practices are required during construction of all projects (regardless of significance) occurring within the Sacramento Metropolitan Air Quality Management District's jurisdiction, which would include the entire planning area.

  - Water all exposed surfaces during construction activities two times daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

  - Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

  - Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day during construction activities, and as necessary during operations. Use of dry power sweeping is prohibited.

  - Limit construction-related vehicle speeds on unpaved roads to 15 miles per hour.

  - Complete all paving of roadways, driveways, sidewalks, and parking lots as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

  - Minimize idling time either by shutting equipment off when not in use or by reducing the time of idling to 5 minutes (required by California Code of Regulations, Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.

  - Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

- **OM Guideline 6.5:** Require that event sponsors and/or staff members implement the following actions to reduce the release of fugitive dust during special events:
  - Before each special event, apply best available control measures (BACMs) for dust suppression that are safe for human exposure and ground application to areas that are not paved or covered with gravel and that would be used for parking, foot traffic, and/or nonmobile activities at special events (e.g., vendors, concert locations, display areas).
  - Apply BACMs immediately before setup of a special event and at the end of each special-event day, when the majority of visitors have left the SVRA. Apply subsequent treatments as needed during the special event if excessive dust is observed. Apply BACMs for dust suppression to control trackout/carryout and sediment where unpaved areas join paved areas.

With adherence to these General Plan goals and guidelines, implementation of the General Plan would not exceed the capacity of the existing water supply system, nor would it result in the construction of new water treatment facilities or expansion of existing facilities. Consequently, there would be no requirement to provide new or expanded water supply entitlements. On-site water distribution lines would be installed as necessary to serve the new or relocated facilities. Any substantial future development that would create a demand for water requiring additional water supplies and treatment would be subject to project-level CEQA analysis and mitigation, if necessary. Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.10-2 Increased Demand for Wastewater Treatment Facilities and Infrastructure

As described in Section 2.2.3, “Facilities,” of the Prairie City SVRA General Plan, wastewater at Prairie City SVRA is disposed of through septic tanks and leach lines that are permitted by Sacramento County, or through vault toilets that are pumped out for off-site disposal. Future increases in the number of visitors would result in increased usage of existing restrooms. New facilities envisioned in the General Plan such as the overnight campground, multiuse special events center, and visitor center, and relocated facilities including the district offices and ranger station, would require additional restrooms.

As discussed in DEIR Impact 3.5-5 in Section 3.5, “Geology, Soils, Minerals, and Paleontological Resources,” soils in the planning area would be unsuitable for traditional septic systems. Geo Guidelines 1.1 and 1.2 (shown below) in the Prairie City SVRA General Plan recommend that restroom facilities be designed by a California-registered civil engineer to use wastewater containment systems to avoid the need for soil percolation of wastewater. In addition, new septic systems and vault toilets would comply with the requirements outlined in Chapter 6.32 of Title 6 of the Sacramento County Code as described in Section 2.7.3.9, “Public Services Regulations,” of the Prairie City SVRA General Plan. This ordinance establishes and regulates standards for design, construction, installation, operation, and maintenance of on-site facilities and ensures compliance with applicable standards, laws, and guidelines as adopted and/or modified by the State Water Resources Control Board and the Central Valley RWQCB.

Geo Goal 1: Manage the SVRA to minimize geologic hazards while maintaining a quality OHV recreational experience.

- **Geo Guideline 1.1:** Drainage facilities shall be designed by a California-registered civil engineer, and a geotechnical engineer shall be retained to review construction of drainage facilities, to minimize potential safety hazards or downstream damage associated with failure of earthen or concrete barriers from slope instability.
- **Geo Guideline 1.2**: Avoid constructing restroom facilities that require soil percolation of wastewater. All new restrooms should use wastewater containment systems (i.e., wastewater holding tanks such as those used in portable toilets or concrete vault toilets), with periodic removal, treatment, and disposal off-site by a licensed contractor.

With adherence to these General Plan guidelines and Chapter 6.32 of Title 6 of the Sacramento County Code, implementation of the General Plan would not exceed wastewater treatment requirements of the Central Valley RWQCB or result in the construction of new or expanded regional wastewater treatment facilities. This impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.10-3 Increased Demand for Utility Services and Infrastructure

Construction of the new facilities envisioned in the General Plan (e.g., the overnight campground, multiuse special events area, and visitor center) would increase demand for electricity, telephone services, and related infrastructure. These facilities would be relatively small and would not substantially increase electrical demand in the Sacramento Municipal Utility District (SMUD) service area. The potential electrical demand for these facilities would be evaluated during subsequent project-level reviews. Currently the on-site distribution system, which consists of a 12-kilovolt line, provides electrical power for the administration building, water pumping requirements, security lighting, and lighting for tracks. SMUD would install new on-site electrical distribution lines as necessary by extending existing infrastructure. AT&T would continue to provide telephone services to the SVRA by extending existing facilities as necessary.

OM Guideline 1.1 (shown at the end of this impact discussion) recommends that adequate utilities be provided to meet the daily needs of staff members and visitors for existing facilities and new ones envisioned in the General Plan. OM Guideline 1.2 (also shown at the end of this impact discussion) provides that the Off-Highway Motor Vehicle Recreation Division of State Parks investigate and implement the use of solar and other innovative and renewable technologies for the provision of electricity at the SVRA.

Adherence to OM Guideline 1.3 (shown below) in the General Plan would promote opportunities to incorporate sustainability into SVRA development, operations, and maintenance. Sustainability initiatives could include encouraging the use of electric vehicles, promoting energy efficiency, and applying energy efficiency and green building standards to new construction.

OM Goal 1: Provide sustainable visitor services and infrastructure that encourage responsible visitor use of Prairie City SVRA and meet visitor needs.

- **OM Guideline 1.1:** Provide utilities to meet the daily needs of staff members and visitors for existing facilities and new ones envisioned in this General Plan.
- **OM Guideline 1.2:** Investigate and implement the use of solar and other innovative and renewable technologies to provide electricity at the SVRA.
- **OM Guideline 1.3:** Promote opportunities to incorporate sustainability into SVRA development, operations, and maintenance. Sustainability initiatives could include supporting and encouraging the use of electric vehicles, promoting energy efficiency, using reclaimed water, and applying energy efficiency and green building standards to new construction and other initiatives that may be developed in the future.

With implementation of these goals and guidelines implementation of the General Plan would not result in the need for new or expanded regional or local infrastructure or supplies, the impact on utility services and infrastructure would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.10-4 Increased Demand for Solid Waste Disposal and Compliance with Solid Waste Regulations

Implementation of the General Plan would result in increased generation of solid waste as a result of the increased visitation to the SVRA that is anticipated over time and expected with the proposed new overnight camping facilities. Solid waste disposal services at Prairie City SVRA are provided by Waste Management as described in Section 2.2.3, “Facilities,” of the General Plan.

Solid waste is transported to the Kiefer Landfill, which is anticipated to continue in operation until approximately 2064. The Kiefer Landfill would have sufficient capacity to meet Prairie City SVRA’s future needs for solid waste disposal. In addition, the General Plan does not include any components that would violate applicable federal, state, or local solid waste regulations. Operation of Prairie City SVRA would comply with applicable solid waste regulations, including those related to recycling.

Because implementation of the General Plan would not require the expansion of existing or construction of new landfills, impacts on solid waste services would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.10-5 Increased Demand for Fire Protection Services

As described in Section 2.4.2, "Public Safety," of the General Plan, fire protection services at Prairie City SVRA are provided by State Parks, the Sacramento Metropolitan Fire District (SMFD), and the California Department of Forestry and Fire Protection (CAL FIRE). Section 2.4.2 also describes emergency access to the SVRA.

Increased attendance over time has the potential to increase demand for fire protection services. Construction of the facilities envisioned in the General Plan (e.g., the overnight campground, multiuse special-events area, OHV areas, and visitor center) would increase the potential for accidental fires and the need for fire suppression. New structures constructed at the SVRA would be required to incorporate California Fire Code requirements, as summarized in Section 2.7.3.9, "Public Resources Regulations," of the General Plan. All new facilities would be accessible using standard fire equipment, and implementation of the General Plan would not create a need for additional fire equipment and fire department personnel. Emergency access to Prairie City SVRA would continue to be provided by White Rock Road and Scott Road.

Adherence to OM Goal 3 and OM Guidelines 3.5, 3.7, 3.8, and 3.9 (shown below) in the General Plan would provide the facilities and services that would contribute to the safety of SVRA visitors and staff members. OM Guideline 3.5 provides for the prevention of accidental fire ignition and the spread of wildfire to adjacent areas through monitoring of OHVs for spark arrestors and monitoring of fuel handling practices. OM Guideline 3.7 recommends that the adequate provision for and access of emergency personnel be considered during planning for development of new facilities.
OM Guideline 3.8 recommends continued coordination with state and local districts and agencies for emergency response. OM Guideline 3.9 provides that adequate, easily accessible supplies of emergency response materials are available on-site and staff members are adequately trained in emergency response practices.

OM Goal 3: Provide facilities and services that contribute to the safety and convenience of visitors and staff.

- **OM Guideline 3.5:** Prevent accidental fire ignition and spread of wildfire to adjacent areas by monitoring OHVs for spark arresters and by monitoring fuel handling practices. Limit fires to be contained within fire pits, noting such with signage, and provide campground facilities with fire pits for visitor use.

- **OM Guideline 3.7:** Plan and design facilities to allow ease of access for emergency personnel and to allow a clear view of visitors by State Parks peace officers (SPPOs). Locate restroom facilities in visible locations; avoid locating restroom facilities in remote locations.

- **OM Guideline 3.8:** Continue to coordinate with state and local districts and agencies for emergency response.

- **OM Guideline 3.9:** Ensure that supplies of emergency response materials kept on-site are adequate and easily accessible. Ensure that staff members are adequately trained in emergency response practices.

With implementation of these goals and guidelines, implementation of the General Plan would not substantially increase the existing fire protection services, nor would it result in the construction of new or expansion of existing fire service facilities. This impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

IMPACT 3.10-6 Increased Demand for Security and Emergency Services

Public safety services at Prairie City SVRA are described in Section 2.4.2 of the General Plan. Implementing the General Plan would provide additional recreational opportunities by creating a visitor center, overnight camping areas, enhanced spectator facilities, a multiuse special-events area, and additional OHV routes and trails. These new facilities would increase the area where visitors could recreate at Prairie City SVRA. Attendance is anticipated to increase over time, potentially resulting in increased demand for security and emergency response. However, future development of Prairie City SVRA would continue to be focused on community- and family-oriented OHV uses. The family-focused atmosphere and focus on novice and intermediate riding conditions at the SVRA would help to minimize the risk of potential emergency and security situations (e.g., high-risk challenges or high-speed collisions).

Security and first-responder medical aid at the SVRA is provided by SPPOs who patrol Prairie City SVRA during operating hours. Emergency services can be contacted by dialing 911, and radio communications are available to emergency responders at the site. Emergency calls are routed through the California Highway Patrol (CHP) or the State Parks Northern Communication Center (NORCOM) and are dispatched to CHP officers or to SPPOs from the Twin Cities District office located on-site.

The need for security and emergency services would likely increase slightly with implementation of the General Plan. Under typical operating conditions, however, the full-time SPPOs who currently serve Prairie City SVRA would be sufficient to meet this need. SPPOs would continue to patrol the SVRA during open hours, and would be the first to respond to security and medical emergencies. The CHP would be available on an as-needed basis.

Adherence to OM Goal 3 and OM Guidelines 3.7, 3.8, and 3.9 (shown in Impact 3.10-5) in the General Plan would ensure the availability of facilities and services that would contribute to the safety of visitors and staff members.

Because the demand for security and emergency services would not increase substantially, implementation of the General Plan would not result in the need for new or expansion of existing emergency services facilities. Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.10.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the Prairie City SVRA General Plan and implementation of resulting actions would not result in significant impacts related to public services and utilities.

3.10.6 MITIGATION MEASURES

No significant impacts related to public services and utilities would result with implementation of the General Plan and no mitigation is required.

3.11 TRANSPORTATION AND TRAFFIC

This section describes existing roadways in the planning area, as well as intersection and roadway volumes and levels of service (LOS). It also characterizes traffic levels at Prairie City State Vehicular Recreation Area (SVRA) and the regional distribution of traffic related to Prairie City SVRA's operation. The analysis in this section is based on the traffic data provided in Appendix D. In addition, this section discusses the state and local regulatory framework and analyzes the potential impacts of implementing the Prairie City SVRA General Plan on transportation and traffic.

3.11.1 EXISTING SETTING

For the analysis of transportation and traffic impacts in this section, the study area limits include intersections and roadway segments in the vicinity of Prairie City SVRA that provide both regional access and direct local access to the SVRA. The traffic analysis describes the operational characteristics of the selected intersections and roadway segments identified in this section.

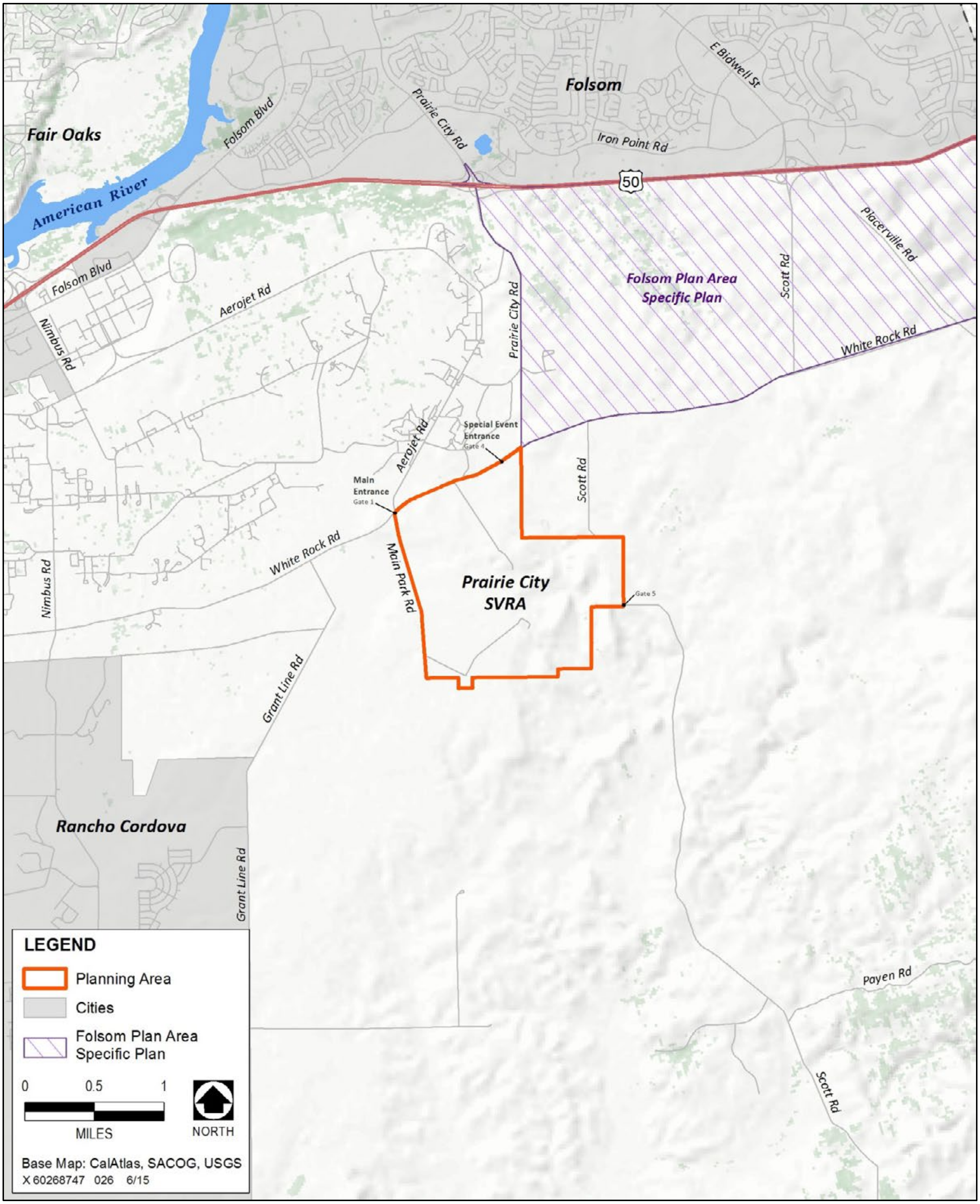
EXISTING ROADWAYS

The planning area is in a rural location and has a relatively simple roadway network. Figure 3.11-1 displays the location of Prairie City SVRA and the surrounding circulation system.

U.S. Highway 50 (U.S. 50) is an east-west freeway that extends from the Interstate 80 junction in West Sacramento to Canal Street in Placerville, from which it continues as a highway across the Sierra Nevada to South Lake Tahoe and Nevada. U.S. 50 is an eight-lane freeway west of Sunrise Boulevard, and between Sunrise Boulevard and Folsom Boulevard it is an eight-lane freeway with six general (mixed-flow) lanes and two high-occupancy vehicle lanes. Between Folsom Boulevard and El Dorado Hills Boulevard, U.S. 50 is a six-lane freeway with four general (mixed-flow) lanes and two high-occupancy vehicle lanes.

Jackson Highway (State Route 16) is a two-lane highway that extends from Folsom Boulevard east of Power Inn Road east through unincorporated areas of Sacramento County and into Amador County.

White Rock Road provides east-west circulation south of U.S. 50 and extends east from Zinfandel Drive in Rancho Cordova to Latrobe Road in El Dorado County. In the vicinity of Prairie City SVRA, White Rock Road is currently a four-lane arterial road and carries approximately 8,400 daily vehicles with 8 percent trucks. The White Rock Road Improvement Project (completed in early 2014) widened White Rock Road from Grant Line Road to Prairie City Road, a distance of approximately 2 miles. The roadway was widened to a four-lane divided arterial standard with auxiliary turn lanes at the White Rock Road/Grant Line Road and White Rock Road/Prairie City Road intersections. Traffic signals have also been installed at these two intersections. A center left-turn lane was provided at the main entrance to Prairie City SVRA, and a Class II bikeway (bike lanes) was installed on White Rock Road from Grant Line Road to Prairie City Road. A segment of White Rock Road west of the SVRA was realigned to eliminate several substandard horizontal curves.



Source: Data compiled by AECOM in 2014

Figure 3.11-1. Prairie City SVRA and Roadways in the Vicinity

Prairie City Road extends north from White Rock Road into the city of Folsom and provides access to U.S. 50, approximately 3 miles north of Prairie City SVRA. South of U.S. 50, Prairie City Road is a two-lane, rural, 24-foot-wide facility that follows to the rolling terrain and carries approximately 4,500 daily vehicles. A four-lane overcrossing of U.S. 50 is provided with signalized intersections at the eastbound and westbound freeway ramp intersections.

The **SVRA main access road** (Main Park Road) is a two-lane paved road that extends south from White Rock Road and enters the park at its northwest corner. This road provides primary vehicular access to Prairie City SVRA. Prairie City SVRA's entry booth/ranger station is located approximately 0.5 mile south of White Rock Road. The access road is gated when the park is closed. The gate is located 140 feet south of White Rock Road and adequate area is provided for a vehicle to turn around if the gate is closed. The access road is stop sign controlled at White Rock Road. Satisfactory intersection sight distance is provided at the access road approach to White Rock Road.

Grant Line Road is a two-lane rural facility that extends south from White Rock Road through rural areas of Sacramento County. The roadway provides a link to State Route 16 in the south and ultimately connects to the city of Elk Grove.

Scott Road is a north-south, two-lane rural road extending from U.S. 50 at East Bidwell Street to White Rock Road, through the *Folsom Plan Area Specific Plan* area. Another segment of Scott Road extends south from White Rock Road to Latrobe Road. The *Sacramento County General Plan of 2005–2030* identifies several roadways in the rural portions of the county that are considered scenic. Scott Road is designated as a scenic corridor from White Rock Road south to Latrobe Road (Sacramento County Community Planning & Development Department 2014; Lenzie and Singh, pers. comms., 2015).

The following intersections and roadway segments were studied to identify the potential effects of changes in the planning area.

Intersections:
Prairie City Road/U.S. 50 westbound ramps
Prairie City Road/U.S. 50 eastbound ramps
White Rock Road/Prairie City Road
White Rock Road/special event access (Gate 4)
White Rock Road/main park access (Gate 1)
Grant Line Road/White Rock Road

Roadway segments:
White Rock Road—Grant Line Road to main park access (Gate 1)
White Rock Road—main park access (Gate 1) to Prairie City Road
Prairie City Road—White Rock Road to U.S. 50
Main park access road south of White Rock Road

EXISTING TRANSIT NETWORK

Although numerous transit routes and services operate in the urbanized areas of Sacramento County, Prairie City SVRA is not served by any local or regional transit providers. The nearest transit stop is at Prairie City Road and Iron Point Road, located north of U.S. 50 approximately 2.5 miles north of the park. In the urbanized areas, local and regional transit service is provided by the Sacramento Regional Transit District, the City of Folsom's Transit Division (Folsom Stage Lines), and El Dorado County Transit Authority.

EXISTING BICYCLE AND PEDESTRIAN NETWORK

The existing bicycle network includes recently completed Class II bikeway (bike lane) facilities along White Rock Road.

Pedestrian facilities, including sidewalks and crosswalks, are not provided on adjacent streets. Pedestrian volumes in the area are negligible and visitors to Prairie City SVRA are unlikely to walk to the park.

EMERGENCY VEHICLE ACCESS

U.S. 50 provides regional emergency access to Prairie City SVRA, and Prairie City Road and White Rock Road provide direct access. The main entrance (Gate 1) is located 1 mile west of the White Rock Road/Prairie City Road intersection. The special event entrance (Gate 4), located just west of the intersection with Prairie City Road, also can provide emergency access from White Rock Road. However, recent improvements along White Rock Road limit the ability of vehicles to turn west from this exit. Secondary access (Gate 5) is provided from Scott Road at the southeast corner of the Prairie City Motocross Track. Prairie City SVRA is dominated by open terrain that is accessible by law enforcement vehicles and most emergency response vehicles.

State Parks provides on-site fire protection equipment consisting of a 4,000-gallon water truck, one bulldozer, and seven 6-inch fire hydrants. Additional fire protection services to Prairie City SVRA are provided by the Sacramento Metropolitan Fire District and the California Department of Forestry and Fire Protection (CAL FIRE). Sacramento Metropolitan Fire District Station 63 at 12395 Folsom Boulevard, Rancho Cordova, would be the first responder to fires at the SVRA and Station 66 at 3180 Kilgore Road, Rancho Cordova, would be the second responder. Emergency response times from Station 63 and Station 66 to Prairie City SVRA are approximately 10 minutes and 13 minutes, respectively. CAL FIRE provides wildland fire protection at Prairie City SVRA. The El Dorado Station near Placerville is CAL FIRE's primary station for the SVRA. Emergency response time is estimated at 25 minutes.

EXISTING ROADWAY AND INTERSECTION LEVELS OF SERVICE

Appendix D, “Traffic Report,” contains data on existing intersection and roadway traffic volumes that were collected to support this analysis. Traffic counts were collected to establish existing traffic volumes during the weekday p.m. and Saturday midday periods with typical open park attendance and local traffic flows. To represent traffic during special events, peak-hour and daily traffic counts were conducted on a Saturday in conjunction with the Hangtown Motocross Classic professional motocross event at Prairie City SVRA. This event typically attracts approximately 25,000 spectators.

Existing roadway and intersection LOS are also provided in detail in Appendix D. Study intersections experience satisfactory LOS A–C operations during both the weekday p.m. and Saturday midday peak hours, based on operating standards for individual locations and associated jurisdictions (discussed in Section 2.7.3.8, “Transportation and Traffic Regulations,” of the General Plan). The special event access to Prairie City SVRA located west of Prairie City Road was closed during these count periods.

LOS for roadway segments is determined by calculating a volume-to-capacity (V/C) ratio. The V/C ratio is developed by comparing roadway traffic volumes to roadway capacity. As shown in Appendix D, White Rock Road and the main access road to Prairie City SVRA (Main Park Road) operate well within capacity and experience LOS A operations. Prairie City Road north of White Rock Road operates at LOS D and LOS C during the weekday p.m. and Saturday midday peak hours, respectively. This is also within the acceptable standards identified for Sacramento County and the city of Folsom (discussed in Section 2.7.3.8, “Transportation and Traffic Regulations,” of the General Plan).

Traffic counts conducted at the main access road to Prairie City SVRA (Main Park Road) indicate a traffic volume of 29 vehicles (30 percent entering the SVRA and 65 percent departing) during the weekday p.m. peak hour (4–6 p.m.), with a weekday daily two-way volume of 300 vehicles. On Saturday (midday, between 11 a.m. and 1 p.m.), counts indicate a traffic volume of 127 vehicles (60 percent entering the SVRA and 40 percent departing), with a weekend daily two-way volume of 1,100 vehicles.

Field observations made for special event periods indicate that during the morning arrival period, which peaks around 11 a.m., traffic operates relatively well without long periods of congestion on the adjacent roadway system. Departing traffic peaks between 5 and 6 p.m. The event’s conclusion results in a large outflow of traffic from Prairie City SVRA that occurs over a shorter time period than morning arrival conditions. Departing traffic generates short periods of congestion on the adjacent street system. However, stop-and-go traffic conditions are primarily limited to on-site traffic as motorists exit the parking areas and access the designated on-site travel corridors.

A traffic management plan is implemented in conjunction with certain special events to channelize traffic in different directions away from the park and minimize conflicting traffic movements on the adjacent street system. Rangers and California Highway Patrol personnel direct traffic at key intersections adjacent to Prairie City SVRA, specifically the Gate 1, Gate 4, and Prairie City Road intersections with White Rock Road. During peak departure periods, traffic exiting the main park access (Gate 1) is directed to the west on White Rock Road. Traffic exiting the special event gate (Gate 4) is directed to the east on White Rock Road and then north onto Prairie City Road. A median with an access gate, constructed as part of the White Rock Road Improvement Project, allows vehicles to exit east on White Rock Road but prevents them from turning west out of this entrance. During certain special events, an additional access point at Scott Road on the east side of Prairie City SVRA (Gate 5) is open for use. Traffic exiting this access point and traveling north on Scott Road is then directed east onto White Rock Road. The resulting traffic patterns minimize conflicts at area intersections and facilitate traffic flow on the adjacent street system.

As shown in Appendix D, intersections in the study area for the Saturday special event condition have an LOS of A or B during the morning peak arrival period. During the evening departure period, LOS drops to a level of C at the northbound approach to the intersection of White Rock Road and the special event access gate, and to LOS F at the northbound approach to the intersection of White Rock Road and the main park access gate. Existing roadway LOS ranges from LOS A to LOS E during Saturday special event periods. The daily roadway-volume threshold capacities employed by Sacramento County and used for this analysis include a peak-hour factor typical of average daily traffic conditions. In this case, traffic from special events results in large hourly peaks compared to typical average traffic conditions. Therefore, although identified daily volumes are within the capacity of each of the roadways, LOS during the peak traffic periods would be worse than identified, because the percentage of daily volume occurring in the peak hour is much higher than for typical conditions.

Traffic counts conducted at the main access road to Prairie City SVRA (Main Park Road) indicate a traffic volume of 29 vehicles (30 percent entering the SVRA and 65 percent departing) during the weekday p.m. peak hour (4–6 p.m.), with a weekday daily two-way volume of 300 vehicles. On Saturday (midday, between 11 a.m. and 1 p.m.), counts indicate a traffic volume of 127 vehicles (60 percent entering the SVRA and 40 percent departing), with a weekend daily two-way volume of 1,100 vehicles.

3.11.2 REGULATORY SETTING

Section 2.7.3.8, “Transportation and Traffic Regulations,” of the Prairie City SVRA General Plan includes a discussion of state, regional, and local plans, policies, regulations, and laws applicable to transportation and traffic in the planning area.

3.11.3 THRESHOLDS OF SIGNIFICANCE

The significance criteria for this analysis are based on the environmental checklist in Appendix G of the California Environmental Quality Act (CEQA) Guidelines, as amended, and on the Sacramento County and City of Folsom thresholds listed separately below. Based on CEQA Guidelines Appendix G, implementation of the Prairie City SVRA General Plan, including construction and operation of the potential facilities and use areas, would have a significant impact on transportation and traffic if it would:

- 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 but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- conflict with an applicable congestion management program, including but not limited to 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; or
- conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

A traffic impact may be considered significant if it renders an unacceptable LOS on a street segment, at a signalized intersection, or at a stop sign–controlled intersection, or if it worsens already unacceptable conditions.

For this study, the significance of a project’s impact on traffic operating conditions is based on a determination of whether the resulting LOS is considered acceptable. An impact of implementing the Prairie City SVRA General Plan on traffic conditions is considered significant if implementation of the General Plan would cause LOS to change from levels considered acceptable to levels considered unacceptable, or would worsen already unacceptable LOS as described below.

INTERSECTIONS AND ROADWAY SEGMENTS—SACRAMENTO COUNTY

As discussed previously, Sacramento County’s LOS standard for urban areas has been used for this analysis at the intersections of White Rock Road with Grant Line Road and with Prairie City SVRA access roads located in unincorporated Sacramento County. For signalized intersections and roadway segments in urban locations, an impact is considered significant by Sacramento County if the project would cause an intersection or roadway segment to change from LOS E or better to LOS F. For signalized intersections and roadway segments that currently operate, or would operate in the future without the project, at unacceptable LOS F, an impact is considered significant if the project would increase the V/C ratio by more than 0.05.

For unsignalized intersections in urban locations, an impact is considered significant by Sacramento County if the project would cause a change from LOS E or better to LOS F, and would also cause the intersection to meet a traffic signal warrant. For unsignalized intersections that currently operate, or would operate in the future without the project, at an unacceptable LOS, an impact is considered significant if the project would increase the delay by more than 5 seconds at a movement/approach at an intersection that also meets a traffic signal warrant.

INTERSECTIONS—CITY OF FOLSOM

As discussed previously, the City of Folsom's LOS D standard has been used for this analysis at Prairie City Road and the Prairie City Road/White Rock Road intersection. For intersections operating or projected to operate beyond the identified standard, an impact is considered significant by the City of Folsom if project traffic would increase the peak-period average delay by 5 seconds or more.

BICYCLE AND PEDESTRIAN FACILITIES

As specified in Sacramento County's *Traffic Impact Analysis Guidelines* (Sacramento County 2004), a project is considered to have a significant impact on bicycle or pedestrian facilities if it would:

- eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use;
- interfere with the implementation of a planned bikeway as shown in the Bicycle Master Plan, or be in conflict with the Pedestrian Master Plan; or
- result in unsafe conditions for bicyclists or pedestrians, including unsafe bicycle/pedestrian, bicycle/motor vehicle, or pedestrian/motor vehicle conflicts.

3.11.4 ENVIRONMENTAL EVALUATION

EVALUATION METHODOLOGY

The evaluation of potential impacts related to transportation and traffic considered long-term forecasted conditions that take into account projected population growth in the local counties and implementation of the Prairie City SVRA General Plan. Cumulative conditions have been evaluated within the context of future traffic conditions projected for a year 2030 planning horizon.

Capacity analyses were conducted for intersections and roadway segments in accordance with Sacramento County, City of Folsom, and Caltrans practices (see Section 2.7.3.8, "Transportation and Traffic Regulations," of the Prairie City SVRA General Plan). Intersection-based capacity analyses were conducted and peak-hour traffic volumes were collected to evaluate the ability of intersections to accommodate traffic volumes during peak travel periods. Roadway segment–based capacity analyses were conducted using daily traffic volumes to evaluate the adequacy of the number of roadway lanes between major intersections. The classifications for each roadway that are contained in Sacramento County's *Traffic Impact Analysis Guidelines* have been used for this traffic impact study.

With regard to signal warrants, unsignalized intersections operating at poor LOS (i.e., LOS E and/or F), depending on location/jurisdiction, have been evaluated using the peak-hour warrant (Warrant Number 3) as presented in the *California Manual on Uniform Traffic Control Devices for Streets and Highways, 2012 Edition* (Caltrans 2012). This warrant was applied where the minor street experiences long delays in entering or crossing the major street for at least 1 hour of the day.

Background Traffic Volume Forecasts

The traffic volume forecasts for a year 2030 planning horizon used projections of roadway and intersection volumes derived from other planning documents prepared for the area. The primary source is the *Cordova Hills Traffic Analysis* (DKS Associates 2011). The development and traffic forecasts used for the cumulative-year scenario are consistent with the development forecast presented in the Sacramento Area Council of Governments' (SACOG's) currently adopted *Metropolitan Transportation Plan*. SACOG's development forecast includes reasonable and foreseeable projects neighboring the study area such as Cordova Hills, SunRidge, Suncreek, Arboretum, Rio del Oro, Westborough, Easton/Glenborough, and the Folsom South of U.S. 50 Specific Plan. In addition, truck trips from the proposed quarries in eastern Sacramento County are included in cumulative conditions.

The primary travel forecasting tool used for these future-year travel forecasts is the Sacramento Metropolitan Travel Demand Model (SACMET). This model has provided the basis for other recent regional studies, corridor analyses, and environmental documents. SACOG maintains SACMET, updating base-year and forecast-year demographic data and networks and working with a technical advisory committee to periodically update and enhance the model.

These sources have been used to identify projected increases in weekday peak-hour and daily traffic volumes in the traffic study area. For the Saturday analysis, the existing relationship between weekday peak-hour and Saturday traffic volumes has been used to forecast Saturday volumes for the year 2030 planning horizon.

Future Roadway Improvements

The evaluation of potential impacts identified planned roadway improvements in the traffic study area that have been determined by applicable planning documents to support projected long-term traffic conditions (to which implementation of the Prairie City SVRA General Plan would not significantly contribute, as discussed in Impact 3.11-1 below). These planned roadway improvements in the study area include:

- widening White Rock Road from Grant Line Road to Scott Road to six lanes,

- widening Prairie City Road from U.S. 50 south to the planned Easton Valley Parkway to six lanes consistent with the Folsom Sphere of Influence, and

- widening Prairie City Road from the planned Easton Valley Parkway south to White Rock Road to four lanes.

Capital SouthEast Connector Project

The future roadway improvements listed above are part of the Capital SouthEast Connector Project (Connector). The Connector would create an alternate transportation route south of U.S. 50 to serve communities in southeast Sacramento County and El Dorado County. It would connect Elk Grove to El Dorado Hills, with Rancho Cordova, Folsom, and unincorporated areas of Sacramento County (including Prairie City SVRA) in between. The 34-mile Connector would connect Interstate 5 south of Elk Grove to U.S 50 at the new Silva Valley Parkway interchange just east of El Dorado Hills.

The Connector proposes to accommodate travel by bicycles, pedestrians, and transit in addition to truck and automobile travel. Along the expressway segments of the Connector (which include White Rock Road north of Prairie City SVRA), a separated 12-foot-wide Class I bikeway (bike path) with graded shoulders would be installed. As defined by the California Streets and Highway Code, a Class I bikeway (bike path) provides a completely separate right-of-way for exclusive use by bicycles and pedestrians.

Transit Master Plan for Folsom Plan Area Specific Plan

The *Transit Master Plan for Folsom Plan Area Specific Plan* (Fehr & Peers 2010) proposes a transit corridor through the *Folsom Plan Area Specific Plan* area that would extend from Prairie City Road on the west to the southeast corner of the plan area at the intersection of White Rock Road and Placerville Road. A potential future transit stop would be located at White Rock Road/Scott Road, northeast of Prairie City SVRA.

Year 2030 Prairie City SVRA Traffic Volumes

For this analysis, it is assumed that attendance at Prairie City SVRA will rise with population growth in the surrounding region. Based on the California Department of Finance’s demographic projections for 2010 through 2060, Sacramento County is expected to experience an average annual growth rate of 0.89 percent. El Dorado County is expected to experience an average annual growth rate of slightly more than 1.02 percent (DOF 2013).

Although implementing the General Plan would expand the off-highway vehicle (OHV) options at Prairie City SVRA, and attendance will likely grow naturally, a “bump” in attendance would not likely occur solely as a result of General Plan adoption and the associated new opportunities. This lack of a bump would be consistent with the observations at Hollister Hills SVRA, where overall attendance did not increase after the Renz Property was opened in 2008. Although the Renz Property may have drawn additional riders, any effect was negated by the overall effect of the economic downturn, and attendance at Hollister Hills SVRA was actually lower in 2009 than in 2008. Based on this example, it appears that general economic conditions in the region have a larger effect than new facility offerings on short-term attendance. Furthermore, the expanded offerings would likely be brought online over time, and the Prairie City SVRA General Plan does not make schedule estimates that could be used to establish a “buildout” date.

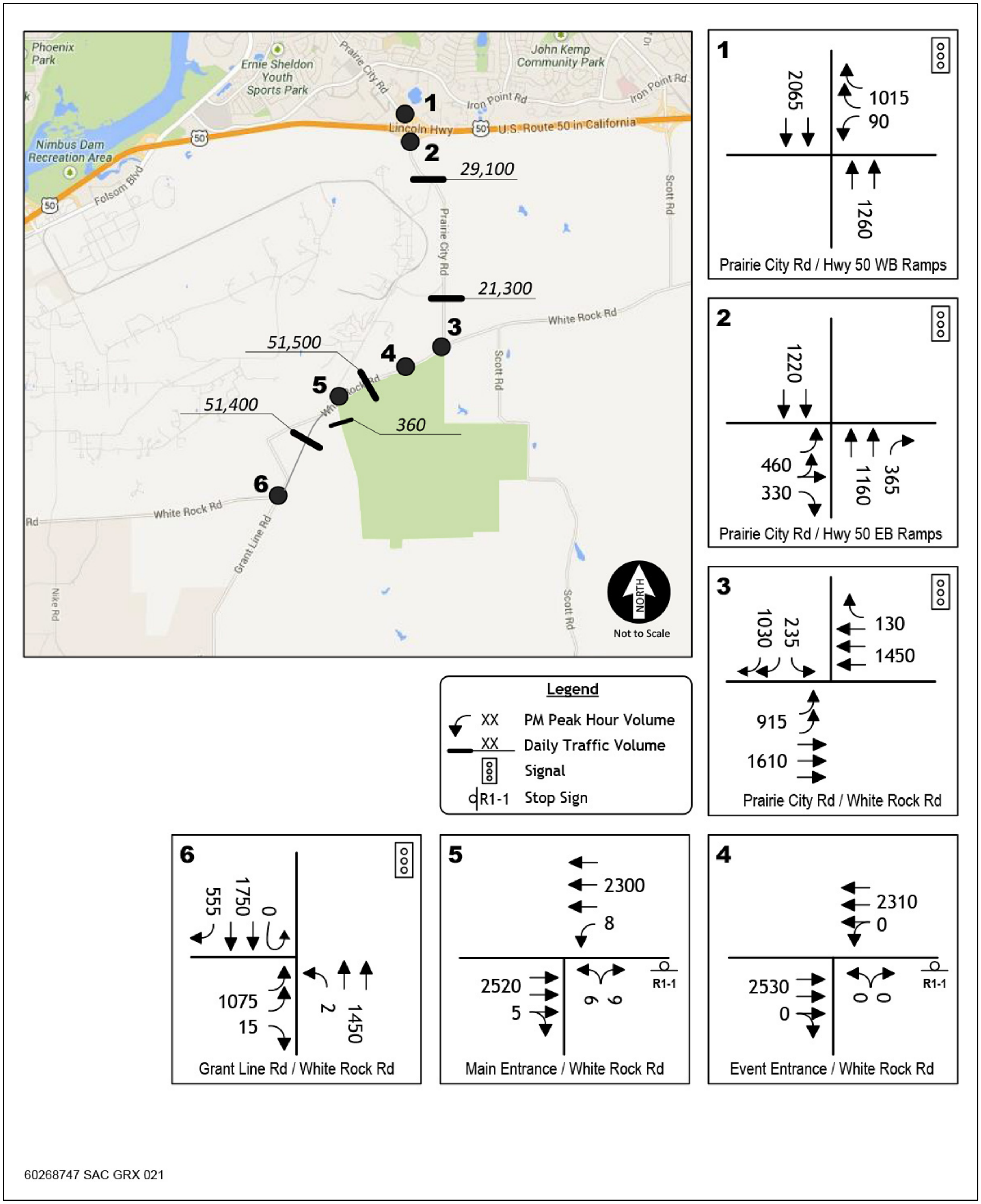
Projected population growth and attendance data collected by local park staff have been used to project year 2030 traffic conditions at Prairie City SVRA. Over the 24-year period from January 1990 to December 2013, Prairie City SVRA hosted an average of 107,009 recreational and special-event visitors each year. Attendance grew steadily and peaked in 2004 at 193,330 visitors. Attendance declined between 2005 and 2012 before rebounding in 2013. Visitor attendance in 2013 consisted of 65,004 recreational visitors and 76,697 special-event visitors for a total of 141,701 visitors.

During 2013, most visits to Prairie City SVRA occurred from October through May. This time frame includes the time period when red-sticker vehicles are allowed to ride at the SVRA (October through April). It also includes two of the largest special events held at the SVRA: the annual Hangtown Motocross Classic, held in May, and the annual Visitor Appreciation Day, held in October. This attendance pattern is considered typical for Prairie City SVRA.

The 2013 attendance of 141,701 visitors and associated 2013 traffic counts have been used as the CEQA baseline. The forecasted annual population growth factor for El Dorado County, the county east of the planning area, with a higher forecasted growth rate than that for Sacramento County, was used as a conservative estimate of future visitation. Using the baseline and the El Dorado County growth rate of approximately 1.02 percent per year to account for regional growth in demand for facilities, 168,481 visitors to the SVRA are estimated in 2030. Similarly, applying the El Dorado County growth rate of approximately 1.02 percent to the 2013 traffic counts at the main park entrance would yield an average of 357 weekday vehicles, 1,308 Saturday vehicles, and 6,872 special-event vehicles during the red-sticker season in 2030. Table 3.11-1 summarizes the resulting number of trips projected to be generated by Prairie City SVRA under year 2030 conditions. Figures 3.11-2 through 3.11-4 display total projected traffic volumes for year 2030 at intersections and roadway segments in the study area.

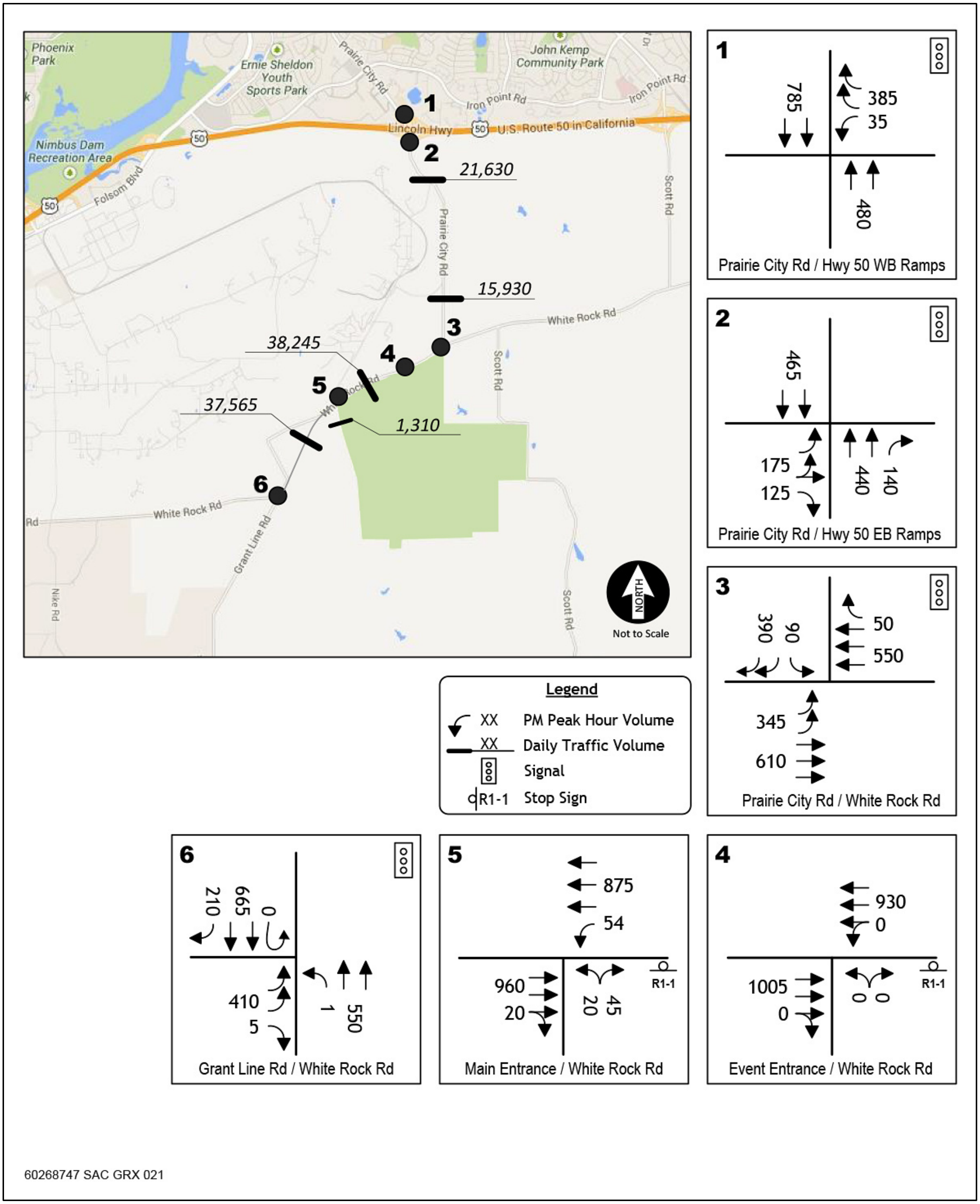
ISSUES NOT DISCUSSED FURTHER IN THIS DEIR

Implementation of the Prairie City SVRA General Plan would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, and would not result in a change in air traffic patterns; therefore, these topics are not addressed further in this section.



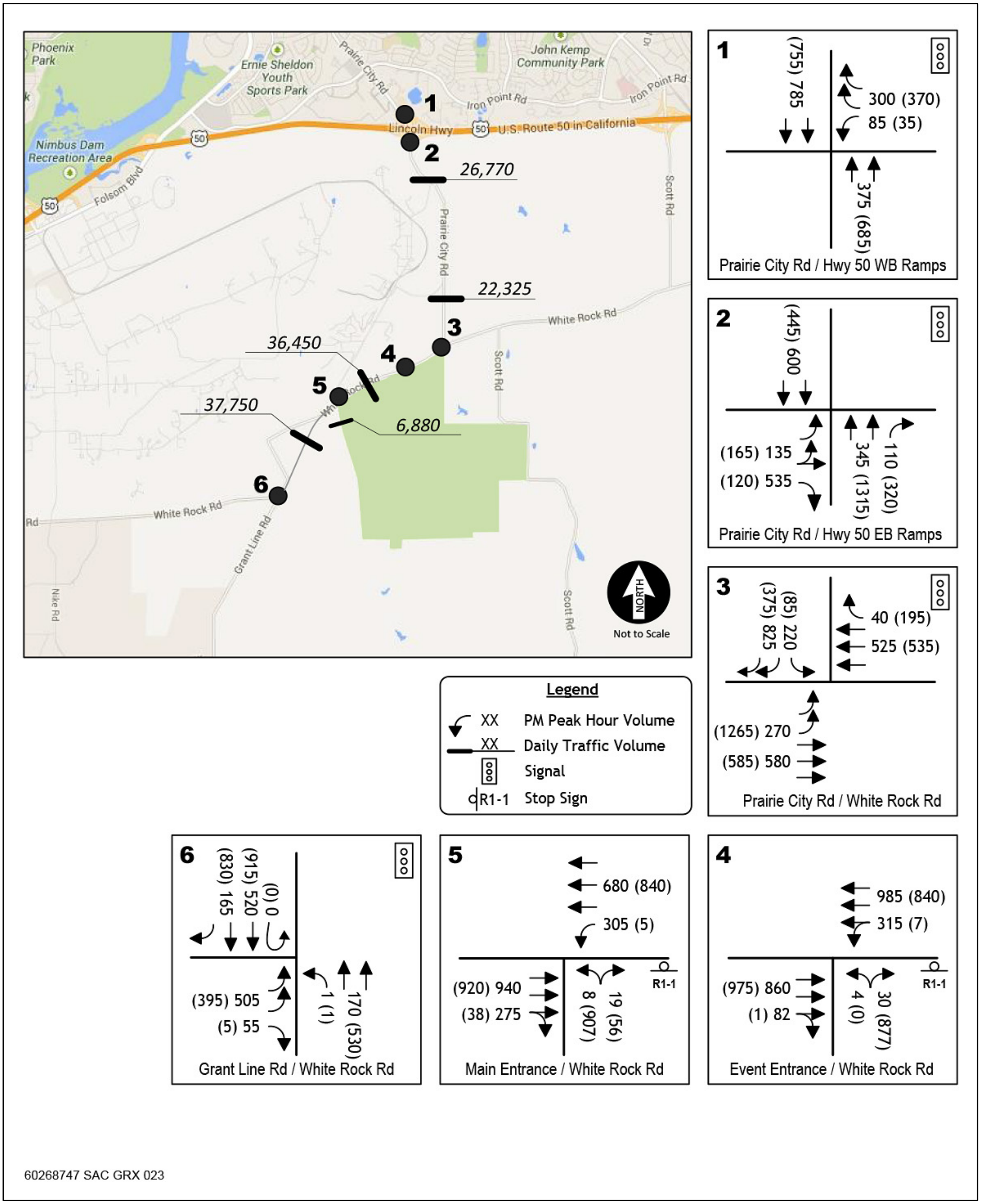
Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

Figure 3.11-2. Year 2030 Traffic Volumes, Weekday PM Peak Hour



Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

Figure 3.11-3. Year 2030 Traffic Volumes, Saturday Midday Peak Hour



Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

Figure 3.11-4. Year 2030 Traffic Volumes, Saturday Special Event

Table 3.11-1. Year 2030 Traffic Volumes at Prairie City SVRA

	Weekday				Saturday			
		P.M. Peak Hour				Midday Hour		
Location	Daily	In	Out	Total	Daily	In	Out	Total
Prairie City SVRA								
Existing Volume	300	35%	65%	29	1,100	60%	40%	127
Increase to Year 2030	57	35%	65%	6	208	60%	40%	24
Total Year 2030 Volume	**357**			**35**	**1,308**			**151**

Notes: SVRA = State Vehicular Recreation Area
Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

GENERAL PLAN IMPACT ANALYSIS

IMPACT 3.11-1 Potential for Degradation of Year 2030 Roadway and Intersection Levels of Service

Tables 3.11-2 and 3.11-3 summarize projected peak-hour intersection and daily roadway LOS in the traffic study area. Study intersections are projected to operate satisfactorily within identified operating standards for each intersection during both the weekday p.m. and Saturday midday peak hours. The main park access with White Rock Road is projected to experience delays indicative of LOS E during the weekday p.m. peak hour for vehicles exiting the park to White Rock Road; however, this is within acceptable Sacramento County standards. Additionally, traffic volumes exiting the park are projected to continue to be relatively minor, and peak-hour signal warrant criteria would not be met at this location during the weekday p.m. peak hour under year 2030 conditions.

Roadway segments in the study area also are projected to operate satisfactorily within identified operating standards for each segment both during the weekday and on Saturday. The additional traffic from Prairie City SVRA projected to result from implementation of the General Plan would be very minor compared to the forecast increase in background traffic on area roads for the year 2030. As an example, additional traffic generated by Prairie City SVRA on a weekday would account for less than 0.1 percent of total daily traffic volumes projected for White Rock Road adjacent to the site, with Saturday traffic accounting for 0.4 percent of total daily traffic volumes.

This impact of the General Plan would be **less than significant**.

Mitigation Measures: No mitigation is required.

Table 3.11-2. Year 2030 Intersection Levels of Service

			Weekday P.M. Peak		Saturday Midday	
Location	Control	LOS Policy	LOS	V/C or Delay (sec)	LOS	V/C or Delay (sec)
Prairie City Road/U.S. 50 WB ramps	Signal	D	D	35.1 sec	B	14.1 sec
Prairie City Road/U.S. 50 EB ramps	Signal	D	B	15.8 sec	B	12.6 sec
Prairie City Road/White Rock Road	Signal	D	C	20.6 sec	B	15.6 sec
White Rock Road/special event access:	NB Stop	E				
- WB left turn			*	–	*	–
- NB approach			*	–	*	–
White Rock Road/main park access:	NB Stop	E				
- WB left turn			D	25.8 sec	B	10.5 sec
- NB approach			E	49.9 sec	B	13.2 sec
White Rock Road/Grant Line Road	Signal	E	E	0.95	A	0.36

Notes: EB = eastbound; LOS = level of service; NB = northbound; sec = seconds; V/C = volume-to-capacity ratio; WB = westbound

* Access not in use.

Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

Table 3.11-3. 2030 Roadway Levels of Service

				Weekday			Saturday		
Location	Number of Lanes	LOS Policy	Daily Capacity	Daily Volume	V/C	LOS	Daily Volume	V/C	LOS
White Rock Road:									
- West of main park access	Six-lane arterial	E	54,000	51,400	0.95	E	37,565	0.70	C
- East of main park access	Six-lane arterial	E	54,000	51,500	0.95	E	38,245	0.71	C
Prairie City Road:									
- South of U.S. 50	Six-lane arterial	D	54,000	29,100	0.53	A	21,630	0.40	A
- North of White Rock Road	Four-lane arterial	D	36,000	21,300	0.59	A	15,930	0.44	A
Main park access:									
- South of White Rock Road	Two-lane rural	E	11,000	360	0.03	A	1,310	0.12	B

Notes: LOS = level of service; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity ratio

Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

IMPACT 3.11-2 Potential for Special Events to Adversely Affect Peak-Hour and Daily Traffic Volumes, On-Site Parking, Circulation, or Bicyclist or Pedestrian Safety or to Obstruct Emergency Access

Tables 3.11-4 and 3.11-5 summarize projected Saturday a.m. and p.m. peak-hour intersection and daily roadway LOS in the traffic study area in conjunction with a large special event (representative of the annual Hangtown Motocross Classic). Study intersections are projected to operate satisfactorily within identified operating standards for each intersection, with the exception of the main park access and the special-event access approaches to White Rock Road. The northbound approach at each of these locations is projected to operate at LOS F during the Saturday p.m. peak hour. However, this LOS assumes stop sign control of the northbound approaches to White Rock Road. The traffic management plan implemented in conjunction with large special events includes control of these intersections by State Parks peace officers (SPPOs) and California Highway Patrol officers to assist drivers exiting Prairie City SVRA and minimize delays for exiting motorists and motorists traveling on the adjacent street system. During peak departure periods, traffic exiting the main park access (Gate 1) is directed to the west on White Rock Road while traffic exiting the special event access (Gate 4) is directed to the east on White Rock Road. Implementation of turning restrictions at these locations would minimize conflicting traffic movements and placement of SPPOs and California Highway Patrol personnel to direct traffic at these locations would promote continuous mobility and prevent conflicts at these entries and exits.

Table 3.11-4. Year 2030 Intersection Levels of Service—Special Event

Location	Control	LOS Policy	Saturday A.M. Peak		Saturday P.M. Peak	
			LOS	V/C or Delay (sec)	LOS	V/C or Delay (sec)
Prairie City Road/U.S. 50 WB ramps	Signal	D	B	12.9 sec	B	13.9 sec
Prairie City Road/U.S. 50 EB ramps	Signal	D	C	20.8 sec	A	7.8 sec
Prairie City Road/White Rock Road	Signal	D	B	20.0 sec	B	15.9 sec
White Rock Road/special event access:	NB stop	E				
- WB left turn			B	13.5 sec	B	10.1 sec
- NB approach			C	23.2 sec	F	**
White Rock Road/main park access:	NB stop	E				
- WB left turn			C	18.0 sec	A	10.0 sec
- NB approach			C	16.4 sec	F	**
White Rock Road/Grant Line Road	Signal	E	A	0.41	B	0.68

Notes: EB = eastbound; LOS = level of service; NB = northbound; sec = seconds; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity ratio; WB = westbound

** – delay beyond the range of applicable equation for stop sign control.

Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

Table 3.11-5. Year 2030 Roadway Levels of Service—Special Event

Location	Number of Lanes	LOS Policy	Daily Capacity	Saturday Event		
				Daily Volume	V/C	LOS
White Rock Road:						
- West of main park access	Six-lane arterial	E	54,000	37,750	0.70	C
- East of main park access	Six-lane arterial	E	54,000	36,450	0.68	B
Prairie City Road:						
- South of U.S. 50	Six-lane arterial	D	54,000	26,770	0.50	A
- North of White Rock Road	Four-lane arterial	D	36,000	22,325	0.62	B
Main park access:						
- South of White Rock Road	Two-lane rural	E	11,000	6,880	0.62	E

Notes: LOS = level of service; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity ratio

Source: Data compiled by KD Anderson & Associates and provided to AECOM in 2014

Improvements to White Rock Road as identified to support year 2030 background traffic volumes, together with continued implementation of traffic control measures for large special events, would mitigate potential traffic-related impacts and improve traffic flow and safety relative to baseline conditions. Therefore, this impact is projected to be **less than significant**.

Roadway segments in the study area are projected to operate satisfactorily within identified operating standards for each segment during the Saturday special event a.m. and p.m. peak hours, assuming implementation of the traffic management plan.

Issues associated with both large and smaller special events include access management and management of on-site circulation and parking areas as a result of the relative increase in traffic and the higher proportion of larger vehicles (e.g., motor homes and vehicles towing trailers) typically generated by special events such as motocross races.

The larger turning radii and reduced maneuverability of the larger vehicles as compared to standard automobiles could lead to on-site parking and circulation issues if not adequately managed. The potential exists for conflicts between vehicular and bicycle traffic at Prairie City SVRA's access driveways on White Rock Road. Conflicts could occur when motorists fail to look for cyclists in the existing bike lanes before turning into or out of the driveway; fail to signal before and during a turn; fail to yield the right-of-way to bicyclists crossing the driveway; or turn across the path of bicyclists without properly assessing their speed. Additionally, vehicles entering/exiting the site may propel road debris, gravel, and loose aggregate into the bike lane, presenting a hazard to bicyclists. The presence of well-marked bicycle facilities, such as the Class 2 bike lanes on White Rock Road, serves to increase driver awareness to the possible presence of bicyclists, and substantially reduces the risk of vehicle/bicycle conflicts. Furthermore, the Prairie City SVRA General Plan's OM Guidelines 1.5, 3.1, 3.6, 3.7, 3.8, and 4.1 through 4.3 (shown below) include measures to address these issues.

OM Goal 1: Provide sustainable visitor services and infrastructure that encourage responsible visitor use of Prairie City SVRA and meet visitor needs.

- **OM Guideline 1.5:** Coordinate with Sacramento County and the Connector Joint Powers Authority and participate in planning efforts related to future roadway improvements.

OM Goal 3: Provide facilities and services that contribute to the safety and convenience of visitors and staff.

- **OM Guideline 3.1:** Provide signage to inform visitors of responsible OHV recreation practices and extreme temperature precautions. Provide signage that directs visitors to exit points for ease of egress in case of emergency. Clearly post the hours of operation, including seasonal changes, and enforce as applicable.

- **OM Guideline 3.6:** Design and maintain all access roads and entrances according to applicable safety standards.

- **OM Guideline 3.7:** Plan and design facilities to allow ease of access for emergency personnel and to allow clear view of visitors by SPPOs. Locate restroom facilities in visible locations; avoid locating restroom facilities in remote locations.

- **OM Guideline 3.8:** Continue to coordinate with state and local districts and agencies for emergency response.

OM Goal 4: Coordinate with special-event sponsors to ensure that special events are well managed and that appropriate visitor services are available.

- **OM Guideline 4.1:** Coordinate with sponsoring organizations regarding scheduling, operations, and management of special events. Issue a special-event permit to event coordinators that details sponsor obligations.

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

- **OM Guideline 4.3:** During special events, implement traffic control and parking measures. Specific measures may include clearly defined staging and unloading areas for OHVs, designated parking areas for large vehicles and trailers, defined parking lots for regular-sized vehicles, designated emergency vehicle parking and access routes, and barricades to direct vehicles and pedestrians. Provide travel and parking information in special-event publications.

With implementation of these General Plan guidelines, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

3.11.5 SUMMARY OF SIGNIFICANT IMPACTS

Adoption of the Prairie City SVRA General Plan and implementation of resulting actions would not result in significant impacts related to transportation and traffic.

3.11.6 MITIGATION MEASURES

No significant impacts related to transportation and traffic would result with implementation of the General Plan. Therefore, no mitigation is required.

4 CUMULATIVE ANALYSIS

4.1 INTRODUCTION

Section 15130 of the California Environmental Quality Act (CEQA) Guidelines requires that an environmental impact report (EIR) discuss the cumulative impacts of a project and determine whether 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, the effects of other current projects, and the effects of probable future projects (California Public Resources Code [PRC] Section 21083[b][2]). "Cumulative impacts" refers to two or more individual effects that, when considered together, are considerable or compound or increase other environmental impacts (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 reasonably foreseeable projects that are closely related to the proposed project.

For purposes of this draft environmental impact report (DEIR), the project would have a significant cumulative effect if:

- 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. A cumulative effect is "measurable" if the impact is noticeable or exceeds an established threshold of significance.

Section 15130(b) of the CEQA Guidelines states:

> The 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 which do not contribute to the cumulative impact.

4.2 GEOGRAPHIC SCOPE

The geographic area that could be affected by implementing the Prairie City State Vehicular Recreation Area (SVRA) General Plan varies depending on the type of environmental resource being considered.

Each section of this DEIR considers the specific geographic segment that is directly related to the individual topic addressed. For example, some air quality impacts are analyzed based on regional-scale growth; thus, a regional perspective must be used to assess cumulative air quality impacts. Other environmental topics, like noise, require consideration of a smaller, more localized area that surrounds the immediate project area. Table 4-1 presents the geographic scales associated with the different resources addressed in this DEIR analysis.

Table 4-1. Geographic Scope of Cumulative Impacts

Resource Issue	Geographic Scope of Impacts
Aesthetics	Local and regional
Air Quality	Local (carbon monoxide, particulate matter, air toxics) and air basin/regional (ozone and particulate matter)
Biotic Resources	Local and regional
Cultural Resources	Local and regional
Geology, Soils, Minerals, and Paleontological Resources	Local and regional
Greenhouse Gas Emissions	Global
Hazards and Hazardous Materials	Local
Hydrology and Water Quality	Local and regional areas within the same watershed and aquifer
Noise	Local
Public Services and Utilities	Local and regional
Transportation and Traffic	Local and regional

Source: Data compiled by AECOM in 2014

4.3 CUMULATIVE FORECASTING METHODOLOGY

Either the list method or the regional-growth-projections method can be used to determine the scope of related projects for the cumulative impacts analysis (CEQA Guidelines Section 15130). The list method involves preparing a list of past, present, and reasonably anticipated future projects that produce or would produce related or cumulative impacts, including those projects outside the control of the lead agency. The regional-growth-projections method involves preparing a summary of projections presented in an adopted general plan or in a related planning document designed to evaluate regional or areawide conditions.

Both approaches were used in this DEIR because although the Prairie City SVRA General Plan identifies specific land uses for a specific locality, the General Plan would be implemented in an area that has experienced and will continue to experience regional growth. This method allows for a thorough, project-based analysis of cumulative impacts within the defined plan area. However, certain issues that extend far beyond the project vicinity (e.g., air quality, greenhouse gas [GHG] emissions) also rely on projections.

4.3.1 REGIONAL GROWTH PROJECTIONS

Prairie City SVRA is located in unincorporated Sacramento County. As determined through visitor surveys, visitors to the SVRA are primarily from the local area; the median distance traveled to Prairie City SVRA by survey respondents was 13 miles (State Parks 2014a). Implementing the General Plan would enhance recreational opportunities for the surrounding community.

The regional growth projections considered for the General Plan included El Dorado County along with Sacramento County because of the close proximity of El Dorado County to the SVRA. Both counties are expected to experience population growth through 2060 (Table 4-2).

Table 4-2. Regional Growth Projections

Jurisdiction	Year			Total Increase, 2010–2060	Percent Change, 2010–2060	Percent Average Annual Growth Rate[1]
	2010	2040	2060			
Sacramento County	1,420,434	1,913,756	2,191,508	771,074	54	0.89
El Dorado County	180,921	263,579	297,972	117,051	65	1.02

Source: DOF 2013; data compiled by AECOM in 2014.

Attendance at Prairie City SVRA grew steadily from 1990 and peaked in 2004 at 193,330 visitors (State Parks 2014b). Attendance declined between 2005 and 2012 before rebounding in 2013 with 141,701 visitors. The decline could have been caused in part by the 2008 recession and the resulting decrease in disposable household incomes. In turn, the increase in visitation in 2013 could be the result of a recovering economy. Using 2013 attendance data and the El Dorado County growth rate of approximately 1.02 percent per year to account for regional growth in demand for facilities, 168,481 visitors are estimated to visit the SVRA in 2030.

This type of regional, local, and SVRA attendance growth has the potential to result in numerous environmental issues such as traffic congestion, degradation of air quality, loss of biological habitat, and degradation of water quality. This cumulative analysis considers the regional growth trends and the specific projects discussed below.

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[1] Average annual growth rates were calculated using the compound annual growth rate (CAGR) formula, $R = [(P(t_n)/P(t_o))^\wedge(1/t_n\text{-}t_o\text{-}1)]\text{-}1$, where R = the average annual growth rate, $P(t_n)$ = the population at the end of the period, $P(t_o)$ = the population at the beginning of the period, t_n = the year marking the end of the period, and t_o = the year marking the beginning of the period.

4.3.2 LIST OF CUMULATIVE PROJECTS IN THE VICINITY

Information about past, present, and reasonably foreseeable future projects and identified project impacts in the immediate vicinity of Prairie City SVRA was gathered from Cities of Folsom and Rancho Cordova, El Dorado County, and Sacramento County through review of available environmental documentation and consultation with planning staff members (conducted in December 2014). Figure 4-1 and Table 4-3 show a summary of project information and identified projects for these counties.

4.4 CUMULATIVE IMPACT ANALYSIS

As described above, the cumulative scenario for the various environmental disciplines differs depending on the potential area of effect. For example, the cumulative analysis for regional air quality considers impacts on the entire air basin because air quality impacts occur on a regional or basin-level scale, while the cumulative analysis for archaeology is limited to a local scale because the ground-disturbing activities would be local. The cumulative setting, limitations, and analysis for each discipline are discussed as appropriate below.

4.4.1 AESTHETICS

Visual resources can be either localized or of regional concern, depending on the aesthetic environment. The cumulative visual environment for Prairie City SVRA is the local area because the SVRA does not contain any visually dominant features and off-site views of the SVRA activity areas are limited to a small segment of Scott Road.

As shown in Figure 4-2, “Potential Facilities,” of the Prairie City SVRA General Plan, the General Plan proposes five use areas; a visitor center; overnight camping; a multiuse special-events area; enhanced spectator facilities; improved circulation; and a relocation of the ranger station, kart track, oval dirt track, and Twin Cities District office. The new potential facilities would be located in the interior of the SVRA, with the exception of the district office, which would be relocated near the main SVRA entrance, and improvements to circulation in the northeast portion of the SVRA.

If cottonwood, willow, and blue oak trees must be removed to accommodate the siting of specific facilities, the aesthetics of the planning area could be adversely affected. California native tree species including cottonwood, willow, and blue oak trees and native shrubs would be planted to maintain the planning area’s existing visual setting. Trees and shrubs also could be planted to provide visual separation between use areas. Implementing the Prairie City SVRA General Plan would not substantially change the existing visual character of the area. Motorists on White Rock Road would view the district office building after its relocation from the southwest corner of the SVRA to the intersection of White Rock Road and the SVRA’s main entrance road (Main Park Road). The one-story building would not substantially alter views for motorists on White Rock Road.

Table 4-3. Cumulative Projects

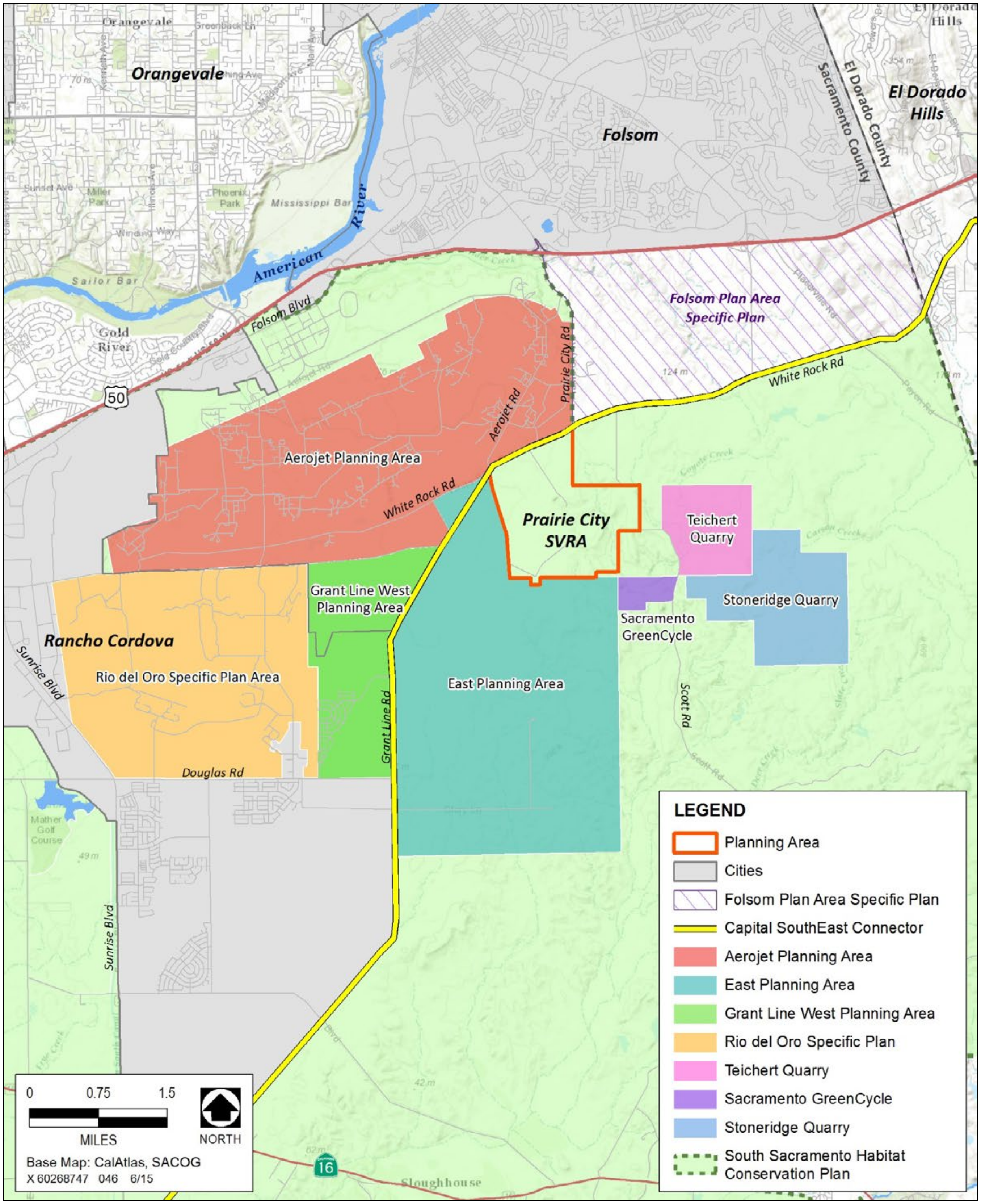
Project Name	Project Description	Location	Potential Impacts	Status
City of Folsom				
Folsom Plan Area Specific Plan	Mixed-use residential and commercial development including parks, open space, schools, and a transit corridor on approximately 3,600 acres. An anticipated full buildout of the *Folsom Plan Area Specific Plan* would include 10,210 new residential units and more than 5 million square feet of commercial development.	South of U.S. Highway 50, east of Prairie City Road, and north of White Rock Road.	Project issues include aesthetics; air quality; biological resources; greenhouse gas emissions; cultural resources; geology, soils, minerals, and paleontological resources; hazards and hazardous materials; hydrology and water quality; land use and agricultural resources; noise; public services; traffic and transportation; and utilities and service systems.	EIR/EIS certified and approved on June 14, 2011. Development agreements with landowners have been approved.
City of Rancho Cordova				
Aerojet Planning Area	Conceptual land use plan as identified in the *Rancho Cordova General Plan* that anticipates continuation of research and development, mining operations, remediation, and industrial and office uses on approximately 5,285 acres. The Aerojet Planning Area is currently outside of the city's boundaries.	Directly northwest of Prairie City SVRA.	Conceptual plan; therefore, potential impacts are unknown.	*Rancho Cordova General Plan* adopted in 2006.
East Planning Area	Conceptual land use plan as identified in the *Rancho Cordova General Plan* that anticipates mixed-use development and is expected to include 10,390 dwelling units. The East Planning Area is currently outside of the city's boundaries.	Southern border of Prairie City SVRA.	Conceptual plan; therefore, potential impacts are unknown.	*Rancho Cordova General Plan* adopted in 2006.
Grant Line West Planning Area	Conceptual land use plan as identified in the *Rancho Cordova General Plan* that anticipates mixed-use development with 3,393 dwelling units on approximately 1,307 acres. The Grant Line West Planning Area is currently outside of the city's boundaries.	West of Prairie City SVRA and adjacent to the East Planning Area.	Conceptual plan; therefore, potential impacts are unknown.	*Rancho Cordova General Plan* adopted in 2006.
Rio del Oro Specific Plan	Mixed-use development including approximately 11,601 dwelling units, parks, a 507-acre wetland preserve area, and two elderberry preserve areas, as well as new water, sewer, drainage, electrical, natural gas, and telecommunications services on approximately 3,828 acres. Mining activities are currently being conducted by Teichert Aggregates, Inc., on the eastern portion of the project site. These mining activities are not part of the Rio del Oro project and would continue under the individual permits already issued by Sacramento County and the City of Rancho Cordova or issued in the future.	Northeast of Sunrise Boulevard and Douglas Road.	Project issues include biological resources, circulation (traffic and alternative transportation methods), air quality, noise, land use concerns related to the location of the project site near Mather Airport, hydrology and water quality, hazardous materials, water supply, provision of public services, and provision of public utilities.	Notice of availability of recirculated EIR/EIS filed on June 24, 2008. Construction has not begun.
Unincorporated Sacramento County				
Teichert Quarry	Development of a hard-rock quarry to provide a new source of aggregate construction material. The project would involve mining of up to 7 million tons of material over 25 years on 584 acres. The quarry would include an aggregate processing facility, an administration complex, parking areas, an on-site access road, and various other stockpiles and processing areas.	East side of Scott Road (west) about 1 mile south of White Rock Road.	Project issues include aesthetics (significant and unavoidable cumulative impacts); agricultural resources; land use and planning; air quality; biological resources; greenhouse gas emissions; cultural resources; geology, soils, minerals, and paleontological resources; hazards and hazardous materials; hydrology and water quality; noise; and traffic and transportation.	Final EIR certified on October 27, 2010. Construction will not start for several years. The Barton Ranch property that was purchased by State Parks included a conveyor belt easement for Teichert's mining operations. Subsequently, State Parks conveyed an easement to Teichert along the southern boundary of the SVRA for a haul road to assist with Teichert's mining operations.

Table 4-3. Cumulative Projects

Project Name	Project Description	Location	Potential Impacts	Status
Sacramento GreenCycle	Recycling of up to 600 tons of residential garden waste into usable compost until 2030 on 580 acres.	On Kiefer Landfill property on the east side of Grant Line Road north of Kiefer Boulevard.	Project issues include aesthetics (significant and unavoidable cumulative impacts); traffic and circulation, construction air quality; greenhouse gas emissions; noise; wildfire; operational water quality; biological resources; hydrology and water quality; agriculture; and cumulative impacts associated with land use, odors, public services, geology and soils, operational air quality (emissions of reactive organic gases and toxic air contaminants), and cultural resources.	Notice of determination for final EIR recorded on March 17, 2010. Construction has been delayed.
Stoneridge Quarry	A hard-rock aggregate production facility that would mine up to 6 million tons over 100 years. The project would consist of surface mining operations, associated processing and ancillary facilities, and final reclamation plans on 1,360 acres.	Approximately 1.5 miles south of White Rock Road and approximately 500 feet east of Scott Road.	Project issues include land use; aesthetics; public safety and hazardous materials; public services; traffic and circulation; air quality; noise and vibration; geology, soils, and slope stability; hydrology and water quality; agriculture; biological resources; cultural resources; greenhouse gas emissions; and paleontological resources.	Notice of determination for final EIR recorded January 11, 2012. Construction may start soon.
South Sacramento Habitat Conservation Plan	Consolidation of environmental efforts to protect and enhance wetlands (primarily vernal pools) and upland habitats to provide ecologically viable conservation areas for approximately 374,000 acres. The project would minimize regulatory hurdles and streamline the permitting process for development projects.	Different locations throughout unincorporated Sacramento County and the cities of Rancho Cordova, Elk Grove, and Galt.	Project issues include land use; agriculture; soils; geology; mining; hydrology; water quality; drainage; biological resources; wetlands and waters of the United States and state; transportation; air quality; greenhouse gas emissions; cultural, historic, and paleontological resources; and public facilities and services.	Notice of intent for draft EIR/EIS published October 28, 2013.
Sacramento County/El Dorado County				
Capital SouthEast Connector	A 34-mile limited-access roadway to connect Interstate 5 near Elk Grove and U.S. Highway 50 near El Dorado Hills. The project will feature up to six traffic lanes, and accommodate bicycle, pedestrian, equestrian, transit, truck, and automobile travel.	From Interstate 5, south of Elk Grove, to U.S. Highway 50 at the Silva Valley Parkway interchange just east of El Dorado Hills. Spanning the cities of Folsom, Elk Grove and Rancho Cordova, and El Dorado and Sacramento Counties.	Project issues include agricultural land; air quality; archaeological and historic resources; biological resources; drainage, absorption, and flooding; forest land and fire hazard; geologic and seismic; noise; population and housing; public services; recreation parks; schools; sewer capacity; soil erosion, compaction, and grading; solid waste; hazards and hazardous materials; traffic and circulation; vegetation; water quality; water supply; wetland and riparian resources; growth inducing; and land use.	Notice of determination for final EIR recorded March 7, 2012. Updated project design guidelines were approved February 13, 2015.

Notes: EIR = environmental impact report; EIS = environmental impact statement; MND = mitigated negative declaration; State Parks = California Department of Parks and Recreation; SVRA = State Vehicular Recreation Area

Sources: City of Folsom 2011, 2014a, 2014b; City of Rancho Cordova 2006a, 2014; Sacramento County Department of Community Development 2014; Jordan, pers. comm., 2014; Doherty, pers. comm., 2014; Lundgren, pers. comm., 2014; Sacramento County 2014a, 2014b; data compiled by AECOM in 2014.



Source: City of Rancho Cordova data adapted by AECOM in 2014

Figure 4-1. Cumulative Project Locations

The projects listed in Table 4-3 and shown in Figure 4-1 would alter the existing visual environment of Prairie City SVRA and the surrounding area. However, only the projects east of Scott Road are within the same viewshed as the SVRA. Existing landforms to the north, west, and south visually separate the SVRA from the other projects.

The *Folsom Plan Area Specific Plan* area is located east of Scott Road and north of White Rock Road. The vernal pool management use area is the only portion of Prairie City SVRA that is visible from the *Folsom Plan Area Specific Plan* area, as intervening landforms visually shield the OHV activity areas. The approved *Folsom Plan Area Specific Plan* would convert the area to a residential/commercial development.

During the initial phase of Teichert Quarry operations, undulating natural landforms, landscaping, and berms will be created to shield views of mining operations from Scott Road. A conveyor will be constructed within Barton Ranch along the southern boundary of Prairie City SVRA to convey a portion of the mined material to Teichert Aggregates' existing Grant Line Rock Products facility. The 4-foot-high, 4- to 6-foot-wide conveyor would be adjacent to the route and trail system and stormwater management use areas within Prairie City SVRA.

The Stoneridge Quarry project would be in the background of views from Scott Road and would not adversely affect the area's visual character. The Teichert Quarry would effectively block views of Stoneridge operations from Scott Road. The GreenCycle project would place a feedstock preparation area and a composting area southeast of the SVRA and adjacent to the west side of Scott Road. A product storage area would be placed east of the feedstock preparation area. The GreenCycle project, in conjunction with the Teichert Quarry, and to a lesser extent the Stoneridge Quarry project, would substantially alter the visual character of the Scott Road viewshed.

The contribution of Prairie City SVRA to the viewshed along Scott Road is limited to the vernal pool management use area, the stormwater management use area, and the Prairie City Motocross Track, 4x4 track, and open area.

With adherence to the General Plan goals and guidelines, specifically OM Guideline 8.1, implementing the Prairie City SVRA General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact on visual resources locally.

4.4.2 AIR QUALITY

A regional approach is taken when evaluating potential cumulative air quality impacts on the local air basin in which a project is located. Prairie City SVRA is located within the Sacramento Valley Air Basin; therefore, cumulative air quality impacts on this broad geographical area are considered.

As discussed in Section 3.2, “Air Quality,” the impacts of General Plan construction related to emissions of criteria pollutants and toxic air contaminants would be temporary, intermittent, and localized, and the emissions impacts would cease after completion of each proposed structure or recreational feature. These impacts would be potentially significant depending on the spatial and temporal extent and level of construction activity; however, with implementation of extensive management practices, impacts would be reduced to a less-than-significant level. Because the construction impacts would be short term, it is anticipated that construction under the General Plan would not cause a cumulatively considerable increase in emissions of pollutants for which the region is in nonattainment.

Increased operational activities at Prairie City SVRA, caused primarily by projected population growth in the region, would lead to additional visitors and increased air pollutant emissions. As discussed in in Section 3.2, visitors and OHV use would increase from any baseline year (i.e., 2004 or 2013) to future 2030 operational conditions. However, cleaner fuels and vehicles would cause the net change in total emissions to remain below significance thresholds, and even to decrease, depending on the actual attendance at Prairie City SVRA.

The tables also indicate that operational emissions of respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}) would see a net increase when considering the 2013 baseline, but the change would be small and would not be a substantial contribution to regional emissions. As shown in Table 3.2-4, the net increase in operational PM_{10} and $PM_{2.5}$ emissions from baseline (2013) to 2030 would be less than the SMAQMD thresholds of significance. Although the Sacramento Valley Air Basin is in nonattainment relative to the California PM_{10} standard, operational emissions associated with the General Plan are minor and would not make a cumulatively considerable incremental contribution to a significant air quality impact.

4.4.3 BIOTIC RESOURCES

Both local and regional impacts on biotic resources are assessed when considering a project’s cumulative impacts on biotic resources. As discussed in Section 3.3, “Biotic Resources,” implementing the Prairie City SVRA General Plan would have a potentially significant impact on biological resources locally and in the region. The planning area contains sensitive vegetation communities consisting of cottonwood/willow stands, oak woodland, and jurisdictional waters of the United States, including wetland habitats. Habitat that could support special-status plant and wildlife species exists in the planning area and several special-status species have been documented to occur there. Vernal pool tadpole shrimp, vernal pool fairy shrimp, and legenere are known to occur in the planning area. Prairie City SVRA also contains suitable nesting and foraging habitat for a variety of protected bird species, including Swainson’s hawk, which is a listed species under the California Endangered Species Act. The SVRA also contains elderberry shrubs that provide potential habitat for the federally listed valley elderberry longhorn beetle. Implementing the Prairie City SVRA General Plan has the potential to result in impacts on these sensitive communities and special-status species.

Adhering to the natural resources goals and guidelines in the General Plan would serve to protect and conserve on-site natural resources and to minimize potential impacts on common and special-status plant and wildlife species that occur or may occur at Prairie City SVRA. These goals and guidelines are designed to allow existing biological resources to persist at the SVRA after the General Plan is implemented. The General Plan’s goals and guidelines require appropriate planning, restrictions, and stewardship to protect and enhance on-site biological resources. Any sensitive biological resources that may be affected by implementation of any aspect of the General Plan would be protected, restored, or enhanced, and General Plan–related activities would comply with all applicable permit conditions. State Parks would consult with the appropriate regulatory agencies (the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and Central Valley Regional Water Quality Control Board) before construction of any project element that may result in impacts on natural resources under the agencies’ jurisdiction. The natural resources goals and guidelines also provide for strict enforcement of riding-destination requirements throughout the SVRA according to the respective use areas’ allowable uses. Monitoring would occur to ensure that riders comply with the rules and regulations and do not ride outside of designated areas.

Proposed future projects in the region such as the *Folsom Plan Area Specific Plan* will result in significant impacts on habitats such as those found in the area covered by the Prairie City SVRA General Plan. As with the General Plan, projects in the vicinity are subject to CEQA review and must obtain environmental permits for impacts on biological resources and sensitive communities that will likely result in compensatory mitigation. Even with the implementation of mitigation, these projects will likely result in a net loss of natural habitat types in the region. However, open space in the region would be expected to be available to reduce these impacts to a less-than-significant level for any given project considered in this cumulative analysis.

With adherence to the General Plan goals and guidelines and any applicable permit conditions, implementing the Prairie City SVRA General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact on biological resources locally or in the region.

4.4.4 CULTURAL RESOURCES

Cultural and ethnographic resources are known to exist throughout central California and are not limited to any specific locale. For this reason, the geographic scope for considering cumulative impacts on these resources generally includes the local geography, including any resources that have been physically identified or could be discovered in the planning area, as well as the broader regional geography of the eastern Sacramento Valley. Previous development in Sacramento County has disturbed or destroyed numerous archaeological and ethnographic sites and has degraded the fabric and integrity of historic-era landscapes surrounding Prairie City SVRA. Cumulative impacts on historical and unique archaeological resources are determined based on an analysis of past, present, and reasonably foreseeable future actions near the planning area in combination with potential effects in the planning area itself.

A review of certified environmental documents for projects in the area surrounding Prairie City SVRA revealed that numerous prehistoric and historic cultural resources have been discovered. A few of these sites are listed in the National Register of Historic Places or California Register of Historic Resources or have been designated as Points of Historical Interest or California Historical Landmarks, while others were determined to be eligible for such listing or designation (City of Folsom 2010; City of Rancho Cordova 2006b, 2006c, 2010; Sacramento County 2010a, 2010b, 2011).

As discussed in Section 3.4, “Cultural Resources,” intensive cultural investigations have been completed in the planning area, including consultation with interested Native American individuals and organizations. Archaeologists with the Off-Highway Motor Vehicle Recreation (OHMVR) Division conducted a complete pedestrian survey of Prairie City SVRA in 2009 and 2010. The focus of this effort was to relocate the cultural resources previously identified and identify any additional resources that may be present. State Parks archaeologists also recorded the dredge tailings as part of the American River Mining District. The 68-acre Barton Ranch parcel was surveyed in 2013. As a result of the pedestrian survey, one prehistoric site was newly recorded and one previously recorded historic-era linear feature was updated. None of these sites were determined to be eligible for listing in the National Register of Historic Places or the California Register of Historic Resources, for designation as a Point of Historical Interest or California Historical Landmark. Native American consultants have expressed a desire for access to the SVRA to gather plant resources and for incorporating native plants of value to the Native American community into restoration efforts.

An AECOM architectural historian conducted archival research at the library at California State University, Sacramento; the National Aeronautics and Space Administration Technical Reports Server; and the AECOM cultural library. This research was used to develop a historic context in which to evaluate the Test Zone K Control Room (Moon Room), Water Tank, and Test Stand K-1 (Aerojet Liquid Hydrogen Test Pit) resources. Because the structures were 50 years old, State Parks conducted a built environment survey of the structures in 2010 and in again in 2013. The structures were evaluated in 2014. The evaluation concluded that the structures did not appear meet the criteria for the National Register of Historic Places, California Register of Historical Resources, or California State Landmarks. The State Historic Preservation Officer will review the findings of the evaluation and provide her conclusion.

CR Goal 1 of the General Plan is “Preserve and protect cultural resources.” Adherence to CR Guidelines 1.1 through 1.5 would ensure that significant adverse impacts on cultural resources would be avoided as a result of future development and improvements at the SVRA. Consequently, implementing the Prairie City SVRA General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact on cultural resources.

4.4.5 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

Prairie City SVRA and the related projects considered in this cumulative analysis are located in the eastern portion of the Sacramento Valley and along the western margin of the Sierra Nevada foothills. Geologic formations, mineral resources, and soil types vary depending on each specific project location, and therefore are site specific. As discussed in Section 3.5, “Geology, Soils, Minerals, and Paleontological Resources,” implementing the Prairie City SVRA General Plan would not have a significant impact on geology, soils, minerals, or paleontological resources locally or in the region.

GEOLOGY AND SOILS

The Sacramento Valley generally has not been seismically active and Prairie City SVRA and the related projects are not located on or adjacent to any known faults. Therefore, strong seismic ground shaking is unlikely. Because the planning area is generally located in stable rock formations, the potential seismic sources are a relatively long distance away, and the groundwater table is at least 120 feet below the ground surface, liquefaction is also unlikely. Parts of the planning area contain steep slopes that could be subject to destabilization as a result of proposed spray irrigation of collected stormwater, and implementing the related projects could expose structures and people to hazards from steep slopes and unstable soils. Many of the soils where project-related facilities would be constructed have a moderate shrink-swell potential, indicating that the soils are expansive and could adversely affect road surfaces, building foundations, landscaping hardscapes, and underground pipelines. The related projects also could be subject to hazards from construction in expansive soils, depending on the specific soil properties at each individual site. However, Geo Guidelines 1.1 and 1.2 in the Prairie City SVRA General Plan state that drainage facilities shall be designed by a California-registered civil engineer, and a geotechnical engineer shall be retained to review construction of drainage facilities, to minimize potential safety hazards or downstream damage associated with failure of earthen or concrete barriers from slope instability; and restroom facilities should use wastewater containment systems to avoid the need for soil percolation of wastewater. Furthermore, each present or future project that entails the construction of buildings, utilities, and other structures is regulated by the California Building Standards Code, which, as described in detail in General Plan Section 2.7.3.3, “Geology, Soils, Minerals, and Paleontological Resources Regulations,” contains specific criteria to reduce the risk of damage and personal injury from seismic events, liquefaction, and other geologic and soils hazards to the maximum extent practicable. Therefore, no additive effect would result, and implementing the General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to surface fault rupture, strong seismic ground shaking, liquefaction, landslides, or unstable or expansive soils.

Past and present uses in the planning area have exposed soil to wind and water erosion as new trails and structures have been constructed. Implementation of the General Plan would involve grading and excavation over a large area, including soil removal, trenching, excavation, installation of footings, and revegetation. Construction activities would temporarily disturb soil and would expose disturbed areas to winter storm events. However, as indicated in Water Guideline 2.3 in the General Plan, State Parks would implement all water quality control measures required under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, and when required, would prepare a storm water pollution prevention plan (SWPPP), which would include best management practices (BMPs) to reduce water quality degradation of receiving waters from construction activities. Construction-related BMPs from the *OHV BMP Manual for Erosion and Sediment Control* (OHV BMP Manual; State Parks 2007 or most current version at time of construction) and the OHMVR *2008 Soil Conservation Standard and Guidelines* (Soil Standard; State Parks 2008) that are specifically designed to reduce erosion and control sedimentation would be implemented at each construction site. Implementing the related projects could result in construction-related soil erosion similar to that described above. However, each project considered in this cumulative analysis must individually meet the Central Valley Regional Water Quality Control Board's NPDES permit requirements, which include preparation of a SWPPP and BMPs designed to control erosion. Therefore, this cumulative impact would be less than significant, and implementing the General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to construction-related erosion.

Septic systems exist in the planning area and may be required as part of the General Plan implementation. Most of the planning area's soils consist of a shallow layer of silt, sand, or clay, underlain by bedrock, which tend to percolate too slowly. As described above, Geo Guideline 1.2 in the General Plan requires that, to the extent feasible, all new restroom facilities in the planning area have wastewater containment systems.

Most of the related projects considered in this cumulative analysis would not require the use of septic systems; instead, wastewater treatment would be provided through connections to regional wastewater treatment conveyance pipelines and plants. However, the Teichert Quarry project would require the use of an on-site septic system. Based on data provided in Section 3.6, "Geology and Soils," of the final EIR prepared for the Teichert Quarry project (DERA 2010a), soils at the Teichert Quarry project site are not suitable for conventional septic systems. Therefore, an engineered "mound" system would be designed and implemented in accordance with Sacramento County engineering requirements. Soil suitability for septic systems depends on the specific soil types at each individual project site and therefore is site specific. Each individual project considered in this cumulative analysis must individually meet standard engineering requirements for septic systems or be connected to a permitted regional wastewater treatment plant. Therefore, no additive effect would result, and implementing the General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to suitability of soils for septic systems.

MINERAL RESOURCES

The presence of mineral resources depends on the type of geologic formation, which varies from location to location and therefore is site specific. The planning area is not located within a regionally designated important mineral resource recovery zone (i.e., MRZ-2 as classified by the California

Geological Survey) or locally designated mineral resource zone as classified by Sacramento County or the City of Rancho Cordova. As discussed in General Plan Section 2.3.1, “Physical Resources,” the planning area does contain piles of dredge tailings from gold mining activities that occurred from the late 1800s through the 1950s, and portions of the Yost property have been mined for sand and gravel until operations ceased in 2012. Additionally, a small outcrop of the Ione Formation is present in the central portion of the planning area, and some areas of the Ione Formation have been known to contain kaolin clay.

Future mining activities would not be permitted in the planning area because they would be incompatible with the California State Park system’s use goals. Two of the related projects, the Teichert and Stoneridge Quarries, consist of aggregate mining operations. In addition, the sites of some of the related development projects, such as the Aerojet Planning Area and the *Rio del Oro Specific Plan*, contain or may contain sources of aggregate materials. The two quarry projects would result in beneficial mining of additional aggregate resources for use in the region, and the development projects would use any on-site sources of aggregate as part of the on-site construction process. Therefore, implementing the General Plan would not result in a loss of regional or locally designated important mineral resources and would not make a cumulatively considerable incremental contribution to a significant cumulative impact on mineral resources.

PALEONTOLOGICAL RESOURCES

Fossil discoveries are occurring with increasing frequency throughout California during excavation and earthmoving activities associated with development. Unique, scientifically important fossil discoveries are relatively rare. The likelihood of encountering fossils is site specific and is based on the type of specific geologic rock formations found underground. These geologic formations vary from location to location. Portions of the planning area are underlain by the Mehrten and Ione Formations. Because of the large number of vertebrate fossils that have been recovered from these formations near the planning area, and from other Northern California locations, they are considered paleontologically sensitive rock units. This suggests that the potential exists to uncover additional similar fossil remains during construction-related earthmoving activities in these formations in the planning area. However, adherence to General Plan Geo Guidelines 2.1 and 2.2 would result in education of all SVRA staff regarding the potential for encountering fossils and the provisions to followed should fossils be encountered (including recordation and curation of specimens).

The related projects are all required to comply with provisions of the *Sacramento County General Plan of 2005–2030* (County General Plan) (Sacramento County Community Planning & Development Department 2011), which contains policies requiring a paleontological resources investigation and mitigation measures to protect unique paleontological resources from damage or destruction. Because any related project where development would take place in a paleontologically sensitive rock formation would be required to implement appropriate mitigation measures, the related projects would not result in a significant impact related to damage or destruction of unique paleontological resources after implementation of required mitigation.

Because of the site-specific nature of unique paleontological resources; the generally low probability that any project would encounter unique, scientifically important fossils; and the fact that the Prairie City SVRA General Plan and the related projects would implement measures to prevent damage to or destruction of unique paleontological resources, a significant cumulative impact related to paleontological resources would not occur. As a result, implementing the General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact on paleontological resources.

4.4.6 GREENHOUSE GAS EMISSIONS

Under CEQA, the impacts of GHG emissions on global climate change are considered inherently cumulative; therefore, project-related GHG emissions should be evaluated as cumulative impacts. As described in Section 3.6, "Greenhouse Gas Emissions," the projected net GHG emissions associated with the Prairie City SVRA General Plan would be negative. This indicates that future GHG emissions levels would be lower than baseline-year emissions, and the GHG emissions would clearly be below the Sacramento Metropolitan Air Quality Management District's adopted significance thresholds. Cleaner OHVs and vehicles, the Low Carbon Fuel Standard, and more fuel-efficient vehicles would lead to lower GHG emissions despite an anticipated higher annual average number of visitors (i.e., greater vehicle miles traveled). Therefore, GHG emissions resulting from General Plan implementation would not have a significant direct or indirect impact on the environment and would not conflict with California's GHG reduction goals and strategies, as described in Assembly Bill 32.

In addition, the General Plan contains policies that would serve to further reduce projected GHG emissions, such as incorporating sustainability into Prairie City SVRA development, operations, and maintenance; supporting the use of electric OHVs; and encouraging visitors and OHV recreationists to protect natural resources and incorporate sustainable practices.

Activities associated with implementation of the General Plan would not generate GHG emissions that could be considered substantial. Therefore, implementing the Prairie City SVRA General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to GHG emissions.

4.4.7 HAZARDS AND HAZARDOUS MATERIALS

Impacts related to hazards and hazardous materials associated with past or current uses of a project site usually occur on a project-by-project basis, and are generally limited to the specific project site.

As described in Section 3.7, "Hazards and Hazardous Materials," Prairie City SVRA's maintenance yard stores potentially hazardous materials, including unleaded gasoline, diesel fuel, oil, and tires to be recycled. Gasoline and diesel fuel are stored in one aboveground tank separated into two 500-gallon sections. Hazardous materials are collected annually by a hazardous-materials recycler. Enhancing and expanding the SVRA's facilities and recreational opportunities is not anticipated to attract additional visitors; however, attendance is expected to increase over time, which would increase the use of gasoline and oils needed for the operation of OHVs. The increased use of these common materials would not create a substantial hazard to the public or environment because individuals would handle relatively small volumes of these materials. In addition, OM Guideline 3.10 in the General Plan requires park staff members to promptly clean up hazardous spills and dispose trash for the health and safety of the environment. Furthermore, OM Guideline 3.4 requires that construction, maintenance, and operation of all facilities occur in compliance with federal, state, and local regulatory requirements regarding the handling and disposal of hazardous materials for the protection of surface and groundwater, soils, and people. Thus, implementing the Prairie City SVRA General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to the routine use, transport, and disposal of hazardous materials.

Aerojet (now Aerojet Rocketdyne Holdings Inc.) has owned and operated a facility for aerospace testing activities in Rancho Cordova since the early 1960s. Approximately 5,900 acres of this site were designated as a Superfund site by the U.S. Environmental Protection Agency in 1983. OM Guideline 3.3 in the General Plan provides that signage and/or fencing as appropriate would be installed around areas of known potential hazard, such as drop-offs, or restricted areas such as the environmentally contaminated areas in Area 39. General Plan OM Guideline 7.1 provides that information from the Aerojet Feasibility Study for Area 39 will be incorporated into the detailed plans developed for proposed facilities. All facilities should be sited and managed to avoid health hazards to sensitive receptors (construction workers, park users and employees, and habitat/wildlife). Measures may include implementing project-specific design measures such as modifications to area closures, limiting uses in identified areas, implementing specific BMPs, monitoring, or using remedial measures identified in the feasibility study. In accordance with General Plan OM Guideline 3.13, appropriate SVRA staff would obtain OSHA training to better coordinate with Aerojet and oversee construction and maintenance activities. Thus, implementing the Prairie City SVRA General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to the potential health hazard or environmental damage from release of or exposure to hazardous materials in Area 39.

4.4.8 HYDROLOGY AND WATER QUALITY

General Plan construction activities would result in soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential mobilization of other pollutants from project-related construction sites that could ultimately drain off-site. Accidental spills of construction-related contaminants could also occur during construction in the planning area and result in surface soil contamination. In addition, implementing the General Plan would create new impervious surfaces over the long term that would increase the volume and peak discharge rate of stormwater runoff generated in the planning area. This could also cause or contribute to long-term discharges of urban contaminants (e.g., sediment, oil and grease, fuel, trash, and pesticides). However, as indicated in Water Guideline 2.3 in the General Plan, State Parks would implement all water quality control measures required under the NPDES Construction General Permit, and when required, prepare a SWPPP, which would include BMPs to reduce water quality degradation of receiving waters from construction activities. Construction-related BMPs from the OHV BMP Manual (State Parks 2007 or most current version at time of construction) and the Soil Standard (State Parks 2008) that are specifically designed to reduce erosion and control sedimentation would be implemented at each construction site. Implementing the related projects could result in construction-related soil erosion similar to that described above. However, each project considered in this cumulative analysis must individually meet the Central Valley Regional Water Quality Control Board's NPDES permit requirements, which includes preparation of a SWPPP and BMPs designed to control erosion. Therefore, this cumulative impact would be less than significant, and implementing the General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to short-term surface water quality and stormwater runoff.

The General Plan contemplates installation of only a small number of new buildings and concrete pads. Although the potential exists for small-stream flooding, General Plan Water Guideline 1.1 specifies that new buildings would not be constructed within or adjacent to stream channels. Therefore, the proposed buildings, roads, and trails would not result in alteration of drainages such that a substantially increased potential for flooding would occur, nor would a cumulatively significant flooding impact from alteration of drainages occur. As a result, implementing the General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to surface drainage and flooding.

The planning area is located in the Sacramento Valley groundwater basin, South American Subbasin, most of which lies within the Sacramento County Water Agency's (SCWA's) Central Sacramento County Groundwater Basin (Central Basin). The related projects considered in this cumulative analysis are also located within the Central Basin. Water for the Folsom South of U.S. 50 Specific Plan Area would be either water provided through existing City of Folsom water contracts, or water that the City of Folsom would obtain from the Natomas Central Mutual Water Company (NCMWC) pursuant to NCMWC's contract with the U.S. Bureau of Reclamation (City of Folsom and USACE 2010). The Sacramento GreenCycle project would obtain water by drilling new groundwater wells; depending on which of the four locations evaluated were ultimately selected, groundwater would be obtained either from the Central Basin or from fractured bedrock east of the Central Basin (DERA 2010b:17-3 through 17-7). The Teichert Quarry project would obtain water from existing Aerojet groundwater remediation wells located at the Teichert Grantline facility (DERA 2010a:3.8-18). The Stoneridge Quarry project is anticipated to use deep groundwater from within the bedrock units east of the Central Basin for water supply, and therefore would not rely on water from the Central Basin (DERA 2010a:3.8-70). The water necessary to supply the proposed development projects considered in this cumulative analysis would be provided by SCWA through its Zone 40 and/or Zone 41 conjunctive-use water supply systems.

SCWA is operated by the Sacramento County Department of Public Works, Water Resources Division, and is authorized to provide water supply, drainage, and flood control for all of Sacramento County. Although Prairie City SVRA owns and operates its own private water supply well, SCWA incorporates all water usage in the Central Basin (i.e., agricultural, recreational, and urban development) when preparing groundwater management plans. In the future, SCWA will be required to comply with requirements of the Sustainable Groundwater Management Act of 2014, which sets forth a new state policy that groundwater resources must be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses.

The EIRs prepared for the projects considered in this cumulative analysis that would entail water use from the Central Basin include the following:

- *Rio del Oro Specific Plan Joint Draft Environmental Impact Report/Environmental Impact Statement* (USACE and City of Rancho Cordova 2006)
- *Sacramento GreenCycle Environmental Impact Report* (Sacramento County 2010b)
- *Final EIR for the Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan and Development Agreement* (Sacramento County 2010a)
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova 2006d)
- *Revised Draft Environmental Impact Report for the Sunrise Douglas Community Plan/SunRidge Specific Plan Long-Term Water Supply Plan* (City of Rancho Cordova 2011)
- *Draft Environmental Impact Report for the 2002 Zone 40 Water Supply Master Plan* (SCWA 2003)

These documents concluded that regardless of whether the water would be supplied from private groundwater wells or from public water supplied through SCWA's conjunctive-use program, water supplies in the planning area are actively managed so that agricultural, recreational, and urban development land uses within the planning horizon (2030) will not cause groundwater levels to drop below the basin's sustainable yield, and therefore will not have substantial adverse effects on groundwater levels or on groundwater recharge in the Central Basin. Furthermore, some of the related development projects considered in this cumulative analysis would result in the development of new impervious surfaces (e.g., residences, commercial buildings, roads, and driveways); however, the primary means of groundwater recharge in the planning area is through creek channels and drainage swales plus landscape irrigation. The creek channels and drainage swales would be preserved along with parks and land areas set aside as natural preserves (e.g., approximately 1,000 acres of oak woodland in the Folsom South of U.S. 50 Specific Plan area). Therefore, it was determined that the effects of the related projects themselves would be less than significant, and the combined effects of these projects would not result in cumulatively significant adverse impacts.

As described in Section 3.8, “Hydrology and Water Quality,” and Section 3.10, “Public Services and Utilities,” of this DEIR, Prairie City SVRA obtains water from a private, on-site groundwater well with a total capacity of approximately 83.4 million gallons per year (approximately 255 acre-feet per year [afy]). Water demand for Prairie City SVRA would be well within the capacity of the existing on-site groundwater well. Furthermore, the amount of new impervious surfaces that would be constructed at the SVRA would be very small (e.g., a new visitor center, a multiuse special events area). General Plan Water Guidelines 3.1 through 3.3 would further require implementation of various water conservation measures throughout the planning horizon (2030). Therefore, implementing the General Plan would not result in substantial interference with groundwater recharge and would not make a cumulatively considerable incremental contribution to a cumulatively significant impact.

4.4.9 NOISE

The primary noise sources at Prairie City SVRA are OHV activities and vehicular traffic. OHV use at Prairie City SVRA currently contributes to ambient sound levels at on- and off-site receptors during the peak season. The location of future off-site noise-sensitive uses adjacent to the planning area is not specifically known at this time; however, it is assumed that with the increased distance (in excess of 1,000 feet) to future adjacent noise-sensitive locations, Prairie City SVRA’s operational noise levels would be considerably lower.

The only planned development with future residential uses that may be exposed to Prairie City SVRA noise is the *Folsom Plan Area Specific Plan* area. However, future OHV noise levels in this residential development would be reduced by noise attenuation associated with the proposed intervening commercial uses (planned commercial area just east of Prairie City Road and north of White Rock Road) and the increased distance (more than 4,000 feet) to the nearest proposed residential uses. Furthermore, as the *Folsom Plan Area Specific Plan* area builds out, White Rock Road would increase to a six-lane roadway and traffic noise would dominate the noise environment for those residential uses.

Based on future Prairie City SVRA operational noise levels, the proposed camping area and the State Parks on-site caretaker housing units would be the only on-site receptors that would be exposed to SVRA operational noise levels above 55 A-weighted decibels (dBA) energy-equivalent noise level (L_{eq}). Prairie City SVRA typically operates during daylight hours, from 8 a.m. to sunset, as discussed on page 2-19 of the General Plan. During the daytime when the OHV operations occur (particularly during the events), campers would be either operating OHVs and/or watching the events from an even shorter distance relative to OHV trails. The exterior areas of the office uses are not considered noise sensitive because the intended use of an office land use category is indoors. Therefore, future noise impacts from SVRA operations at on- and off-site noise-sensitive uses are not considered cumulative impacts.

However, mitigation measures that apply to future operational noise impacts should be implemented to ensure compliance with applicable noise standards. Typical mitigation measures that are applicable to future operational noise impacts are listed below.

- Require that noise levels not exceed relevant jurisdiction (county) noise standards for 24-hour exposure at or beyond the boundary line of the SVRA. In the SVRA, similar limits shall be strived for in areas of permanent human habitation (e.g., the State Parks on-site caretaker housing units).
- Maintain instrumentation and trained personnel to enforce the California Vehicle Code regulation concerning excessive vehicle noise. All vehicles operating in the SVRA shall meet applicable noise limits set in the California Vehicle Code.
- Maintain a buffer area between OHV trails at Prairie City SVRA and the on-site properties to minimize conflicts and prevent OHV use where it is not allowed. Specifically, maintain buffers of 100 feet and 50 feet from State Parks caretaker housing and on-site offices, respectively. OHV use should be limited to speeds of 15 miles per hour within 100 feet of State Parks caretaker housing and 50 feet of offices.
- Subject to existing law, require mufflers that are consistent with the equipment manufacturer’s specifications (original equipment or equivalent).

General Plan OM Guidelines 5.2, 5.3, 5.4, and 5.6 require implementation of these noise-reduction measures at the SVRA, which would reduce operational noise impacts at noise-sensitive receptors to a sufficient degree that ambient noise levels would not increase significantly. For this reason, the operational noise impact of implementing the Prairie City SVRA General Plan would be cumulatively less than significant with implementation of the guidelines listed above.

In addition, implementing the General Plan would increase traffic in the local area over time (as detailed in Section 3.11, “Transportation and Traffic”). As shown in Table 3.9-5, “Future (2030) Noise Levels Modeled for Traffic in the Vicinity of the Planning Area,” of Section 3.9, “Noise,” traffic noise level increases in the SVRA from special-event traffic would range between 0 dBA and 10 dBA versus typical future weekday traffic noise levels, and these project-related traffic noise increases are considered short term in nature, typically occurring only over a weekend. The largest future traffic noise level increase (10 dBA) would occur along the main access road, and no sensitive receptors are located along this roadway.

The General Plan’s contribution to cumulative traffic noise would occur only in the *Folsom Plan Area Specific Plan* area from the studied roadway segments shown in Table 3.9-5. As shown above in Figure 4-1, the *Folsom Plan Area Specific Plan* area would be exposed to traffic noise from White Rock Road and Prairie City Road. General Plan–related future traffic noise levels may result in increases of 0–5 dBA at the *Folsom Plan Area Specific Plan* area; however, future distances to planned noise-sensitive land uses are not known at this time and it is assumed that future traffic noise levels, especially future weekday traffic noise levels, would be mitigated during development of those land uses.

However, mitigation measures that are applicable to future traffic noise impacts would normally be considered for any new developments introducing new noise-sensitive uses. Typical mitigation measures that are applicable to future traffic noise impacts are listed below:

- All residential development projects exposed to greater than 65 dBA day-night average noise level (L_{dn}) at the property line shall be designed and constructed to reduce noise levels to within County General Plan Noise Element standards for exterior activity areas. Potential options for achieving compliance with noise standards include but are not limited to noise barriers, increased setbacks, and strategic placement of structures. An acoustical analysis substantiating the required noise-level reduction, prepared by a qualified acoustical consultant, shall be submitted to and verified by the Sacramento County Division of Environmental Review and Assessment before any building permits are issued for affected sites.

- All residential development projects exposed to greater than 70 dBA L_{dn} at the property line shall be designed and constructed to achieve an interior noise level of 45 dBA L_{dn} or less. Potential options for achieving compliance with noise standards include but are not limited to noise barriers, increased setbacks, strategic placement of structures, and enhanced building construction techniques. An acoustical analysis substantiating the required noise-level reduction, prepared by a qualified acoustical consultant, shall be submitted to and verified by the Sacramento County Division of Environmental Review and Assessment before any building permits are issued for the site.

- Nonresidential development projects such as churches, libraries, meeting halls, and schools exposed to greater than 60 dBA L_{dn} and all nonresidential development projects such as transient lodging, hospitals and nursing homes, and office buildings exposed to greater than 65 dBA L_{dn} at the property line shall demonstrate that interior noise volumes will not exceed County General Plan Noise Element standards for nonresidential uses exposed to traffic noise. This may be accomplished by providing documentation that the type of use is within acceptable limits based on the location of the identified noise contours and assuming standard exterior-to-interior attenuation of 25 dBA. If this cannot be demonstrated, an acoustical analysis substantiating the required noise-level reduction, prepared by a qualified acoustical consultant, shall be submitted to and verified by the Sacramento County Division of Environmental Review and Assessment before any building permits are issued for affected sites. Potential options for achieving compliance with noise standards include but are not limited to noise barriers, increased setbacks, strategic placement of structures, and enhanced building construction techniques. The measure does not apply to commercial uses.

- All parks exposed to noise volumes in excess of 70 dBA at the property line shall be designed and constructed to reduce noise levels within park activity areas (e.g., benches, play structures) to within County General Plan Noise Element standards for parks. Potential options for achieving compliance with noise standards include but are not limited to noise barriers, increased setbacks, and strategic placement of structures. For barriers and other structural options, an acoustical analysis substantiating the required noise-level reduction, prepared by a qualified acoustical consultant, shall be submitted to and verified by the Sacramento County Division of Environmental Review and Assessment before any building permits are issued for affected sites.

Assuming that the future developments in the vicinity of the planning area, including the *Folsom Plan Area Specific Plan* (Figure 4-1), would implement mitigation measures that are applicable to future traffic noise impacts, including the measures listed above, the General Plan–related traffic noise impact of maximum 5 dBA would be reduced to a less-than-significant impact. For this reason, the traffic noise impact of implementing the Prairie City SVRA General Plan would be cumulatively less than significant with implementation of the applicable mitigation measures listed above.

4.4.10 PUBLIC SERVICES AND UTILITIES

The cumulative analysis of public services and utilities is typically based on the service requirements of each service provider and its capacity to provide service. Water, wastewater, solid waste, and storm drainage are the public services generally considered. Utilities include electricity, natural gas, telephone, and cable. Water service at Prairie City SVRA is provided by an on-site well and water distribution lines. Wastewater service is provided by septic systems and vault toilets. The existing on-site water supply well is capable of serving the future water needs of the proposed General Plan; therefore, implementing the General Plan would not make a cumulatively considerable incremental contribution to a significant impact related to water supply (see the “Groundwater Recharge” cumulative impact analysis in Section 4.4.8, “Hydrology and Water Quality,” for details). The existing SVRA land area is sufficiently large to provide additional septic systems and vault toilets. As noted in Section 3.10, “Public Services and Utilities,” solid waste is transported to the Kiefer Landfill, which has an anticipated life span of another 50 years. The General Plan includes an on-site drainage system and stormwater management area that would adequately serve all on-site runoff. Consequently, the proposed facilities would not result in cumulatively considerable impacts on public service providers.

The proposed SVRA facilities may slightly increase the need for fire and emergency medical services and utilities, such as electrical transmission. However, as discussed in Section 3.10, 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 Prairie City SVRA. In addition, projects located in other jurisdictions may be served by different providers or agencies. For these reasons, implementing the Prairie City SVRA General Plan would not make a cumulatively considerable incremental contribution to a significant cumulative impact on public services and utilities.

4.4.11 TRANSPORTATION AND TRAFFIC

As described in Section 3.11, “Transportation and Traffic,” the analysis conducted for this DEIR considered long-term forecasted conditions that take into account projected population growth in Sacramento and El Dorado Counties and implementation of the Prairie City SVRA General Plan. Cumulative conditions have been evaluated within the context of future traffic conditions projected for a year-2030 planning horizon. Table 4-3 describes the 34-mile Capital SouthEast Connector, which will connect Interstate 5 south of Elk Grove to U.S. Highway 50 at the new Silva Valley Parkway interchange just east of El Dorado Hills.

Study area intersections and roadway segments under cumulative conditions are projected to operate satisfactorily with implementation of the General Plan. The General Plan includes operations and maintenance goals and guidelines to minimize the potential for special events at the SVRA to adversely affect on-site parking, circulation, pedestrian safety, and emergency access. Implementing the Prairie City SVRA General Plan would not make a significant cumulative impact on transportation and traffic.

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5 OTHER CEQA-REQUIRED ANALYSIS

5.1 ENVIRONMENTAL EFFECTS ELIMINATED FROM FURTHER ANALYSIS

The following topics were eliminated from full analysis in this draft environmental impact report (DEIR) because no potential exists for significant environmental effects resulting from implementation of the Prairie City State Vehicular Recreation Area (SVRA) General Plan related to these issues. A brief reason for elimination is provided below for each issue area.

5.1.1 AGRICULTURE AND FORESTRY RESOURCES

Appendix G of the California Environmental Quality Act (CEQA) Guidelines defines “forestland” as land that can support 10 percent native tree cover and woodland vegetation of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources—timber, aesthetics, fish and wildlife, biodiversity, water quality, or recreation—and other public benefits (California Public Resources Code [PRC] Section 12220[g]). Although trees are present at Prairie City SVRA, approximately 4.2 percent of the planning area is mapped as forestland. This level of cover by native trees does not satisfy the requirements of PRC Section 12220(g).

The California Department of Conservation (DOC) compiles maps of Important Farmland. The DOC Division of Land Resource Protection’s Important Farmland map for Sacramento County designates the planning area as Grazing Land and Other Land (DOC 2012). Therefore, no agricultural land designated as Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) is located within the planning area. According to the DOC Division of Land Resources Protection’s Williamson Act Lands map for Sacramento County, no portion of the planning area is designated as Williamson Act–Prime Agricultural Land (DOC 2009, 2012).

Implementing the Prairie City SVRA General Plan would increase recreational opportunities within an existing SVRA and would not involve changing or converting any existing forestland or agricultural land.

5.1.2 LAND USE

The Prairie City SVRA General Plan does not include any changes in land use. Sacramento County has not recently updated the SVRA’s land use designation; therefore, a portion of the SVRA’s land use is still listed as General Agriculture. However, because SVRAs are owned by State Parks, the general plans of local cities and counties do not guide SVRA planning. As described in Chapter 2, “Project Description,” three residences owned by State Parks Off-Highway Motor Vehicle Recreation (OHMVR) Division currently are located within the SVRA. The planning area currently includes developed land uses that include off-highway vehicle (OHV) recreation areas and operations facilities. Implementing the Prairie City SVRA General Plan would improve existing recreational opportunities and facilities at the SVRA, would not involve physically dividing an established community, and would not conflict with any applicable land use plan.

5.1.3 POPULATION AND HOUSING

As described in Chapter 2, "Project Description," Prairie City SVRA currently contains three residences occupied by State Parks staff members; however, developing the potential facilities (DEIR Figure 2-5) would not involve developing new housing, nor would it displace any existing residences or people to necessitate construction of replacement housing elsewhere. All new construction would consist of improvements to existing recreational opportunities at the SVRA that would not generate substantial population growth in the area or generate demand for additional housing.

5.1.4 RECREATION

As described in Chapter 2, "Project Description," implementing the General Plan would increase recreational opportunities in Sacramento County and the region. The General Plan would not increase demand for or use of existing neighborhood and regional parks or other recreational facilities. General Plan implementation would involve expanding and improving existing SVRA facilities, the physical effects of which are addressed in Chapter 3 of this DEIR under the relevant resource topics. No additional impact related to implementation of the General Plan would occur beyond those that are comprehensively analyzed throughout this DEIR.

5.2 UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

As required by Section 15126.2(b) of the CEQA Guidelines, an environmental impact report (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 describes potential environmental impacts that may occur with implementation of the Prairie City SVRA General Plan. For all issue areas, implementation of the General Plan would not result in unavoidable significant environmental impacts.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

As required by Section 15126(c) of the CEQA Guidelines, an EIR must include a discussion of any significant irreversible environmental changes that would be caused by the project. The 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 must be evaluated to ensure that such consumption is justified. Implementing the Prairie City SVRA General Plan would cause the following irreversible environmental changes:

- The natural environment would be altered as a consequence of the development process. Implementing the General Plan would expand the existing recreational uses of Prairie City SVRA and would result in new recreational uses on the Yost property and in water quality treatment facilities in the Barton Ranch acquisition area. This commitment of land resources would be consistent with the current land uses of the planning area and would improve the recreational opportunities offered at the SVRA that are specifically important for the OHV recreation community. The General Plan's natural resource management goals provide for the protection and stewardship of natural resources while maintaining a quality OHV recreational experience.

- Requirements for public services and utilities would increase, representing a permanent commitment of these resources. As described in Section 3.10, "Public Services and Utilities," implementing the General Plan would not result in the need for new or expanded regional or local utility infrastructure or supplies.

- Nonrenewable natural resources would be used for construction and operation of facilities envisioned in the General Plan. Resources may include diesel, gasoline, natural gas, or oil for construction equipment; propane to provide power, heating, and cooling to buildings; and gasoline and oil for OHV operation. The energy consumed in future development and maintenance of Prairie City SVRA would be considered a permanent investment. This impact would be reduced by following sustainable practices in site design, construction, maintenance, and operations that are generally practiced by the OHMVR Division, and that are proposed in OM Guideline 1.3 in the General Plan.

    - **OM Guideline 1.3:** Promote opportunities to incorporate sustainability into SVRA development, operations, and maintenance. Sustainability initiatives could include supporting and encouraging the use of electric vehicles, promoting energy efficiency, using reclaimed water, and applying energy efficiency and green building standards to new construction and other initiatives that may be developed in the future.

  Sustainable practices used in design, construction, and management may include the use of green building standards, resource conservation, recycling, and energy efficiency. With implementation of the General Plan, the overall rate of use of renewable natural resources would not increase substantially or result in the depletion of any renewable resource.

- Various renewable natural resources would be used, such as water and lumber for construction and operations. Facilities associated with the General Plan would be a relatively minor consumer of these supplies relative to other types of development throughout the region. In addition, implementing Water Goal 3 and associated guidelines in the General Plan would ensure that future development and improvements in Prairie City SVRA would conserve water resources.

Water Goal 3: Manage the SVRA to conserve water resources while maintaining a quality OHV recreational experience.

- **Water Guideline 3.1:** Use recycled water, as available, for dust control and irrigation as allowed by water quality and health regulations and as available at the site or nearby.
- **Water Guideline 3.2:** Manage facilities to accommodate periods of drought or low water supply. Minimize the use of water for dust control unless recycled or grey water, and continue to use alternative dust suppression methods, as necessary.
- **Water Guideline 3.3:** Implement water conservation measures that will reduce water use by 10 percent by 2015 and 20 percent by 2020 as measured against a 2010 baseline. These measures are in accordance with Executive Order B-18-12 issued by Governor Edmund G. Brown Jr. on April 25, 2012, with the Proclamation of a State of Emergency signed on January 17, 2014. The Proclamations of Continued State of Emergency signed on April 25, 2014, and December 22, 2014, and Executive Order B-29-15 issued on April 1, 2015, impose restrictions to achieve a 25 percent reduction in potable water usage through February 28, 2016.

With implementation of the General Plan, the overall rate of use of renewable natural resources would not increase substantially or result in the depletion of any renewable resource.

5.4 GROWTH-INDUCING IMPACTS

As required by Section 15126.2(d) of the CEQA Guidelines, an EIR must discuss the 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 it 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 open space land to urban uses.

The Prairie City SVRA General Plan does not propose to construct or enable any residential units in the planning area or surrounding area, either directly (e.g., by proposing new homes or businesses) or indirectly (e.g., by extending roads and other infrastructure), and thus would not facilitate growth in the area.

Although the General Plan would expand OHV options in the planning area, and attendance would likely grow naturally, there would not be a bump in attendance solely because of the new opportunities. Instead, an increase in attendance is expected as a result of general economic conditions in the region, rather than expansion of SVRA facilities. Furthermore, the expanded offerings would likely be brought online over time, and the General Plan does not currently make schedule estimates that could be used to establish a buildout date.

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. New or relocated infrastructure (e.g., visitor center, ranger station, overnight camping area, district office) that would be installed with implementation of the Prairie City SVRA General Plan would serve only the SVRA's on-site facilities and would not extend off-site or result in service expansions that could serve or accommodate other future development in the planning area.

Prairie City SVRA historically has served and currently serves as an OHV recreation area and social gathering location for the OHV recreation community. The Prairie City SVRA General Plan would not lead to significant new residential development or foster significant economic or population growth.

For these reasons, implementing the General Plan would not result in primary or secondary environmental effects related to additional growth.

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6 ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the California Environmental Quality Act (CEQA) Guidelines details the guiding principles for analyzing alternatives in this draft environmental impact report (DEIR), as follows:

- Consider alternatives that could reduce or eliminate any significant environmental impacts of the proposed project (the Prairie City State Vehicular Recreation Area [SVRA] General Plan), including alternatives that may be more costly or could otherwise impede the project’s objectives.
- Describe a range of reasonable alternatives to the proposed project that could feasibly attain most of its basic objectives.
- Evaluate the comparative merits of the alternatives.

The Prairie City SVRA General Plan was developed concurrently with this DEIR. Development of the General Plan was guided by the goal to develop a management plan that avoids significant impacts on the environment. Thus, the General Plan is “self-mitigating,” and implementing the Prairie City SVRA General Plan would not result in significant impacts on the environment. Therefore, no alternatives exist that could reduce or avoid significant environmental impacts. However, the Reduced Footprint Alternative presented in this chapter has the potential to further minimize several less-than-significant impacts.

Because the General Plan was developed with the intent to attain all project objectives while minimizing potential environmental impacts, it was difficult to develop alternatives in this DEIR that could further reduce potential environmental impacts while still feasibly attaining most of the project objectives. Therefore, this chapter describes a range of reasonable alternatives that could attain some of the project objectives.

This chapter evaluates the merits of the alternatives compared with the proposed project (Figure 2-5), the Prairie City SVRA General Plan, as described in Chapter 4 of the General Plan.

Two project alternatives—the No-Project Alternative and the Reduced Footprint Alternative—are discussed further in this chapter (in Sections 6.2 and 6.3, respectively). In addition, the planning alternatives that were presented to the public and evaluated before selection of the preferred concept (potential facilities) are described below in Section 6.1. Planning alternatives were referred to as concept alternatives during the planning process (as described further in General Plan Chapter 1, “Introduction”). Section 15126.6(d) of the CEQA Guidelines permits evaluation of alternatives in less detail than is used to evaluate the proposed project. The project alternatives, including the No-Project Alternative, are described in this DEIR to allow for a meaningful evaluation, analysis, and comparison of these alternatives with the proposed project, the Prairie City SVRA General Plan.

The following discussion is intended to inform the public and decision makers of alternatives to the proposed project and the positive and negative aspects of those alternatives when compared with the General Plan. Section 6.4 summarizes these findings and identifies the environmentally superior alternative.

6.1 ALTERNATIVES CONSIDERED DURING THE PLANNING PROCESS

The planning team identified a range of uses for evaluation before developing the preferred concept (potential facilities) described in the General Plan. These uses were grouped to create a range of planning alternatives. If a proposed use did not adhere to the following parameters, it was eliminated from further consideration during the planning process. The following parameters were considered essential to the development of all planning alternatives:

1. *Property ownership:* The property is owned by State Parks and is operated by its Off-Highway Motor Vehicle Recreation (OHMVR) Division. Planning efforts associated with the property must be consistent with the OHMVR Division's mission statement.

2. *State Parks land classification:* The planning area is classified as SVRA lands by State Parks. Planning efforts must be consistent with statutory guidance for SVRA lands.

3. *Purpose acquired and funding source:* The Yost property and the Barton Ranch acquisition area were acquired with California's Off-Highway Vehicle (OHV) Trust Fund monies to expand Prairie City SVRA, provide additional OHV recreation opportunities, and help manage water quality. Planning efforts for property use must be consistent with the purpose of the OHV Trust Fund, and the purpose of each acquisition.

4. *OHMVR Division Strategic Plan (2009):* The General Plan for the existing SVRA, the Yost property, and the Barton Ranch acquisition area must be consistent with the goals, principles, and themes described in the strategic plan.

5. *California Public Resources Code:* Laws that include the Off-Highway Motor Vehicle Act of 2003 (California Public Resources Code Section 5090.01 et seq.) direct how State Parks and SVRAs must be managed and what uses are allowable. General Plan uses and State Parks management of uses must be consistent with state laws governing SVRAs.

6. *State and federal laws regarding resource protection:* Any alternative must avoid or minimize harm to protected plants and wildlife, and must effectively manage cultural resources in accordance with applicable regulations.

7. *Air quality plan/district:* Prairie City SVRA is located in the Sacramento Valley Air Basin, within the jurisdiction of the Sacramento Metropolitan Air Quality Management District

(SMAQMD). The alternatives must consider how the SVRA would comply with SMAQMD's rules.

Planning alternatives (referred to as concept alternatives during the planning process) were presented to the public starting on October 13, 2013 (as described further in General Plan Chapter 1, "Introduction"). The planning alternatives were developed using all of the following elements:

- ideas and comments collected from:
  - a public meeting held in June 2013,
  - comments submitted via e-mail and the General Plan website,
  - an online survey, and
  - stakeholder and agency meetings (with rider groups/concessionaires, regulatory agencies, and Native American groups); and
- an evaluation of potential constraints in the planning area, identified from a review of the cultural resource inventory, biotic resource mapping and monitoring information, easements, local surface water features, and environmental contamination documentation.

The planning alternatives were divided into five geographic zones within Prairie City SVRA, and possible facilities were evaluated for each zone. During outreach activities, stakeholders were asked to comment on their preferences to maintain, enhance, relocate, or develop new facilities for each of the five zones.

The preferred concept addresses feedback that the public, agencies, and stakeholder groups provided on the planning alternatives, while considering the original resource constraints. The planning team attempted to accommodate as many ideas as possible while staying consistent with the OHMVR Act and the OHMVR Division mission, draft vision, and statement of purpose (presented in Section 2.3, "Project Objectives," of this DEIR).

Differences between the preferred concept and the planning alternatives included changes in the location of facilities, creation of specific use areas, and changes to facility names. All planning alternatives were developed to avoid sensitive resources by considering cultural resources, biotic resources, and local surface water features.

6.2 NO-PROJECT ALTERNATIVE

6.2.1 DESCRIPTION

CEQA requires an evaluation of the “no project” alternative and its impacts (CEQA Guidelines Section 15126.6[e][1]). The purpose of describing and analyzing the No-Project Alternative is to allow decision makers to compare the impacts of approving the Prairie City SVRA General Plan with the impacts of not approving the General Plan.

Under the No-Project Alternative, the portion of Prairie City SVRA currently open to the public would remain at 836 acres, with approximately 644 acres available for OHV recreation, 35 acres of buffer area to protect views and scenic quality along Scott Road, and approximately 160 acres of ecological reserve area. OHV use and social gatherings would continue in the portion of the SVRA currently open to the public. The 211-acre Yost property would not be available for OHV recreation and would remain in the current condition, and closed to the public. Use of the Barton Ranch acquisition area would be the same under the proposed General Plan or the No-Project Alternative; the property would continue to be used for water quality management purposes and would not be open to OHV recreation.

Current operation and management patterns in the existing SVRA, on the Yost property, and in the Barton Ranch acquisition area, including resource management and monitoring activities, would likely continue under the No-Project Alternative. The two new facilities proposed for the Yost property in the General Plan—the relocated district office and the multiuse special-events area—and the route and trail system use area would not be developed. Under the No-Project Alternative, the only activities on the Yost property and in the Barton Ranch acquisition area would be those designed to improve the SVRA’s environmental and water quality conditions, meet regulatory agency requirements, and keep up with maintenance necessary to maintain safe conditions.

Visitation increases under the No-Project Alternative would be similar to those anticipated with the proposed project, but only the portion of the SVRA currently open to the public would accommodate such increased visitation. Attendance likely would grow naturally as the population of the region increases and economic conditions improve. However, without the General Plan, State Parks would not construct the potential new facilities (the visitor center, relocated ranger station, overnight camping area, relocated kart track and dirt oval track, enhanced spectator facilities, improved circulation, relocated district office, and multiuse special-events area). The SVRA would offer fewer recreational opportunities than with implementation of the proposed project.

6.2.2 EVALUATION

Should the General Plan not be approved and implemented, the additional facilities envisioned in the General Plan would not be constructed and the Yost property would not be available for OHV recreation. Potential impacts related to air quality, aesthetics, greenhouse gas (GHG) emissions, noise, public services and utilities, hazards and hazardous materials, and transportation and traffic from development and use of new facilities would not occur. The management of the SVRA is undertaken in compliance with all applicable statutory and regulatory requirements. Still, potential impacts on biotic resources, hydrology and water quality, and geology and soils on the Yost property and in the Barton Ranch acquisition area would be less with the No-Project Alternative. Potential impacts related to cultural resources, minerals, and paleontological resources generally would remain the same as under the proposed project (i.e., preferred concept), and would be less than significant.

The regional population would grow, and OHV use in the state likely would continue to grow, thus causing use of the existing Prairie City SVRA to increase. The Prairie City SVRA General Plan includes many guidelines that would improve conditions related to water quality and erosion, and would protect, preserve, and restore biotic and geologic resources while providing additional recreation activities. These guidelines would not be implemented under the No-Project Alternative.

Over time, heavier use of the portion of the SVRA currently open to the public by a larger number of visitors could increase environmental pressures on these environmental resources, and such pressures would not be offset by implementation of the General Plan’s goals and guidelines. Permanent or temporary closures for restoration and protection of natural resources would be implemented to avoid known sensitive resources and limit soil erosion, thereby reducing the availability of OHV recreational opportunities. Thus, under the No-Project Alternative, potential impacts on recreation could be greater than potential impacts of the proposed project. The potential impacts on biotic resources, hydrology and water quality, and geology and soils in the existing Prairie City SVRA also could be greater than potential impacts of the proposed project.

6.3 REDUCED FOOTPRINT ALTERNATIVE

6.3.1 DESCRIPTION

In the Reduced Footprint Alternative (Figure 6-1), the Yost property would be closed to OHV recreation to minimize or avoid impacts on the sensitive natural resources that occur on the property. The route and trail system use area would be restricted to a smaller area in the portion of the SVRA that is currently open to the public. Two potential facilities—the Twin Cities District Office and the multiuse special-events area—would not be constructed on the Yost property. The district office would remain in its current location in the southwest portion of the SVRA and the multiuse special-events area would not be constructed in the SVRA. All other potential new facilities identified in Chapter 2, “Project Description,” would still occur. Allowable uses on the Yost property would be limited to nonmotorized recreational opportunities like picnicking, wildlife viewing, and interpretative hikes. All goals and guidelines would be implemented as described in the General Plan.

6.3.2 EVALUATION

Should the Reduced Footprint Alternative be implemented, OHV recreation would not occur on the Yost property or near wetlands located on the Yost property. Potential impacts related to biotic resources, geology and soils, and hydrology and water quality would be reduced, and would be less than the potential impacts that would occur if the General Plan were implemented. Potential impacts related to aesthetics, air quality, cultural resources, GHG emissions, hazards and hazardous materials, noise, paleontological resources, public services and utilities, minerals, and transportation and traffic generally would remain the same.

The General Plan includes goals and guidelines to minimize potential impacts on biotic resources, geology and soils, hydrology and water quality, and noise to less than significant (as evaluated in DEIR Sections 3.3, 3.5, 3.8, and 3.9, respectively). The Reduced Footprint Alternative would further limit development of facilities and OHV use. Special-status plants, riparian habitats, and waters of the United States on the Yost property would receive increased avoidance buffers from OHV recreation beyond those identified in the General Plan. Soils and drainages within these buffers would also be protected from disturbance, resulting in reduced erosion and water quality impacts. The additional buffers would limit disturbance of potential habitat for vernal pool fairy shrimp and tadpole shrimp, valley elderberry longhorn beetle, western pond turtle, western spadefoot toad, pallid bat, American badger, and nesting birds.

The Reduced Footprint Alternative would preclude the use of the Yost property for OHV recreation. This portion of the property would not be available for the route and trail system use area, the district office, or the multiuse special events area. Without the approximately 13 acre multiuse special events area, the number and type of special events held at Prairie City SVRA would be limited. Approximately 165 acres would not be available for OHV riding on the route and trail system. This would severely limit the overall acreage available to OHV recreation and would make it impossible for the General Plan to achieve its goal of providing enhanced OHV recreation opportunities in accordance with the purpose of the acquisition.

6.4 IDENTIFICATION OF THE ENVIRONMENTALLY SUPERIOR ALTERNATIVE

With the proposed project, all facilities envisioned in the General Plan would be developed (Figure 2-5). Under the Reduced Footprint Alternative (Figure 6-1), the facilities described in the General Plan would be developed, with the exception of the facilities potentially occurring on the Yost property: expanded OHV routes and trail systems, the relocated Twin Cities District Office, and the multiuse special-events area. The goals and guidelines described in the General Plan would be implemented under both the proposed project and the Reduced Footprint Alternative. On the other hand, under the No-Project Alternative, many management goals and guidelines for preserving and restoring natural resources would not be implemented beyond the level required by laws or regulations. For this reason, the No-Project Alternative is not considered the environmentally superior alternative.

The Reduced Footprint Alternative was developed to further limit development of facilities and OHV use in areas where a variety of sensitive resources occur. Because the facilities that would be developed under the proposed project would be similar to those developed under the Reduced Footprint Alternative, the types of potential construction-related and operational environmental impacts would be similar. However, potential environmental impacts generally would occur to a lesser degree under the Reduced Footprint Alternative than under the proposed project. For this reason, the Reduced Footprint Alternative is considered the environmentally superior alternative.

However, the Reduced Footprint Alternative would not meet all of the project objectives. Specifically, this alternative would not:

- allow State Parks to manage the entire SVRA in accordance with the purpose of acquisition;
- anticipate future demand for OHV recreation opportunities and identify strategies to accommodate them at Prairie City SVRA;
- provide management options for operating all portions of Prairie City SVRA, in compliance with California’s OHMVR Act of 2003, as amended; or
- provide a framework for providing adequate facilities for Prairie City SVRA management operations.

The proposed project would provide the best balance between resource protection and recreational use of Prairie City SVRA.

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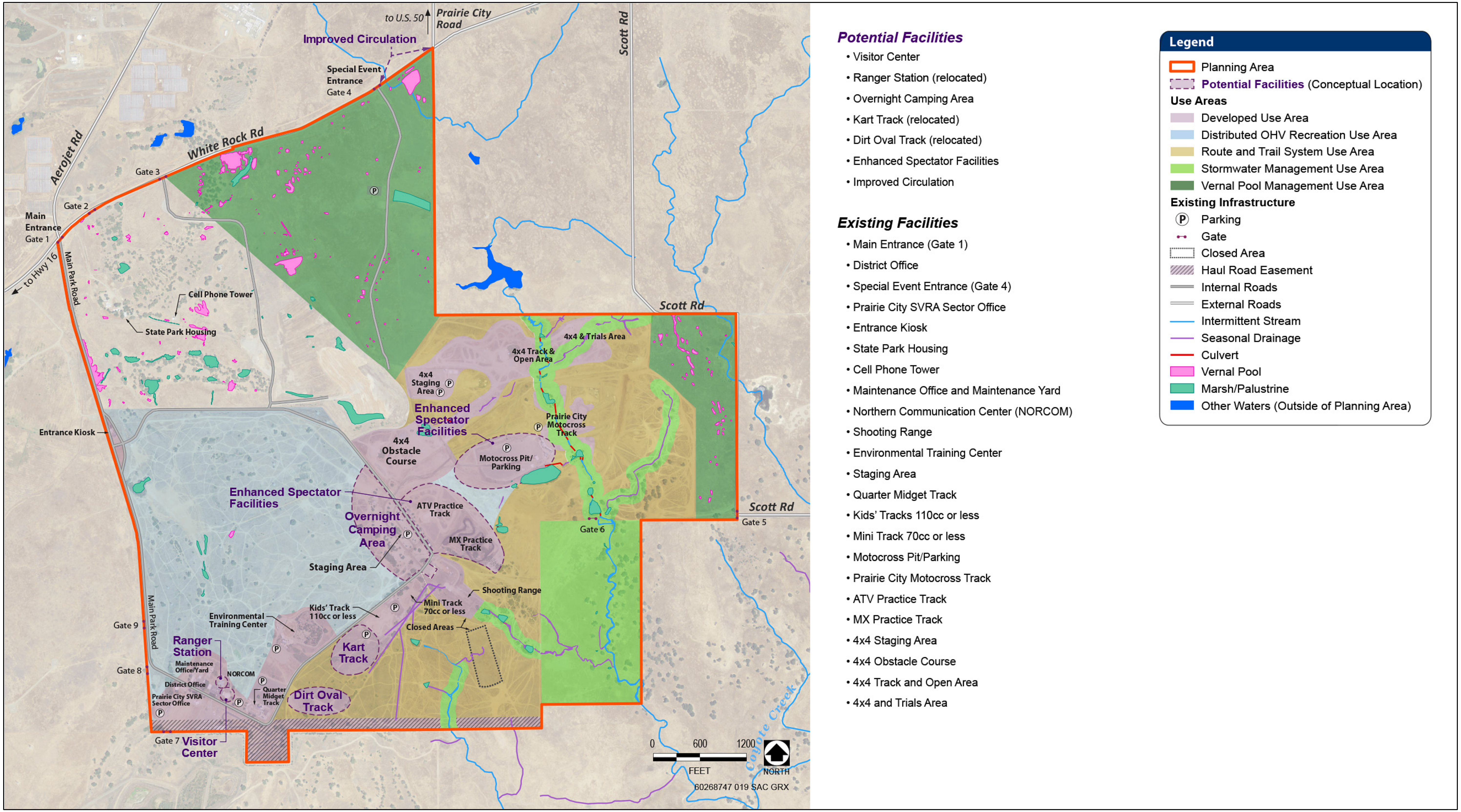

Potential Facilities

- Visitor Center
- Ranger Station (relocated)
- Overnight Camping Area
- Kart Track (relocated)
- Dirt Oval Track (relocated)
- Enhanced Spectator Facilities
- Improved Circulation

Existing Facilities

- Main Entrance (Gate 1)
- District Office
- Special Event Entrance (Gate 4)
- Prairie City SVRA Sector Office
- Entrance Kiosk
- State Park Housing
- Cell Phone Tower
- Maintenance Office and Maintenance Yard
- Northern Communication Center (NORCOM)
- Shooting Range
- Environmental Training Center
- Staging Area
- Quarter Midget Track
- Kids' Tracks 110cc or less
- Mini Track 70cc or less
- Motocross Pit/Parking
- Prairie City Motocross Track
- ATV Practice Track
- MX Practice Track
- 4x4 Staging Area
- 4x4 Obstacle Course
- 4x4 Track and Open Area
- 4x4 and Trials Area

Source: Data compiled by State Parks in 2012, adapted by AECOM in 2014

Figure 6-1. **Reduced Footprint Alternative**

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7 REFERENCES

7.1 SUMMARY

No references cited.

7.2 CHAPTER 1—INTRODUCTION

No references cited.

7.3 CHAPTER 2—PROJECT DESCRIPTION

AECOM. 2009. *Folsom Plan Area Specific Plan* boundary. City of Folsom Sphere of Influence developed for the Folsom South of U.S. Highway 50 Specific Plan Project.

Aerojet Rocketdyne. 2010a (June 3). Aerojet, Solar Power, Inc. and SMUD Announce Completion of Six-Megawatt Solar Installation at Aerojet's Sacramento Site. Available: http://www.rocket.com/article/aerojet-solar-power-inc-and-smud-announce-completion-six-megawatt-solar-installation. Accessed May 5, 2014.

———. 2010b (October). *Final Boundary Operable Unit (OU-6) Remedial Investigation and Risk Assessment, Aerojet Superfund Site, Sacramento County, California.* Sacramento, CA. Prepared by Environmental Resources Management, Sacramento, CA. Prepared for U.S. Environmental Protection Agency, San Francisco, CA; Central Valley Regional Water Quality Control Board, Rancho Cordova, CA; and California Department of Toxic Substances Control, Site Mitigation Program, Sacramento, CA.

California Department of Finance. 2013 (January). Report P-1 (County): State and County Total Population Projections, 2010–2060 (5-year increments). Available: http://www.dof.ca.gov/research/demographic/reports/projections/P-1/. Accessed December 11, 2014.

California Department of Parks and Recreation. 2008. *2008 Soil Conservation Standard and Guidelines*. 2008 Grants and Cooperative Agreements Program Regulations. Off-Highway Motor Vehicle Recreation Division.

———. 2010 (February). *DPR Operations Manual: Interpretation and Education.* Available: http://www.parks.ca.gov/pages/735/files/dom0900-interpchapter_final.pdf. Accessed February 18, 2015.

———. 2012 (August). *Prairie City SVRA Barton Ranch Property Acquisition, Initial Study/Mitigated Negative Declaration.* Off-Highway Motor Vehicle Recreation Division, Sacramento, CA. Prepared by TRA Environmental Sciences, Inc., Menlo Park, CA.

———. 2013. *Interpretation Planning Workbook.* Interpretation and Education Division, Sacramento, CA.

California State Public Works Board. 2004. Meeting minutes for board meeting held on March 12, 2004. Sacramento, CA.

City of Rancho Cordova. 2006 (June). Planning area boundaries as shown in Figure LU-6 of the *Rancho Cordova General Plan* Land Use Element. Available: http://www.cityofranchocordova.org/Index.aspx?page=104. Adapted by AECOM in GIS for display in the Prairie City SVRA General Plan.

DOF. *See* California Department of Finance.

Sacramento County Community Planning & Development Department. 2011 (November 9). 2030 General Plan Land Use for Sacramento County, California. GIS shapefile received by AECOM from Sacramento County Community Planning & Development Department via file transfer in January, 2012. Available: http://www.per.saccounty.net/LandUseRegulationDocuments/Pages/GeneralPlanUpdate.aspx.

State Parks. *See* California Department of Parks and Recreation.

U.S. Fish and Wildlife Service. 1996 (February 28). *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California.* Sacramento Fish and Wildlife Office, Sacramento, CA.

USFWS. *See* U.S. Fish and Wildlife Service.

Wiese, M. 2015. GenCorp Sells Chunk of Land to Developer. *Sacramento Business Journal,* March 5, 2015. Available: http://www.bizjournals.com/sacramento/news/2015/03/05/gencorpsellschunkoflandtodeveloper.html. Accessed April 28, 2015.

7.4 CHAPTER 3—ENVIRONMENTAL ANALYSIS

7.4.1 AESTHETICS

California Department of Transportation. 2013. Officially Designated State Scenic Highways. Available: http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm. Last updated October 14, 2013. Accessed May 6, 2014.

Caltrans. *See* California Department of Transportation.

City of Folsom. 2014 (April). *City of Folsom General Plan Update Existing Conditions Report*. Folsom, CA.

City of Folsom and USACE. *See* City of Folsom and U.S. Army Corps of Engineers Sacramento District, Regulatory Branch.

City of Folsom and U.S. Army Corps of Engineers Sacramento District, Regulatory Branch. 2010. *Folsom South of U.S. 50 Specific Plan Public Draft EIR/EIS.* State Clearinghouse No. 2008092051. Folsom and Sacramento, CA. Prepared by AECOM and RMC Water and Environment, Sacramento, CA.

City of Rancho Cordova. 2005 (September 6). *City of Rancho Cordova Design Guidelines.* Prepared by Pacific Municipal Consultants. Rancho Cordova, CA.

———. 2006a. *Rancho Cordova General Plan*. Adopted June 26, 2006, by Resolutions 116-2006 and 117-206. Rancho Cordova, CA.

———. 2006b (March). *Rancho Cordova General Plan Draft Environmental Impact Report,* Vol. I. State Clearinghouse #2005022137. Rancho Cordova, CA. Section 4.13, “Visual Resources/Light and Glare.”

Lenzie, Sheryl, Associate Planner, and Surinder Singh, Principal Planner. Sacramento County Department of Community Development, Planning and Environmental Review, Sacramento, CA. August 25 and September 17, 2015—e-mails to Matt Hertel of AECOM providing confirmation that Scott Road is a Sacramento County–designated scenic corridor.

Sacramento County Community Planning & Development Department. 2006. *Community Design Guidelines*. Sacramento, CA. Assisted by RACESTUDIO. Adopted September 26, 2006.

———. 2011 (November 9). *Sacramento County General Plan of 2005–2030*. Sacramento, CA.

Sacramento County Department of Transportation. 2015. Sacramento County Traffic Count Database. Available: http://data.saccounty.net/datastreams/91484/traffic-counts-2010-2014/. Accessed May 25, 2015.

7.4.2 AIR QUALITY

AECOM. 2015 (August 31). *Assessment of Health Risk from Inhalation of Fugitive Dust Containing Cadmium for the Prairie City State Vehicular Recreation Area EIR.* Letter memorandum to the Prairie City SVRA General Plan Team. Sacramento, CA.

ARB. *See* California Air Resources Board.

California Air Resources Board. 2005 (April). *Air Quality and Land Use Handbook: A Community Health Perspective*. Sacramento, CA.

———. 2013a. Ambient Air Quality Standards. Available: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Last updated June 4, 2013. Accessed November 24, 2014. P 3

———. 2013b (May). Attachment C: Emissions Estimation Methodology for Off-Highway Recreational Vehicles. Planning and Technical Support Division, Sacramento, CA. Available: http://www.arb.ca.gov/regact/2013/ohrv2013/ohrvattachc.pdf. Accessed March 5, 2015.

Sacramento Metropolitan Air Quality Management District. 2013. Air Quality Standards Attainment Status. Available: http://www.airquality.org/aqdata/attainmentstat.shtml. Last updated December 23, 2013. Accessed June 10, 2014.

———. 2014. *CEQA Guide to Air Quality Assessment in Sacramento County*. Chapter 2, "Environmental Review and Thresholds of Significance." Available: http://www.airquality.org/ceqa/ceqaguideupdate.shtml. Last updated November 2014. Accessed March 5, 2015.

SMAQMD. *See* Sacramento Metropolitan Air Quality Management District.

7.4.3 BIOTIC RESOURCES

AECOM. 2014 (July). *Habitat Types within the Prairie City SVRA General Plan Planning Area*. Adapted from Parus Consulting habitat mapping using GPS survey of wetlands and heads-up digitizing of National Agriculture Imagery Program 2012 aerial imagery.

Brittan, M. R. 1996. *Spring 1996 Vernal Pool Survey at Prairie City State Vehicle Recreation Area*. Unpublished report. Michael Brandman Associates, Sacramento, CA. Cited in State Parks n.d.[d].

California Department of Parks and Recreation. n.d.[a]. *1998 Prairie City SVRA Annual Habitat Monitoring Report*. Off-Highway Motor Vehicles Recreation Division, Twin Cities District.

———. n.d.[b]. *2006 Habitat Monitoring Report: Carnegie State Vehicular Recreation Area and Prairie City State Vehicular Recreation Area*. Natural Resources Division.

———. n.d.[c]. *Habitat Monitoring at Prairie City State Vehicular Recreation Area–2007*.

———. n.d.[d]. *2008/2009 Habitat Monitoring Report: Prairie City State Vehicular Recreation Area*.

———. n.d.[e]. *2010 Habitat Monitoring Report: Prairie City State Vehicular Recreation Area and Clay Pit State Vehicular Recreation Area*.

———. 2005 (July). *Carnegie and Prairie City State Vehicular Recreation Areas: 2004–2005 Biological Surveys*. Inventory, Monitoring and Assessment Program, Natural Resources Division.

———. 2013a (July 3). *Prairie City State Vehicular Recreation Area Biological Resources Assessment*. Off-Highway Motor Vehicle Recreation Division, Sacramento, CA. Prepared by Parus Consulting, Roseville, CA.

———. 2014. Species data for AECOM General Plan Inclusion. Provided to AECOM via e-mail by Max Heitner, Environmental Scientist, California Department of Parks and Recreation Twin Cities District–Prairie City Sector, on August 22, 2014.

———. 2015a. California Natural Diversity Database. *Legenere limosa* observation. Submitted on May 21, 2015.

———. 2015b. California Natural Diversity Database. Swainson's hawk observation. Submitted on May 21, 2015.

———. 2015c. California Natural Diversity Database. Swainson's hawk observation. Submitted on May 21, 2015.

———. 2015d. California Natural Diversity Database. Swainson's hawk observation. Submitted on May 21, 2015.

California Native Plant Society. 2015. Inventory of Rare and Endangered Plants. Online edition, (version 8-02). Rare Plant Program. Sacramento, CA. Available: http://www.rareplants.cnps.org. Accessed January 5, 2015.

California Natural Diversity Database. 2014 (December). *RareFind 5 (Commercial Version): An Internet Application for the Use of the California Department of Fish and Wildlife's Natural Diversity Database*. Biogeographic Data Branch, Sacramento, CA. Available: http://www.dfg.ca.gov/biogeodata/cnddb/. Accessed December 30, 2014.

City of Folsom and USACE. *See* City of Folsom and U.S. Army Corps of Engineers, Sacramento District.

City of Folsom and U.S. Army Corps of Engineers, Sacramento District. 2010 (June). *Public Draft Environmental Impact Report/Environmental Impact Statement, Folsom South of U.S. 50 Specific Plan Project*. Folsom and Sacramento, CA. Prepared by AECOM and RMC Water and

Environment, Sacramento, CA. Available: http://ftp.folsom.ca.us/soi/Folsom_DEIR-DEIS_DRAFT.pdf. Accessed November 20, 2014.

CNDDB. *See* California Natural Diversity Database.

CNPS. *See* California Native Plant Society.

DERA. *See* Sacramento County Department of Environmental Review and Assessment.

Environmental Laboratory. 1987. *U.S. Army Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, MS. Cited in State Parks 2013a.

Jones & Stokes Associates, Inc. 1994. *Vernal Pools Resources at Prairie City State Vehicle Recreation Area*. Unpublished report, prepared for California Department of Parks and Recreation, Sacramento, CA. Cited in State Parks 2003 and n.d.[d].

LSA Associates, Inc. 2003 (March 21). *Results of Preliminary Sensitive Biological Resources Constraints Analysis for the Proposed Adventure Park Project, Prairie City SVRA*. Pt. Richmond, CA. Memorandum report to Karen Feldheim of California State Parks, Off-Highway Motor Vehicle Recreation Division, Sacramento, CA.

Sacramento County. 2013. "South Sacramento HCP Plan Area." Map prepared as Exhibit 6 for November 20 and 21, 2013, scoping meetings for the South Sacramento Habitat Conservation Plan EIS/EIR. Planning and Environmental Review. Available: http://www.per.saccounty.net/PlansandProjectsIn-Progress/Pages/SSHCPPlan.aspx. Accessed April 15, 2015.

Sacramento County Department of Environmental Review and Assessment. 2010 (October). *Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan, Grading Permit, Encroachment Permit, and Development Agreement Final Environmental Impact Report.* Control Number 02-GPB-RZB-UPB-REB-DGB-0636, State Clearinghouse Number 20030702087. Sacramento, CA.

State Parks. *See* California Department of Parks and Recreation.

U.S. Army Corps of Engineers. 2008. *Formal Response to the Request for an Approved Jurisdictional Determination for the Prairie City State Vehicular Recreation Area Project*. Reference Number SPK-2008-475. Cited in State Parks 2013a.

U.S. Fish and Wildlife Service. 2014 (September). Critical Habitat Portal: Seamless Composite Critical Habitat layer for all species. Available: http://crithab.fws.gov/. Accessed September 29, 2014.

USACE. *See* U.S. Army Corps of Engineers.

USFWS. *See* U.S. Fish and Wildlife Service.

7.4.4 CULTURAL RESOURCES

AECOM. 2014a (March 10). *Cultural Resources Analysis for Prairie City State Vehicle Recreation Area*. Sacramento, CA. Memorandum from Patricia Ambacher, AECOM Historian, to Alicia Perez, California Department of Parks and Recreation.

———. 2014b (June 20). *Cultural Resources Analysis for Prairie City State Vehicle Recreation Area*. Sacramento, CA. Memorandum from Patricia Ambacher, AECOM Historian, to Sarah Wallace, California Department of Parks and Recreation.

California Department of Parks and Recreation. 2010 (June). *A Cultural Resource Inventory of the Prairie City State Vehicular Recreation Area (SVRA), Sacramento County, California*. Off-Highway Vehicle Recreation Division, Sacramento, CA.

———. 2012 (April 24). *Archaeological Survey Report, Prairie City State Vehicular Recreation Area, Barton Ranch Acquisition*. Off-Highway Vehicle Recreation Division, Sacramento, CA.

Derr, E. H. 1989. *A Cultural Resources Survey of the Prairie City OHV State Park, Sacramento County, California.* Prepared for ECOS Inc., Sacramento, CA. Prepared by Cultural Resources Unlimited, Sacramento, CA.

Hines, P. 2004. Summary of results for records search, North Central Information Center File No. SAC-04-03. Prepared by North Central Information Center, California State University, Sacramento.

National Park Service. 1998. *National Register Bulleting: Guidelines for Evaluating and Documenting Traditional Cultural Properties*. U.S. Department of the Interior, Washington, DC.

NPS. *See* National Park Service.

State Parks. *See* California Department of Parks and Recreation.

7.4.5 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

California Department of Parks and Recreation. 2007 (November). *OHV BMP Manual for Erosion and Sediment Control.* Off-Highway Motor Vehicle Recreation Division, Sacramento, CA. Prepared by Salix Applied Earthcare, Redding, CA, and Geosyntec Consultants, San Diego, CA.

———. 2008. *2008 Soil Conservation Standard and Guidelines.* 2008 Grants and Cooperative Agreements Program Regulations. Off-Highway Motor Vehicle Recreation Division.

———. 2012a. *Prairie City (Yost) Reclamation Annual Monitoring Report—Final.* Prepared by Teichert Materials, Sacramento, CA.

———. 2012b (August). *Prairie City SVRA Barton Ranch Property Acquisition, Initial Study/Mitigated Negative Declaration.* Off-Highway Motor Vehicle Recreation Division, Sacramento, CA. Prepared by TRA Environmental Sciences, Inc., Menlo Park, CA.

Dupras, D. 1999. *Mineral Land Classification: Portland Cement Concrete-Grade Aggregate and Kaolin Clay Resources in Sacramento, County, California.* California Division of Mines and Geology, Open-File Report 99-09. Sacramento, CA.

Higgins, C. T., and J. P. Clinkenbeard. 2006. *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California*. California Division of Mines and Geology, Special Report 192.

Jennings, C. W. 1994. *Fault Activity Map of California and Adjacent Areas, with Locations and Ages of Recent Volcanic Eruptions*. Scale: 1:750,000. California Division of Mines and Geology, Geologic Data Map No. 6. Sacramento, CA.

NRCS. *See* U.S. Natural Resources Conservation Service.

Sacramento Central Groundwater Authority. 2012 (February). *Sacramento Central Groundwater Authority Groundwater Elevation Monitoring Plan*. Sacramento, CA.

Society of Vertebrate Paleontology. 1996. Conditions of Receivership for Paleontologic Salvage Collections [final draft]. *Society of Vertebrate Paleontology News Bulletin* 166:31–32.

State Parks. *See* California Department of Parks and Recreation.

University of California Museum of Paleontology. 2014. Museum of Paleontology Database. Accessed January 14, 2014.

U.S. Natural Resources Conservation Service. 2013. Web Soil Survey. Available: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Last updated December 6, 2013. Accessed February 27, 2014.

Wahl, R. E., M. E. Hynes, D. E. Yule, and D. J. Elton. 1989. *Seismic Stability Evaluation of Folsom Dam and Reservoir Project*. Report 6, Right and Left Wing Dams. Department of the Army Corps of Engineers, Technical Report GL-87-14. Vicksburg, MS.

Wills, C. J., R. J. Weldon II, and W. A. Bryant. 2007. California Fault Parameters for the National Seismic Hazard Maps and Working Group on California Earthquake Probabilities 2007. In *The Uniform California Earthquake Rupture Forecast,* Version 2 (UCERF 2), Appendix A.

U.S. Geological Survey Open-File Report 2007-1437A and California Geological Survey Special Report 203A. Reston, VA.

7.4.6 GREENHOUSE GAS EMISSIONS

ARB. *See* California Air Resources Board.

California Air Resources Board. 2014. California Greenhouse Gas Inventory for 2000–2012—by Category as Defined in the 2008 Scoping Plan. Available: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-12_2014-03-24.pdf. Last updated March 24, 2014. Accessed September 10, 2014.

California Energy Commission. 2006 (December). *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004.* Staff Final Report. Publication CEC-600-2006-013-SF. Sacramento, CA.

CEC. *See* California Energy Commission.

DERA. *See* Sacramento County Department of Environmental Review and Assessment.

EPA. *See* U.S. Environmental Protection Agency.

Intergovernmental Panel on Climate Change. 2007 (February). *Climate Change 2007: The Physical Science Basis*. Chapter 9, “Understanding and Attributing Climate Change.” Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland.

IPCC. *See* Intergovernmental Panel on Climate Change.

NASA. *See* National Aeronautics and Space Administration.

National Aeronautics and Space Administration. 2008. What’s the Difference between Weather and Climate? Available: http://www.nasa.gov/mission_pages/noaa-n/climate/climate_weather.html. Last updated August 4, 2008. Accessed March 10, 2014.

Sacramento County Department of Environmental Review and Assessment. 2009 (June). *Greenhouse Gas Emissions Inventory for Sacramento County*. Sacramento, CA. Prepared by ICF Jones & Stokes. Sacramento, CA. Available: http://www.ca-ilg.org/sites/main/files/file-attachments/resources__SAC_GHG_Inventory_June2009.pdf. Accessed April 10, 2014.

Sacramento Metropolitan Air Quality Management District. 2014a. Resolution No. 2014-028, “Recommended Greenhouse Gas Emissions Thresholds of Significance.” Adopted by SMAQMD Board of Directors October 23, 2014.

———. 2014b (November). *Guide to Air Quality Assessment in Sacramento County*. Sacramento, CA. Chapter 6, "Greenhouse Gas Emissions."

Seinfeld, J. H., and S. N. Pandis. 1998. *Atmospheric Chemistry and Physics: From Air Pollution to Climate Change*. New York: John Wiley & Sons, Inc.

U.S. Environmental Protection Agency. 2014. Causes of Climate Change. Available: http://www.epa.gov/climatechange/science/causes.html. Last updated March 4, 2014. Accessed June 10, 2014.

7.4.7 HAZARDS AND HAZARDOUS MATERIALS

Aerojet Rocketdyne. 2013 (November). *Draft Remedial Investigation Supplement for the Island Operable Unit (OU-7), Aerojet Superfund Site, Sacramento County, California.* Prepared by CBI and Shaw Environmental, Inc. Sacramento, CA.

CAL FIRE. *See* California Department of Forestry and Fire Protection.

California Department of Forestry and Fire Protection. 2007 (November). Fire Hazard Severity Zones in SRA: Sacramento County, CA. Map scale 1:100,000. Adopted by CAL FIRE on November 7, 2007. Available: http://www.fire.ca.gov/fire_prevention/fhsz_maps_sacramento.php. Accessed May 21, 2014.

California Department of Parks and Recreation. 1991 (March). *Final Environmental Impact Report for the Prairie City State Vehicular Recreation Area.* State Clearinghouse No. 91012070. Off-Highway Motor Vehicle Recreation Division, Sacramento, CA. Prepared by ECOS, Inc.

———. 2008. *Prairie City SVRA Four-Wheel Drive Improvements Initial Study/Mitigated Negative Declaration.* Off-Highway Motor Vehicle Recreation Division.

———. 2011 (July). *Wildfire Management Plan, Prairie City State Vehicular Recreation Area.* Off-Highway Motor Vehicle Recreation Division, Rancho Cordova, CA.

California Department of Toxic Substances Control. 2014. EnviroStor Hazardous Waste and Substances Site List. Available: http://www.envirostor.dtsc.ca.gov/public/search.asp. Accessed May 21 and 23, 2014.

DTSC. *See* California Department of Toxic Substances Control.

EPA. *See* U.S. Environmental Protection Agency.

Fennessy, Chris. Engineering manager, Environmental Remediation Department. Aerojet Rocketdyne, Folsom, CA. December 10, 2014—Meeting with Danielle Hughes of AECOM and Sarah

Cumber-Lose of the California Department of Parks and Recreation regarding the potential for hazardous wastes to exist in the portion of the planning area formerly owned by Aerojet and operated as a rocket testing site.

Harper, Nathan. Maintenance Chief, Prairie City SVRA, Rancho Cordova, CA. May 28, June 1, June 2, June 3, and June 4, 2015—e-mails to Matt Hertel of AECOM regarding water quality data for the water supply well that supplies water to Prairie City SVRA.

SACOG. *See* Sacramento Area Council of Governments.

Sacramento Area Council of Governments. 1997 (May). *Mather Airport Comprehensive Land Use Plan.* Sacramento, CA.

Sacramento County Airport System. 2015. Mather Airport: History. Available: http://www.sacramento.aero/mhr/about/history. Accessed March 17, 2015.

Sacramento County Community Planning & Development Department. 2011 (November 9). *Sacramento County General Plan of 2005–2030.* Hazardous Materials Element. Sacramento, CA.

Sacramento County Environmental Management Department. 2012 (September). *Sacramento County Area Plan for Emergency Response to Hazardous Materials Incidents in Sacramento County*. Mather, CA.

———. 2014 (February 6). Master List of Facilities within Sacramento County with Potentially Hazardous Materials. Available: www.emd.saccounty.net/documents/lists/mstr.pdf. Accessed May 21, 2014.

SCAS. *See* Sacramento County Airport System.

State Parks. *See* California Department of Parks and Recreation.

State Water Resources Control Board. 2010 (August). Groundwater Information Sheet: N-Nitrosodimethylamine (NDMA). Division of Water Quality, GAMA Program.

———. 2014. GeoTracker. Available: https://geotracker.waterboards.ca.gov/map/. Accessed April 17, 2015.

SWRCB. *See* State Water Resources Control Board.

U.S. Environmental Protection Agency. 2011 (September). *EPA Selects Cleanup Plan for Operable Unit 5 of the Aerojet General Corporation Superfund Site.* EPA Aerojet General Corporation Superfund Site fact sheet. Region 9, San Francisco, CA. Available: http://yosemite.epa.gov/r9/

sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/c14a954681f9666c882579100078f83d!OpenDocument. Accessed April 4, 2014.

———. 2015. Superfund Site Overview: Aerojet General Corp. Available: http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/BySite/Aerojet%20General%20Corp.?OpenDocument. Last updated March 17, 2015. Accessed April 17, 2015.

7.4.8 HYDROLOGY AND WATER QUALITY

AECOM. 2014 (July). Habitat types within the Prairie City SVRA General Plan planning area. Adapted from Parus Consulting habitat mapping using GPS survey of wetlands and heads-up digitizing of National Agriculture Imagery Program 2012 aerial imagery.

Aerojet Rocketdyne. 2013 (November). *Draft Remedial Investigation Supplement for the Island Operable Unit (OU-7), Aerojet Superfund Site, Sacramento County, California.* Prepared by CBI and Shaw Environmental, Inc. Sacramento, CA.

ARCADIS. *See* ARCADIS U.S., Inc.

ARCADIS U.S., Inc. 2007 (September 10). “SCOPE A: Temporary Sediment and Erosion Control Plan for Prairie City State Vehicular Recreation Area, Sacramento County, California.” Seattle, WA. Letter memorandum from Scott Stewart and Doug Partridge, ARCADIS, to Michael Romo, California Department of Parks and Recreation, Sacramento, CA.

California Department of Parks and Recreation. 1990 (January). *Prairie City State Vehicular Recreation Area Resource Element.* Prepared by ECOS, Inc. Sacramento, CA.

———. 1991 (March). *Final Environmental Impact Report for the Prairie City State Vehicular Recreation Area.* State Clearinghouse No. 91012070. Prepared by ECOS, Inc. Sacramento, CA.

———. 2007 (November). *OHV BMP Manual for Erosion and Sediment Control.* Prepared by Salix Applied Earthcare and Geosyntec Consultants. Redding and San Diego, CA.

———. 2008. *2008 Soil Conservation Standard and Guidelines.* 2008 Grants and Cooperative Agreements Program Regulations. Off-Highway Motor Vehicle Recreation Division.

———. 2012. *Phase I Environmental Site Assessment, Prairie City Barton Ranch, Rancho Cordova, California.*

Central Valley Regional Water Quality Control Board. 2011 (October). *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region: The Sacramento River Basin and the San Joaquin River Basin*. Fourth Edition, revised October 2011 (with Approved Amendments). Sacramento, CA.

Central Valley RWQCB. *See* Central Valley Regional Water Quality Control Board.

City of Folsom and USACE. *See* City of Folsom and U.S. Army Corps of Engineers Sacramento District, Regulatory Branch.

City of Folsom and U.S. Army Corps of Engineers Sacramento District, Regulatory Branch. 2010. *Folsom South of U.S. 50 Specific Plan Public Draft EIR/EIS.* State Clearinghouse No. 2008092051. Folsom and Sacramento, CA. Prepared by AECOM and RMC Water and Environment, Sacramento, CA.

DERA. *See* Sacramento County Department of Environmental Review and Assessment.

Harper, Nathan. Maintenance Chief. California Department of Parks and Recreation, Off-Highway Motor Vehicle Division, Prairie City State Vehicular Recreation Area, Folsom, CA. June 3, 2015—e-mail to Matt Hertel regarding the water quality testing of the drinking water well located in the planning area.

Lund, J. 2005. *Engineering Field Report: Soil Erosion & Discharge Conditions at Prairie City SVRA, 2004 & 2005 Unit #367.*

NRCS. *See* U.S. Natural Resources Conservation Service.

Sacramento County Department of Environmental Review and Assessment. 2010 (October). *Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan, Grading Permit, Encroachment Permit, and Development Agreement Final Environmental Impact Report.* Control Number 02-GPB-RZB-UPB-REB-DGB-0636, State Clearinghouse Number 20030702087. Sacramento, CA.

State Parks. *See* California Department of Parks and Recreation.

U.S. Natural Resources Conservation Service. 2013. Web Soil Survey. Available: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Last updated November 2013. Accessed February 27, 2014.

7.4.9 NOISE

American Motorcyclist Association. 2013. *AMA Annual Report*, *2013*. Pickerington, OH. Available: http://americanmotorcyclist.com/Libraries/About_Documents/2013_AMA_AnnualReport_lores.sflb.ashx?download=true. Accessed January 20, 2014.

BBN. *See* Bolt Beranek and Newman.

Becker, Mike. Traffic Engineer, KD Anderson & Associates, Inc., Loomis, CA. December 19, 2014—e-mail to Matt Hertel, AICP, of AECOM providing traffic volume information and associated levels of service associated with implementation of the Prairie City SVRA General Plan.

Bolt Beranek and Newman Inc. 1981. *Noise Control for Buildings and Manufacturing Plants.* Cambridge, MA; Arlington, VA; and Canoga Park, CA.

City of Folsom. 2014 (April). *City of Folsom General Plan Update Existing Conditions Report.* Folsom, CA. Chapter 11, “Noise.”

City of Rancho Cordova. 2006. *Rancho Cordova General Plan*. Adopted June 26, 2006, by Resolutions 116-2006 and 117-206. Rancho Cordova, CA.

City of Sacramento. 2014 (August). *Draft Master Environmental Impact Report for the City of Sacramento 2035 General Plan Update.* State Clearinghouse No. 2012122006. Community Development Department, Environmental Planning Services, Sacramento, CA. Prepared by Ascent Environmental, Inc., Sacramento, CA. Section 4.8, “Noise and Vibration.”

EPA. *See* U.S. Environmental Protection Agency.

Federal Highway Administration. 1978. Highway Traffic Noise Prediction Model. RD-77-108. Washington, DC.

———. 2006 (January). *FHWA Roadway Construction Noise Model User’s Guide.* Final Report. FHWA-HEP-05-054, DOT-VNTSC-FHWA-05-01. Prepared for the FHWA Office of Natural and Human Environment, Washington, DC. Prepared by U.S. Department of Transportation Research and Innovative Technology Administration, John A. Volpe National Transportation Systems Center, Acoustics Facility, Cambridge, MA.

Federal Interagency Committee on Noise. 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues.*

Federal Transit Administration. 2006 (May). *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. Washington, DC.

FHWA. *See* Federal Highway Administration.

FICON. *See* Federal Interagency Committee on Noise.

FTA. *See* Federal Transit Administration.

Governor’s Office of Planning and Research. 2003 (October). *State of California General Plan Guidelines.* Sacramento, CA.

KD Anderson & Associates. 2013 (August 8). *Existing Traffic Conditions Report for the Prairie City SVRA GP and EIR.* Loomis, CA. Prepared for AECOM, Sacramento, CA.

OPR. *See* Governor's Office of Planning and Research.

Sacramento County Community Planning & Development Department. 2011 (November 9). *Sacramento County General Plan of 2005–2030*. Sacramento, CA.

U.S. Environmental Protection Agency. 1974 (March). Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Office of Noise Abatement and Control, Washington, DC.

7.4.10 PUBLIC SERVICES AND UTILITIES

California Department of Parks and Recreation. 2012 (December 10). *Prairie City State Vehicular Recreation Area, Visitor Attendance by Calendar Year*. Sacramento, CA. Data provided to AECOM, Sacramento, CA.

State Parks. *See* California Department of Parks and Recreation.

7.4.11 TRANSPORTATION AND TRAFFIC

California Department of Finance. 2013 (January 31). Report P-1 (County) State and County Population Projections July 1, 2010–2060 (5-year increments). Demographic Research Unit, Sacramento, CA.

California Department of Transportation. 2012. *California Manual on Uniform Traffic Control Devices for Streets and Highways: FHWA's 2009 Edition as Amended for Use in California.* 2012 Edition. Division of Traffic Operations, Sacramento, CA.

Caltrans. *See* California Department of Transportation.

DKS Associates. 2011 (October). *Cordova Hills Traffic Analysis, Technical Report, October 1, 2011*. Oakland, CA. Prepared for Sacramento County Department of Environmental Review and Assessment, Sacramento, CA.

DOF. *See* California Department of Finance.

Fehr & Peers. 2010 (April). *Transit Master Plan for Folsom Plan Area Specific Plan.* Roseville, CA.

Lenzie, Sheryl, Associate Planner, and Surinder Singh, Principal Planner. Sacramento County Department of Community Development, Planning and Environmental Review, Sacramento, CA. August 25 and September 17, 2015—e-mails to Matt Hertel of AECOM providing confirmation that Scott Road is a Sacramento County–designated scenic corridor.

Sacramento County. 2004 (July). *Traffic Impact Analysis Guidelines*. Sacramento, CA.

Sacramento County Community Planning & Development Department. 2014 (May 28). *Sacramento County General Plan of 2005–2030*, Circulation Element. Adopted December 15, 1993; amended November 9, 2011, and May 28, 2014. Sacramento, CA.

7.5 CHAPTER 4—CUMULATIVE ANALYSIS

City of Folsom and U.S. Army Corps of Engineers Sacramento District, Regulatory Branch. 2010. *Folsom South of U.S. 50 Specific Plan Public Draft EIR/EIS.* State Clearinghouse No. 2008092051. Folsom and Sacramento, CA. Prepared by AECOM and RMC Water and Environment, Sacramento, CA.

California Department of Finance. 2013. Report P-1 (County): State and County Total Population Projections, 2010-2060 (5-year increments). Available: http://www.dof.ca.gov/research/demographic/reports/projections/P-1/. Accessed December 11, 2014.

California Department of Parks and Recreation. 2007 (November). *OHV BMP Manual for Erosion and Sediment Control.* Prepared by Salix Applied Earthcare, Redding, CA, and Geosyntec Consultants, San Diego, CA.

———. 2008. *2008 Soil Conservation Standard and Guidelines.* 2008 Grants and Cooperative Agreements Program Regulations. Off-Highway Motor Vehicle Recreation Division.

———. 2014a (January). *Online Survey: Key Findings.* Rancho Cordova, CA. Prepared by AECOM, Sacramento, CA.

———. 2014b. Visitation statistics provided by State Parks planning staff.

City of Folsom. 2010. Folsom South of U.S. Highway 50 Specific Plan DEIR/DEIS. Available: http://ftp.folsom.ca.us/soi/Folsom_DEIR-DEIS_DRAFT.pdf. Accessed December 15, 2014.

———. 2011 (June 28). *Folsom Plan Area Specific Plan.* Folsom, CA. Adopted by the City of Folsom, Resolution No. 8863. Prepared by Torrence Planning, El Dorado Hills, CA.

———. 2014a. Annexation Current Documents, Folsom Plan Area Specific Plan. Available: http://www.folsom.ca.us/depts/community_development/sphere/current_documents.asp. Accessed December 9, 2014.

———. 2014b. Staff Report for the June 10, 2014 City Council meeting. Subject: Uncodified Ordinances of the City of Folsom for the First Amended and Restated Tier 1 Development Agreement by and between the City of Folsom and Certain Landowners in the Folsom Plan Area Relative to the Folsom South Specific Plan (Second Reading and Adoption). Community Development Department. Folsom, CA.

City of Rancho Cordova. 2006a (June). Planning area boundaries as shown in Figure LU-6 of the Rancho Cordova General Plan Land Use Element. Available: http://www.cityofranchocordova.org/Index.aspx?page=104. Adapted by AECOM in GIS for display in the Prairie City SVRA General Plan.

———. 2006b (June). General Plan Draft EIR Section 4.11 Cultural and Paleontological Resources. Available: http://www.cityofranchocordova.org/ftp/large_docs/Rancho%20Cordova%20 General%20Plan%20FEIR_Full%20Document.pdf. Accessed December 28, 2014.

———. 2006c. Rio del Oro Specific Plan Project Draft Environmental Impact Report/Environmental Impact Statement. Available: http://www.cityofranchocordova.org/ftp/large_docs/ Rio%20del%20Oro%20Vol%20I-DEIR%2012-8-06.pdf. Accessed December 28, 2014.

———. 2006d (March). *Rancho Cordova General Plan Draft Environmental Impact Report.* State Clearinghouse No. 2005022137. Rancho Cordova, CA.

———. 2010 (August). Rio Del Oro Specific Plan. Available: http://www.cityofranchocordova.org/Index.aspx?page=128. Accessed December 28, 2014.

———. 2011 (January). *Revised Draft Environmental Impact Report for the Sunrise Douglas Community Plan/SunRidge Specific Plan Long-Term Water Supply Plan.* Rancho Cordova, CA. Prepared by AECOM, Sacramento, CA.

———. 2014. Environmental Documents Library. Available: http://www.cityofranchocordova.org/ Index.aspx?page=184. Accessed December 10, 2014.

DERA. *See* Sacramento County Department of Environmental Review and Assessment.

DOF. *See* California Department of Finance.

Doherty, Tom. Planner. El Dorado County, CA. December 15, 2014—phone conversation with Lindsay Kantor of AECOM regarding projects in El Dorado County within the vicinity of Prairie City SVRA.

Jordan, Jessica. Principal Planner. City of Rancho Cordova, Rancho Cordova, CA. December 10, 2014—e-mail conversation with Lindsay Kantor of AECOM regarding status of development projects and environmental documents.

Lundgren, John. Environmental Analyst. Sacramento County, CA. December 16, 2014—phone conversation with Lindsay Kantor of AECOM regarding projects in Sacramento County within the vicinity of Prairie City SVRA.

Sacramento County. 2010a. Sacramento GreenCycle Final EIR. Available: http://www.derasearch.saccounty.net/portals/0/docs/EnvDocs_Notices/200501612320100127084227.pdf. Accessed: December 28, 2014.

———. 2010b. Teichert Quarry, General Plan Amendment, Rezone, Use Permit, Reclamation Plan, Grading Permit, Encroachment Permit, and Development Agreement Final EIR. Available: http://www.per.saccounty.net/EnvironmentalDocuments/Pages/SearchDocuments.aspx. Accessed: December 28, 2014.

———. 2011. Stoneridge Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan and Development Agreement Final EIR. Available: http://www.per.saccounty.net/EnvironmentalDocuments/Pages/SearchDocuments.aspx. Accessed: December 28, 2014.

Sacramento County. 2014a. Mather South Community Master Plan. Available: http://www.per.saccounty.net/PlansandProjectsIn-Progress/Pages/SouthMatherSpecificPlan.aspx. Accessed December 11, 2014.

———. 2014b. South Sacramento Habitat Conservation Plan. Available: http://www.per.saccounty.net/PLANSANDPROJECTSIN-PROGRESS/Pages/SSHCPPlan.aspx. Accessed December 11, 2014.

Sacramento County Community Planning & Development Department. 2011 (November 9). *Sacramento County General Plan of 2005–2030.* Sacramento, CA.

Sacramento County Department of Community Development. 2014 (June 27). *Notice of Preparation of a Draft Environmental Impact Report for the Mather South Community Master Plan* (PLNP2013-00065): Available: http://www.per.saccounty.net/PlansandProjectsIn-Progress/Documents/Growth%20Area%20Plans/Mather%20South/Mather%20South%20Community%20Master%20Plan%20NOP%206-27-14.pdf. Accessed May 1, 2015.

Sacramento County Department of Environmental Review and Assessment. 2010a. *Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan, Grading Permit, Encroachment Permit, and Development Agreement Final Environmental Impact Report.*

Control Number 02-GPB-RZB-UPB-REB-DGB-0636, State Clearinghouse Number 20030702087. Sacramento, CA.

———. 2010b. *Final Environmental Impact Report for the Sacramento Greencycle Project.* Control No. 2005-PWE-0161. Sacramento, CA. Section 12, “Hydrology,” and Section 17, “Public Services.”

Sacramento County Water Agency. 2003 (November). *Draft Environmental Impact Report for the 2002 Zone 40 Water Supply Master Plan*. State Clearinghouse No. 2002122068. Prepared with assistance from Sacramento County Department of Environmental Review and Assessment. Prepared by EDAW, Sacramento, CA.

SCWA. *See* Sacramento County Water Agency.

State Parks. *See* California Department of Parks and Recreation.

USACE and City of Rancho Cordova. *See* U.S. Army Corps of Engineers, Sacramento District, and City of Rancho Cordova.

U.S. Army Corps of Engineers, Sacramento District, and City of Rancho Cordova. 2006 (December 8). *Draft Environmental Impact Report/Environmental Impact Statement for the Rio del Oro Specific Plan Project.* State Clearinghouse No. 2003122057. Sacramento and Rancho Cordova, CA. Prepared by EDAW, Sacramento, CA.

7.6 CHAPTER 5—OTHER CEQA-REQUIRED ANALYSIS

California Department of Conservation. 2009. Sacramento County Williamson Act Lands 2009 map. Scale = 1:100,000. Sacramento: Division of Land Resource Protection, Williamson Act Program. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/, select file “Sacramento_WA_08_09.pdf.” Accessed November 5, 2013.

———. 2012 (January). Sacramento County Important Farmland 2010 map. Scale = 1:100,000. Sacramento: Division of Land Resource Protection, Farmland Mapping and Monitoring Program. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/sac10.pdf, select file “sac10.pdf.” Accessed November 5, 2013.

DOC. *See* California Department of Conservation.

7.7 CHAPTER 6—ALTERNATIVES TO THE PROPOSED PROJECT

No references cited.

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8 REPORT CONTRIBUTORS

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Nick Eide, Senior Biologist

APPENDIX A

Prairie City SVRA NOP and Public Comments

State of California—The Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

NOTICE OF PREPARATION

Preparation of an Environmental Impact Report for the Prairie City State Vehicular Recreation Area General Plan

AND

Announcement of Public Scoping Meeting

Date: June 6, 2013

To: State Clearinghouse, Responsible and Trustee Agencies, and Interested Individuals and Organizations

Subject: Notice of Preparation of an Environmental Impact Report for the Prairie City State Vehicular Recreation Area General Plan

Lead Agency:
California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division
Prairie City/Twin Cities District
13300 White Rock Rd, Rancho Cordova, CA 95742
Contact: Jeanne Sisson, Sector Superintendent
Project Manager
Phone: (916) 985-1097
PrairieCityGP@parks.ca.gov

Consultant:
AECOM
2020 L Street, Suite 400
Sacramento, CA 95811
Contact: Matthew Gerken, Project Manager
Phone: (916) 414-5800
PrairieCityGP@parks.ca.gov

The California Department of Parks and Recreation (State Parks) Off-Highway Motor Vehicle Recreation (OHMVR) Division is the lead agency for the preparation of a General Plan (GP) and associated environmental impact report (EIR) for the Prairie City State Vehicular Recreation Area (SVRA). OHMVR Division 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 a program EIR is being prepared to address potential impacts resulting from implementation of the proposed *Prairie City State Vehicular Recreation Area General Plan*. Agencies should comment on the elements of potential environmental effects that are relevant to their statutory responsibilities in connection with the proposed project.

RESPONSES TO THIS NOP

Due to the time limits mandated by state law, responses to the NOP must be sent at the earliest possible date, but no later than July 6, 2013. Please send your written responses, including the name of a contact person, to:

AECOM
Attn: Matthew Gerken, Project Manager
2020 L Street, Suite 400
Sacramento, CA 95811
Email: PrairieCityGP@parks.ca.gov

PROJECT TITLE

Prairie City State Vehicular Recreation Area General Plan

PROJECT LOCATION

The regional location of the Prairie City SVRA is shown in Figure 1. The Prairie City SVRA is currently a 1,050-acre off-highway vehicle (OHV) park operated by OHMVR Division. The project area also includes the 68-acre Barton Ranch acquisition area which will be added to Prairie City SVRA upon completion of the General Plan.

Prairie City SVRA is located within unincorporated Sacramento County about two miles from the cities of Rancho Cordova and Folsom. The Folsom sphere of influence (SOI) is just north of the SVRA across White Rock and Prairie City roads (see Figure 2). To the north is land owned and operated by Aerojet, to the south is Barton Ranch, and to the south and east is land owned by Teichert.

PROJECT DESCRIPTION

A General Plan is the primary management document for each park unit within the California State Park System, including SVRAs. The General Plan establishes the primary purpose and management direction for the park unit. An approved General Plan is required before State Parks can move forward with site-specific improvements that are beyond minor capital outlay projects. The OHMVR Division is initiating the process of preparing a General Plan and associated EIR for Prairie City SVRA to develop a long-term management framework and to establish the foundation for future park improvements. As part of this framework, the General Plan will describe appropriate recreational opportunities and management strategies for Prairie City SVRA.

Preparation of the General Plan is in its early stages, so land use and resource management provisions have not been developed. Initial General Plan research included documenting existing conditions, developing and launching a project website, and outreach to park users and interested parties to raise awareness of the planning effort. The next step will be to identify potential issues and opportunities to be addressed during the planning process. Based on the results of these efforts, planning alternatives will be developed to illustrate scenarios for how the management and visitor services at Prairie City SVRA may be improved over the long term. A preferred alternative will be generated based on public input and an evaluation of the planning alternatives developed for the project. The preferred alternative will be a land use plan that will be used to prepare the General Plan.

Use areas will be designated in the General Plan. Use areas will be based on geographic relationships, resource values, management issues and goals, and visitor use and experiences. The General Plan will also contain goals and guidelines that guide Prairie City SVRA management and provide long-term direction for development of future facilities.

GENERAL PLAN TOPICS

Topics that are being considered as part of the General Plan process include the following:

- Physical, biological, aesthetic, and cultural resources
- Land use and facilities
- Visitor use and experiences
- Operation and maintenance functions
- Planning influences, such as regional population projections and public input
- Recreational trends, opportunities, and constraints
- Access and circulation
- Law enforcement and public safety
- Education and interpretation opportunities

POTENTIAL ENVIRONMENTAL IMPACTS

The ultimate use areas and associated goals and guidelines have not yet been determined. A study has been made of the resource characteristics and generally anticipated recreational uses of the project area. The planning team has identified the types of environmental impacts that may result from implementation of the General Plan and from continued recreational use of the property. The potential environmental effects that are anticipated to be addressed in the EIR include impacts on the following resource areas:

- Aesthetics
- Agriculture
- Air quality
- Biological resources
- Cultural resources
- Climate change
- Geology, soils and mineral resources
- Hazardous Materials
- Hydrology and water quality
- Land use and management
- Noise
- Public services and utilities

SCOPING MEETING/PLANNING WORKSHOP

An EIR scoping meeting/planning workshop has been scheduled to provide additional information about the General Plan process, provide interested parties with the opportunity to provide early input into potential uses of the site, and give interested parties an opportunity to comment on the scope and potential environmental effects of the project. The scoping meeting/planning workshop will be held at the following time and location:

Tuesday, June 18, 2013
6:30 pm to 8:00 pm
Folsom Community Center, West Room
52 Natoma St
Folsom, CA 95630

The workshop will be held using an open house format where attendees are welcome at any time during the meeting hours. Comments will be accepted in writing at the workshop, online, email, or by U.S. mail. Additional information about the planning process can be found on the project website:

http://www.prairiecitygeneralplan.com/

INTENDED USES OF THE EIR

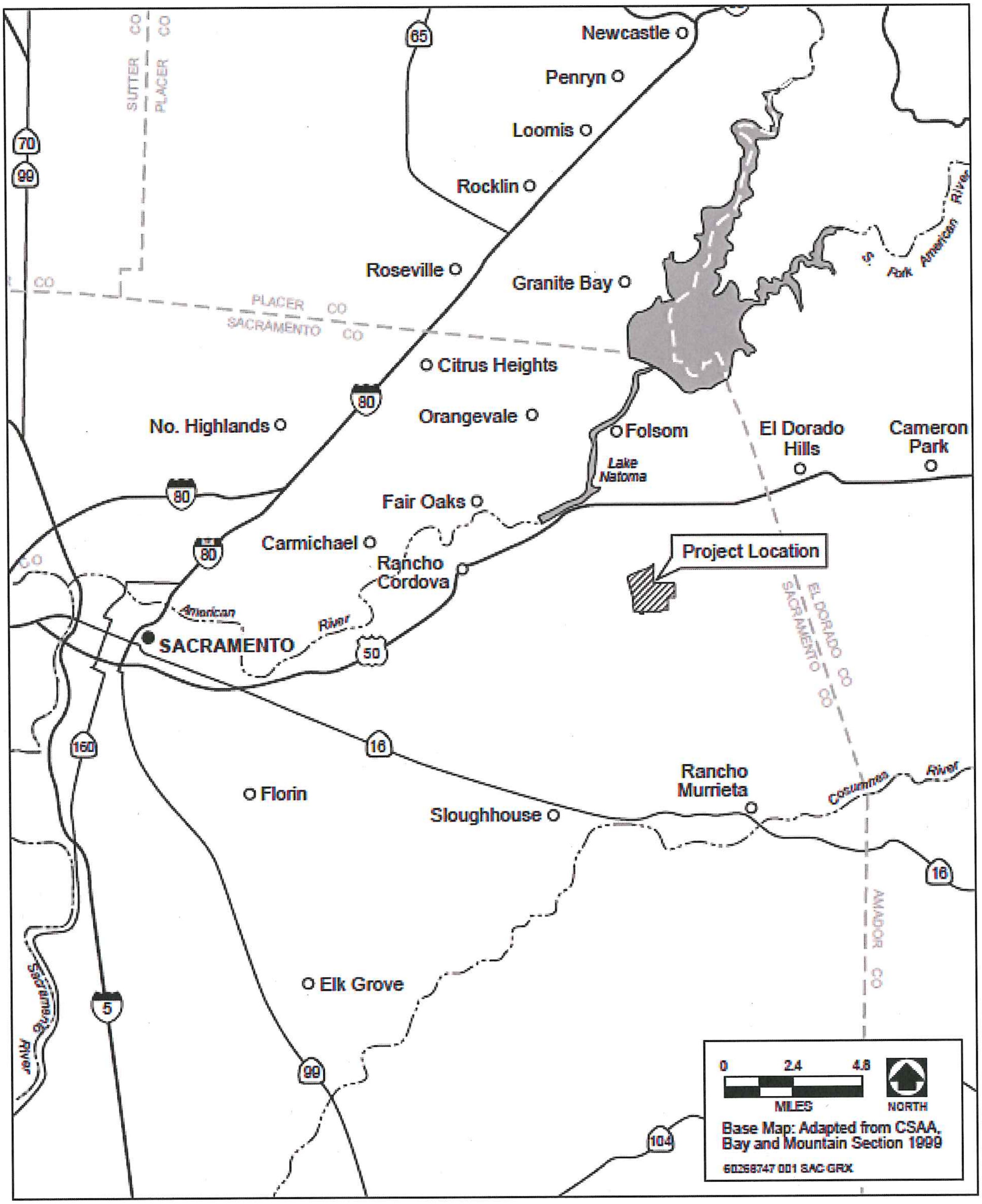
State Parks will use the EIR to consider environmental effects of the proposed General Plan, provide mitigation measures to reduce potential impacts resulting from General Plan implementation, and evaluate alternatives for site use. The OHMVR Commission will use the EIR to support decisions made related 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 a program EIR 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 before project approval and implementation (State CEQA Guidelines 15168[c]).

By: Jeanne Sisson

Signature: Jeanne Sisson

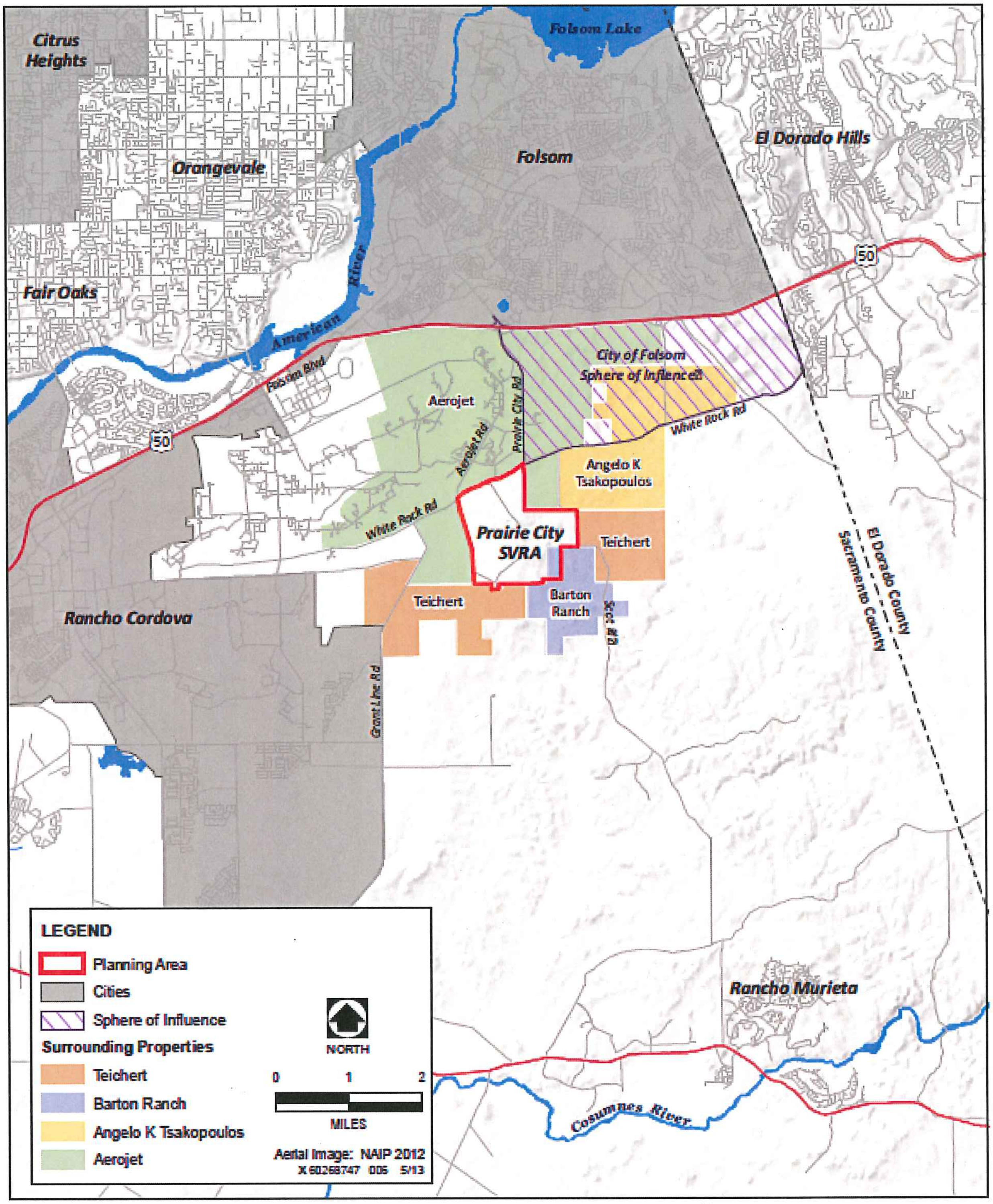
Title: Sector Superintendent

Date: June 6, 2013



Source: AECOM 2013

Figure 1 **Regional Location Map**



Source: DPR 2012, SACOG 2011

Figure 2 **Basemap**

Comment Card

Visit www.PrairieCityGeneralPlan.com to submit your comments online.

I would like to propose a 300,000 to 500,000 sq. feet of Tarmac (asphalt or concrete). It would be used for automobile and go-kart autocrossing which is a timed circuit designated by plastic traffic cones with vehicles one at a time. Other uses for this area could involve all sorts of driver training and testing. This area could also, of course, be used for parking for any event. The shape of this area does not need to be square or ever rectangular (but it can be) and can be two blocks of tarmac connected by two tarmac roads all capable of serving other uses.

* Likely areas for this project are Zones 3, 4 or 5. The area does not need to be completely flat.

Name: Jim Hearn

Address: 101 LoRing Ct

City: Folsom Zip: 95630

Email: sheRRyjimmy 6116@att.net

Add to mailing list: Y / N

Re: Prairie City General Plan and EIR
2020 L Street, Suite 400
Sacramento, CA 95811
PrairieCityGP@parks.ca.gov

PRAIRIE CITY

STATE VEHICULAR RECREATION AREA

GENERAL PLAN AND EIR

Comment Card

Visit www.PrairieCityGeneralPlan.com to submit your comments online.

Develop the PIT. Multi purpose event area

Name: Ken Heuser

Address: 6733 HAZEL Ave

City: Orange Vale Zip: 95662

Email: Ken.Heuser@G.mail.Com

Add to mailing list: Y / N

Re: Prairie City General Plan and EIR
2020 L Street, Suite 400
Sacramento, CA 95811
PrairieCityGP@parks.ca.gov

APPENDIX B

Air Quality and Greenhouse Gas Emission Calculations

Prairie City State Vehicle Recreation Area General Plan/Draft EIR Emissions Estimates

		HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
		(tons/year)					(metric tons/year)	
2004	OHMC	9.0	45.5	0.8	0.1	0.1	108.9	115
	ATV	1.7	8.3	0.1	0.0	0.0	26.3	28
	4X4	0.0	0.4	0.0	0.0	0.0	23.0	24
	Fugitive Dust	-	-	-	53.5	5.2	-	-
	On-Road Vehicles	0.6	14.7	1.9	0.0	0.0	913.7	962
	Total (tons/year)	11.3	68.9	2.8	53.6	5.4	1071.9	1128
	Total (lb/day)	72.4	440.2	18.2	342.7	34.4	6849.1	7947
2013	OHMC	5.7	33.8	0.6	0.1	0.1	80.8	85
	ATV	1.1	6.3	0.1	0.1	0.0	20.7	22
	4X4	0.0	0.1	0.0	0.0	0.0	16.1	17
	Fugitive Dust	-	-	-	39.7	3.9	-	-
	On-Road Vehicles	0.1	4.5	0.5	0.0	0.0	629.5	663
	Total (tons/year)	6.9	44.7	1.2	39.9	4.0	747.0	786
	Total (lb/day)	44.0	285.7	7.9	254.8	25.4	4773.2	5538
2030	OHMC	5.31	30.68	0.75	0.11	0.08	93.94	99
	ATV	0.99	5.70	0.11	0.02	0.02	24.04	25
	4X4	0.00	0.04	0.00	0.00	0.00	13.52	14
	Fugitive Dust	-	-	-	42.48	4.17	-	-
	On-Road Vehicles	0.03	1.52	0.16	0.00	0.00	536.76	565
	Total (tons/year)	6.33	37.94	1.02	42.62	4.27	668.26	703
	Total (lb/day)	40.46	242.44	6.53	272.34	27.29	4270.03	4955
	2004-2030 Net Change (tons/year)	-5	-31	-2	-11	-1	-404	-425
	2004-2030 Net Change (lb/day)	-32	-198	-12	-70	-7	-2579	-2993
	2013-2030 Net Change (tons/year)	-1	-7	-0.2	3	0	-79	-83
	2013-2030 Net Change (lb/day)	-4	-43	-1	18	2	-503	-584

Prairie City State Vehicle Recreation Area General Plan/Draft EIR Emissions Estimates

Base Year (2004)

																					Emissions												
												Emission Factors (g/mile)						(lb/year)						(tons/year)					(metric tons/year)	
	Vehicles	Vistors	OHVs	OHV Counts	Avg Activity Distance		Avg Activity Time		Avg Speed		VMT		Vehicle Type	Tech Group	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CO$_2$e
On-Site OHV Exhaust	77,332	193,330	126,699	OHMC	13.3	miles	3.1	hours	4.245	mi/hr	1,368,488	mi/yr	OHMC	G2	34.2	54.1	0.01	0.42	-	79.58	12382	16322	3.0	114	86	24009	6.19	8.16	0.00	0.06	0.04	10.89	11.46
				102,931										G4 Pre-1998	3.59	39.1	0.49	0.06	-	79.58	4766	42467	532	59	44	86432	2.38	21.23	0.27	0.03	0.02	39.20	41.27
														G4 1998+	0.68	19.8	0.64	0.06	-	79.58	903	32257	1043	88	66	129648	0.45	16.13	0.52	0.04	0.03	58.81	61.90
				ATVs	14.2	miles	3.2	hours	4.446	mi/hr	254,152	mi/yr	ATV	G2	34.2	54.1	0.01	0.42	-	109.63	2299	3031	0.56	21	16	6143	1.15	1.52	0.00	0.01	0.01	2.79	2.93
				17,898										G4 Pre-1998	3.59	39.1	0.64	0.06	-	109.63	885	7887	129	10.9	8.2	20704	0.44	3.94	0.06	0.01	0.00	9.39	9.89
														G4 1998+	0.68	19.8	0.49	0.06	-	109.63	157	5609	139	16.3	12.3	31056	0.08	2.80	0.07	0.01	0.01	14.09	14.83
				4X4s	8.6	miles	2.9	hours	3.018	mi/hr	50,649	mi/yr	4X4	LDT1	0.476388	10.33189	1.015192	0.012235	0.010832	397.796	16	343	34	0.4	0.4	13195	0.01	0.17	0.02	0.00	0.00	5.99	6.30
				5,870										LDT2	0.19356	5.092168	0.77648	0.006565	0.00596	478.378	15	400	61	0.5	0.5	37547	0.01	0.20	0.03	0.00	0.00	17.03	17.93

																			Emissions											
											Emission Factors (lb/VMT)						(lb/year)						(tons/year)					(metric tons/year)	
	OHVs	Mean Vehicle Weight			Mean OHV Weight		Mean OHV Speed		Mean OHV VMT			HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CO$_2$e
On-Site Fugitive Dust	118,025	OHMC	0.11	tons	0.193	tons	3.9	mi/hr	12.2	miles		-	-	-	0.161624	0.015849	-	-	-	-	233439.1	22891.83	-	-	-	-	53.46619	5.243077	-	-
		ATV	0.18	tons																										
		4X4	1.98	tons																										

																			Emissions											
											Emission Factors (g/mile)						(lb/year)						(tons/year)					(metric tons/year)	
	Vehicles	Average Miles Driven Roundtrip	VMT		Vehicles							ROG_RUN	CO_RUNE)	NOX_RUN	PM10_RU	PM2_5_R	CO2_RUN	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CO$_2$e
On-Road Vehicle Exhaust	77,332	26	2,010,632	mi/yr	Light-Duty Trucks (0-3750 lbs)							0.476388	10.33189	1.015192	0.012235	0.010832	397.796	627.3089	13605.06	1336.807	16.11129	14.26405	523818.6	0.31	6.80	0.67	0.01	0.01	237.60	250.11
					Light-Duty Trucks (3751-5750 lbs)							0.19356	5.092168	0.77648	0.006565	0.00596	478.378	603.095	15866.22	2419.364	20.4547	18.56967	1490534	0.30	7.93	1.21	0.01	0.01	676.10	711.68

Total OHMC Emissions =	9.02	45.52	0.79	0.13	0.10	108.90	114.63
Total ATV Emissions =	1.67	8.26	0.13	0.02	0.02	26.26	27.65
Total 4x4 Emissions =	0.02	0.37	0.05	0.00	0.00	23.02	24.23
On-Site Fugitive Dust Emissions =	-	-	-	53.47	5.24	-	-
On-Road Vehicle Emissions =	0.62	14.74	1.88	0.02	0.02	913.70	961.79
OHV Emissions (tons/year) =	10.7	54.2	0.97	0.15	0.12	158	167
Fugitive Dust Emissions (tons/year) =	-	-	-	53	5.2	-	-
On-Road Vehicle Emissions (tons/year) =	0.62	14.7	1.88	0.02	0.02	914	962
2004 Total Emissions (tons/year) =	11.3	68.9	2.85	54	5.4	1072	1128
OHV Emissions (lb/day) =	68	346	6.20	0.99	0.75	1011	1173
Fugitive Dust Emissions (lb/day) =	-	-	-	342	33.5	-	-
On-Road Vehicle Emissions (lb/day) =	3.9	94	12.0	0.12	0.10	5838	6146
2004 Total Emissions (lb/day) =	72	440	18.2	343	34.4	6849.072	7947.158

Base Year (2013)

																					Emissions												
															Emission Factors (g/mile)						(lb/year)						(tons/year)					(metric tons/year)	
	Vehicles	Vistors	OHVs	OHV Counts	Avg Activity Distance		Avg Activity Time		Avg Speed		VMT		Vehicle Type	Tech Group	HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
On-Site OHV Activity	56,680	141,701	94,023	OHMC	13.3	miles	3.1	hours	4.245	mi/hr	1,015,549	mi/yr	OHMC	G2	34.2	54.1	0.01	0.42	-	79.58	7657	12112	2.2	85	64	17817	3.83	6.06	0.00	0.04	0.03	8.08	8.51
				76,385										G4 Pre-1998	3.59	39.1	0.49	0.06	-	79.58	2894	31514	395	44	33	64141	1.45	15.76	0.20	0.02	0.02	29.09	30.63
														G4 1998+	0.68	19.8	0.64	0.06	-	79.58	822	23938	774	65	49	96211	0.41	11.97	0.39	0.03	0.02	43.64	45.94
				ATV	14.2	miles	3.2	hours	4.446	mi/hr	188,605	mi/yr	ATV	G2	34.2	54.1	0.01	0.42	-	109.63	1422	2249	0.42	85	12	4558	0.71	1.12	0.00	0.04	0.01	2.07	2.18
				13,282										G4 Pre-1998	3.59	39.1	0.64	0.06	-	109.63	537	5853	96	43.5	6.1	16410	0.27	2.93	0.05	0.02	0.00	7.44	7.84
														G4 1998+	0.68	19.8	0.49	0.06	-	109.63	153	4446	110	65.3	9.2	24615	0.08	2.22	0.06	0.03	0.00	11.17	11.75
				4X4	8.6	miles	2.9	hours	3.018	mi/hr	37,586	mi/yr	4X4	LDT1	0.149103	4.124873	0.41456	0.005246	0.004757	372.6279	3	93	9	0.1	0.1	8444	0.00	0.05	0.00	0.00	0.00	3.83	4.03
				4,356										LDT2	0.068151	2.291505	0.29922	0.002397	0.002183	447.6569	4	138	18	0.1	0.1	26950	0.00	0.07	0.01	0.00	0.00	12.22	12.87

																		Emissions												
												Emission Factors (lb/VMT)						(lb/year)						(tons/year)					(metric tons/year)	
	OHVs	Mean Vehicle Weight			Mean OHV Weight		Mean OHV Speed		Mean OHV VMT			HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
On-Site Fugitive Dust	87,586	OHMC	0.11	tons	0.193	tons	3.9	mi/hr	12.2	miles		-	-	-	0.161624	0.015849	-	-	-	-	173234.2	16987.94	-	-	-	-	39.67704	3.890866	-	-
		ATV	0.18	tons																										
		4X4	1.98	tons																										

																		Emissions												
												Emission Factors (g/mile)						(lb/year)						(tons/year)					(metric tons/year)	
	Vehicles	Average Miles Driven Roundtrip	VMT		Vehicles							ROG_RUN	CO_RUNE	NOX_RUN	PM10_RU	PM2_5_RU	CO2_RUN	HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	HC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
On-Road Vehicles	56,680	26	1,473,690	mi/yr	Light-Duty Trucks (0-3750 lbs)							0.149103	4.124873	0.41456	0.005246	0.004757	372.6279	132.473	3664.814	368.3225	4.661264	4.226152	331067.6	0.07	1.83	0.18	0.00	0.00	150.17	158.07
					Light-Duty Trucks (3751-5750 lbs)							0.068151	2.291505	0.29922	0.002397	0.002183	447.6569	160.8642	5408.891	706.2823	5.657972	5.153687	1056653	0.08	2.70	0.35	0.00	0.00	479.29	504.52

Total OHMC Emissions =	5.69	33.78	0.59	0.10	0.07	80.82	85.07
Total ATV Emissions =	1.06	6.27	0.10	0.10	0.01	20.68	21.76
Total 4x4 Emissions =	0.00	0.12	0.01	0.00	0.00	16.05	16.90
On-Site Fugitive Dust Emissions =	-	-	-	39.68	3.89	-	-
On-Road Vehicle Emissions =	0.15	4.54	0.54	0.01	0.00	629.46	662.59
OHV Emissions (tons/year) =	6.75	40.2	0.70	0.19	0.09	117.5	123.7
Fugitive Dust Emissions (tons/year) =	-	-	-	39.7	3.89	-	-
On-Road Vehicle Emissions (tons/year) =	0.15	4.5	0.54	0.01	0.00	629	663
2013 Total Emissions (tons/year) =	6.89	44.7	1.24	39.9	3.98	747	786
OHV Emissions (lb/day) =	43.1	257	4.49	1.24	0.55	751	872
Fugitive Dust Emissions (lb/day) =	-	-	-	254	24.9	-	-
On-Road Vehicle Emissions (lb/day) =	0.9	29	3.4	0.03	0.03	4022	4234
2013 Total Emissions (lb/day) =	44	286	7.9	255	25.4	4773.211	5538.482

Projected Future Year (2030)

																		Emissions															
													Emission Factors (g/mile)					(lb/year)						(tons/year)						(metric tons/year)	
	Vehicles	Vistors	OHVs	OHV Counts	Avg Activity Distance		Avg Activity Time		Avg Speed		Total VMT		Vehicle Type	Tech Group	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CO$_2$e
On-Site OHV Activity	66,710	166,774	109,296	OHMC	13.3	miles	3.1	hours	4.245	mi/hr	1,180,511	mi/yr	OHMC	G2	34.2	54.1	0.01	0.42	-	79.58	8901	14080	2.6	98	74.32849	20711	4.45	7.04	0.00	0.05	0.04	9.39	9.89
				88,792										G4 Pre-1998	3.59	39.1	0.49	0.06	-	79.58	168	1832	23	3	1.911304	3728	0.08	0.92	0.01	0.00	0.00	1.69	1.78
														G4 1998+	0.68	19.8	0.64	0.06	-	79.58	1561	45450	1469	124	93.65389	182671	0.78	22.72	0.73	0.06	0.05	82.86	87.22
				ATVs	14.2	miles	3.2	hours	4.446	mi/hr	219,242	mi/yr	ATV	G2	34.2	54.1	0.01	0.42	-	109.63	1653	2615	0.48	18	13.80411	5299	0.83	1.31	0.00	0.01	0.01	2.40	2.53
				15,440										G4 Pre-1998	3.59	39.1	0.64	0.06	-	109.63	31	340	6	0.5	0.354963	954	0.02	0.17	0.00	0.00	0.00	0.43	0.46
														G4 1998+	0.68	19.8	0.49	0.06	-	109.63	290	8441	209	23.0	17.39318	46736	0.14	4.22	0.10	0.01	0.01	21.20	22.31
				4X4s	8.6	miles	2.9	hours	3.018	mi/hr	43,692	mi/yr	4X4	LDT1	0.018711	0.94561	0.096813	0.002352	0.002182	258.7942	0	25	3	0.1	0.057219	6786	0.00	0.01	0.00	0.00	0.00	3.08	3.24
				5,064										LDT2	0.013763	0.741741	0.080754	0.00209	0.001939	328.4338	1	52	6	0.1	0.13593	23023	0.00	0.03	0.00	0.00	0.00	10.44	10.99

																	Emissions													
												Emission Factors (lb/VMT)					(lb/year)						(tons/year)						(metric tons/year)	
	OHVs	Mean Vehicle Weight			Mean OHV Weight		Mean OHV Speed		Mean OHV VMT			HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CO$_2$e
On-Site Fugitive Dust	101,813	OHMC	0.11	tons	0.193	tons	3.9	mi/hr	12.2	miles		-	-	-	0.161624	0.015849	-	-	-	-	201373.7	19747.39	-	-	-	-	42.48437	4.166162	-	-
		ATV	0.18	tons																										
		4X4	1.98	tons																										

																	Emissions													
												Emission Factors (g/mile)					(lb/year)						(tons/year)						(metric tons/year)	
	Vehicles	Average Miles Driven Roundtrip	VMT		Vehicles							ROG_RUN	CO_RUNE)	NOX_RUN	PM10_RU	PM2_5_R	CO2_RUN	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	HC	CO	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CO$_2$e
On-Road Vehicles	66,710	26	1,734,450	mi/yr	Light-Duty Trucks (0-3750 lbs)							0.018711	0.94561	0.096813	0.002352	0.002182	258.7942	19.47838	984.3786	100.7824	2.448115	2.271446	269404.3	0.01	0.49	0.05	0.00	0.00	122.20	128.63
					Light-Duty Trucks (3751-5750 lbs)							0.013763	0.741741	0.080754	0.00209	0.001939	328.4338	38.29812	2064.077	224.7186	5.815749	5.396056	913947.2	0.02	1.03	0.11	0.00	0.00	414.56	436.38

Total OHMC Emissions =	5.31	30.7	0.75	0.11	0.08	93.9	98.9
Total ATV Emissions =	0.99	5.70	0.11	0.02	0.02	24.04	25.30
Total 4x4 Emissions =	0.00	0.04	0.00	0.00	0.00	13.52	14.23
On-Site Fugitive Dust Emissions =	-	-	-	42.5	4.2	-	-
On-Road Vehicle Emissions =	0.03	1.52	0.16	0.00	0.00	537	565
OHV Emissions (tons/year) =	6.30	36.4	0.86	0.13	0.10	131.5	138.4
Fugitive Dust Emissions (tons/year) =	-	-	-	42	4.2	-	-
On-Road Vehicle Emissions (tons/year) =	0.03	1.52	0.16	0.00	0.00	537	565
2030 Total Emissions (tons/year) =	6.33	37.9	1.02	43	4.3	668	703
OHV Emissions (lb/day) =	40.3	233	5.49	0.85	0.64	840	975
Fugitive Dust Emissions (lb/day) =	-	-	-	271	26.6	-	-
On-Road Vehicle Emissions (lb/day) =	0.18	9.7	1.0	0.03	0.02	3430	3610
2030 Total Emissions (lb/day) =	40	242	6.5	272	27.3	4270.031	4954.629

Conversion Factors and Assumptions:

operating days per year = 313 days (SVRA is closed on Wednesdays)
1 pound = 453.6 grams
1 ton = 2000 pounds
1 metric ton = 2204.62 pounds
% of G2 vehicles in 2004 = 12%
% of G4 Pre-1998 vehicles in 2004 = 44%
% of G4 1998+ vehicles in 2004 = 44%
% of G2 vehicles in 2013 = 10%
% of G4 Pre-1998 vehicles in 2013 = 36%
% of G4 1998+ vehicles in 2013 = 54%
% of G2 vehicles in 2030 = 10%
% of G4 Pre-1998 vehicles in 2030 = 2% * Estimated based on the very old age of pre-1998 vehicles in 2030
% of G4 1998+ vehicles in2030 = 88%
% of LDT1 in 2004 = 30%
% of LDT2 in 2004 = 70%
% of LDT1 in 2013 = 27%
% of LDT2 in 2013 = 73%
% of LDT1 in 2030 = 27%
% of LDT2 in 2030 = 73%

AP-42, Section 13.2.2 - Unpaved Road Fugitive Dust Equation Inputs

surface material silt content - public (%) = 5
surface material silt content - industrial (%) = 13.5
surface material moisture content (%) = 6.515
emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (PM2.5) = 0.00036 lb/VMT
emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (PM10) = 0.00047 lb/VMT
fugitive dust constant k (PM2.5) = 0.18 lb/VMT
fugitive dust constant k (PM10) = 1.8 lb/VMT
fugitive dust constant a = 1
fugitive dust constant c = 0.2
fugitive dust constant d = 0.5
watering control efficiency = 75%
chemical control efficiency = 80%
percent of activity in areas treated with water/dust suppressants = 72%
percent of visitors for special events = 54%
percent of special event visitors that ride OHVs = 25%

APPENDIX C

Noise Fundamentals and Noise Modeling Results

APPENDIX C
FUNDAMENTALS OF ENVIRONMENTAL NOISE

C.1 SOUND, NOISE, AND ACOUSTICS

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted (loud, unexpected, or annoying) sound. Acoustics is defined as the physics of sound. In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses primarily the propagation and control of sound.

C.2 FREQUENCY

The number of sound pressure peaks traveling past a given point in a single second is referred to as the frequency, expressed in cycles per second or Hertz (Hz). A given sound may consist of energy at a single frequency (pure tone) or in many frequencies over a broad frequency range (or band). Human hearing is generally affected by sound frequencies between 20 Hz and 20,000 Hz (20 kHz).

C.3 AMPLITUDE

The amplitude of pressure waves generated by a sound source determines the perceived loudness of that source. Sound pressure amplitude is measured in micro-Pascals (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 µPa to 100,000,000 µPa. Because of this huge range of values, sound is rarely expressed in terms of pressure. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of human hearing (near total silence) is approximately 0 dB, which corresponds to 20 µPa.

C.4 ADDITION OF DECIBELS

Because decibels are logarithmic units, SPLs cannot be added or subtracted using ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two sources each produce sound of the same loudness, the resulting sound level at a given distance is approximately 3 dB higher than the sound level produced by one of the sources under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level approximately 5 dB louder than that produced by one source, and 10 sources of equal loudness together produce a sound level approximately 10 dB louder than the sound level produced by the single source.

C.5 A-WEIGHTED DECIBELS

Exhibit C-1 illustrates sound levels associated with common sound sources. The perceived loudness of sounds depends on many factors, among them the SPL and frequency content. However, within the usual range of environmental sound levels, perception of loudness is relatively predictable, and can be approximated through frequency filtering using the standardized A-weighting network. A strong correlation exists between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard descriptor for environmental noise assessment. All noise levels reported in Section 3.9, “Noise,” are in terms of A-weighting.

C.6 HUMAN RESPONSE TO CHANGES IN NOISE LEVELS

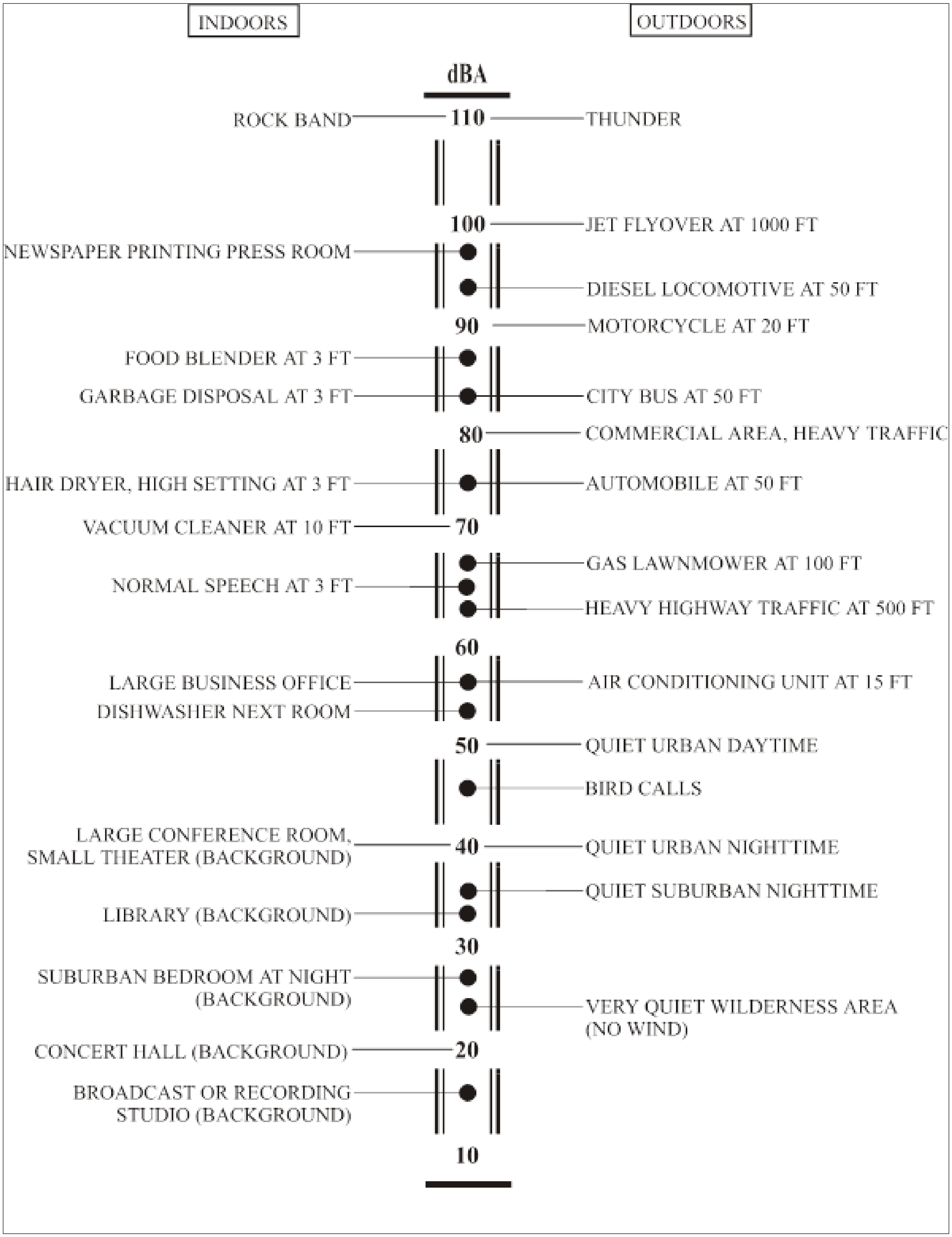
As discussed above, doubling sound energy results in a 3-dB increase in sound. However, given a sound-level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually differ from what is measured.

Under controlled conditions in a laboratory setting, the trained, healthy human ear can discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency range (1,000–8,000 Hz). In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people can begin detecting sound-level increases of 3 dB in typical noisy environments. Furthermore, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy that would result in a 3-dB increase in sound pressure level would generally be perceived as barely detectable (Table C-1).

Table C-1. Approximate Relationship between Increases in Environmental Noise Level and Human Perception

Noise Level Increase (dB)	Human perception (typical)
Up to about 3	Imperceptible
About 3	Barely perceptible
About 6	Clearly noticeable
About 10	Twice as loud
About 20	Four times as loud

Source: Egan 1988:21



Source: Caltrans 2009:Table 2-5; adapted by AECOM in 2013

Exhibit C-1. Decibel Scale and Common Noise Sources

C.7 NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, transient lodging, libraries, and certain types of recreational uses. Noise-sensitive, residential receivers are found throughout the study area.

C.8 NOISE DESCRIPTORS

Noise in our daily environments fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in environmental noise analysis, and may be applicable to this study:

- **Equivalent sound level (L_{eq}):** The L_{eq} represents an average of the sound energy occurring over a specified time period. In effect, the L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour, A-weighted equivalent sound level (L_{eq}[h]) is the energy average of A-weighted sound levels occurring during a 1-hour period, and is the basis for noise abatement criteria used by the California Department of Transportation and Federal Highway Administration.

- **Percentile-exceeded sound level (L_n):** The L_n represents the sound level exceeded “n” percentage of a specified period. For example, L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time.

- **Maximum sound level (L_{max}):** The L_{max} is the highest instantaneous sound level measured during a specified period.

- **Day-night average level (L_{dn}):** The L_{dn} is the energy-average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours (10 p.m.–7 a.m.). The L_{dn} is often noted as the DNL.

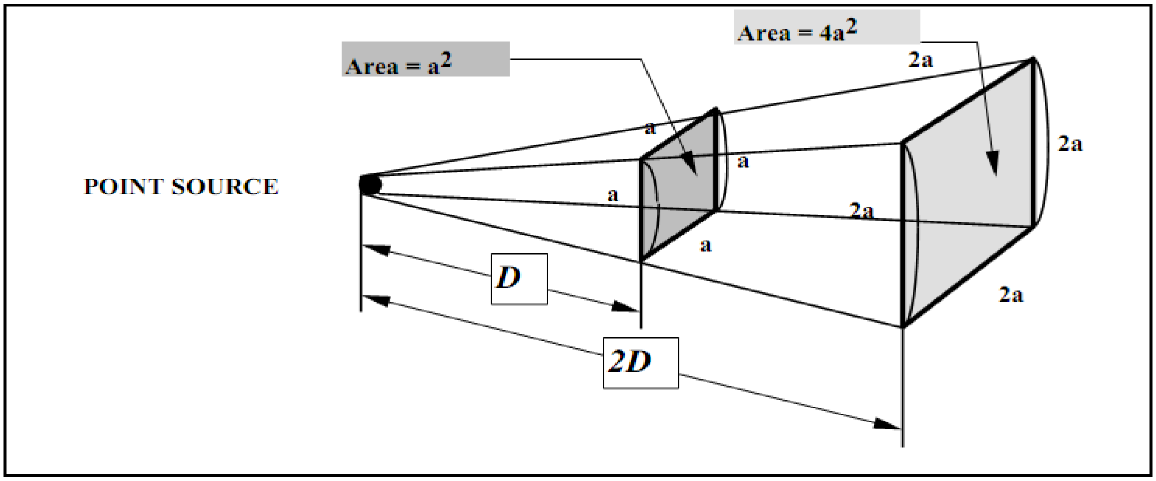
- **Community noise equivalent level (CNEL):** Similar to L_{dn}, CNEL is the energy-average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during the nighttime hours (10 p.m.–7 a.m.) and a 5-dB penalty applied to the A-weighted sound levels occurring during evening hours (7 p.m.–10 p.m.). The CNEL is usually within 1 dB of the L_{dn}, and for all intents and purposes, the two are interchangeable. Because it is easier to compute and of more common use, the L_{dn} is used as the long-term noise measure in this study.

C.9 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the factors described below.

C.9.1 GEOMETRIC SPREADING

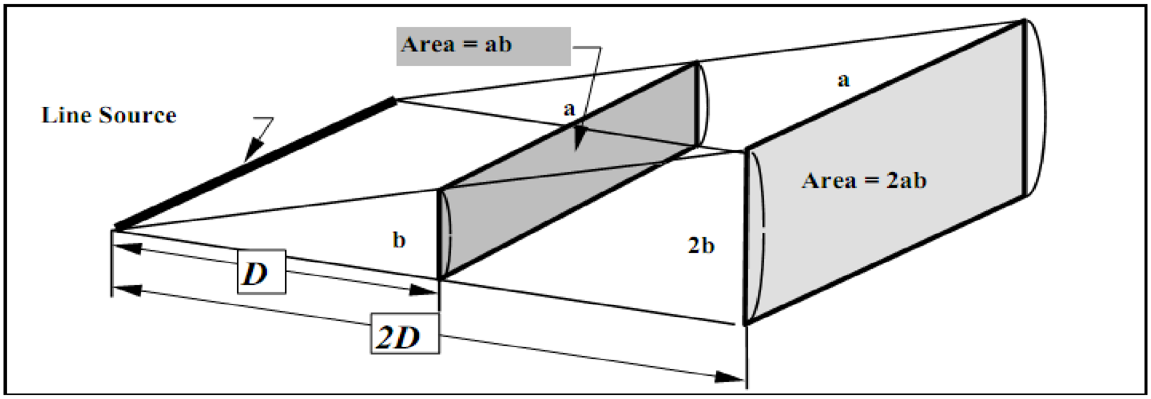
Sound from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern; therefore, this type of propagation is called *spherical spreading*. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point/stationary source as its energy is continuously spread out over a spherical surface (Exhibit C-2).



Source: Caltrans 2009:Figure 2-7

Exhibit C-2 Point-Source Spreading with Distance

Roadways, highways, and to some extent, moving trains consist of several localized noise sources on a defined path, and hence are treated as “line” sources, which approximate the effect of several point sources (Exhibit C-3). Noise from a line source propagates over a cylindrical surface, often referred to as *cylindrical spreading*. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. Therefore, noise from a line source attenuates less with distance than that of a point source with increased distance.



Source: Caltrans 2009:Figure 2-9

Exhibit C-3. Line-Source Spreading with Distance

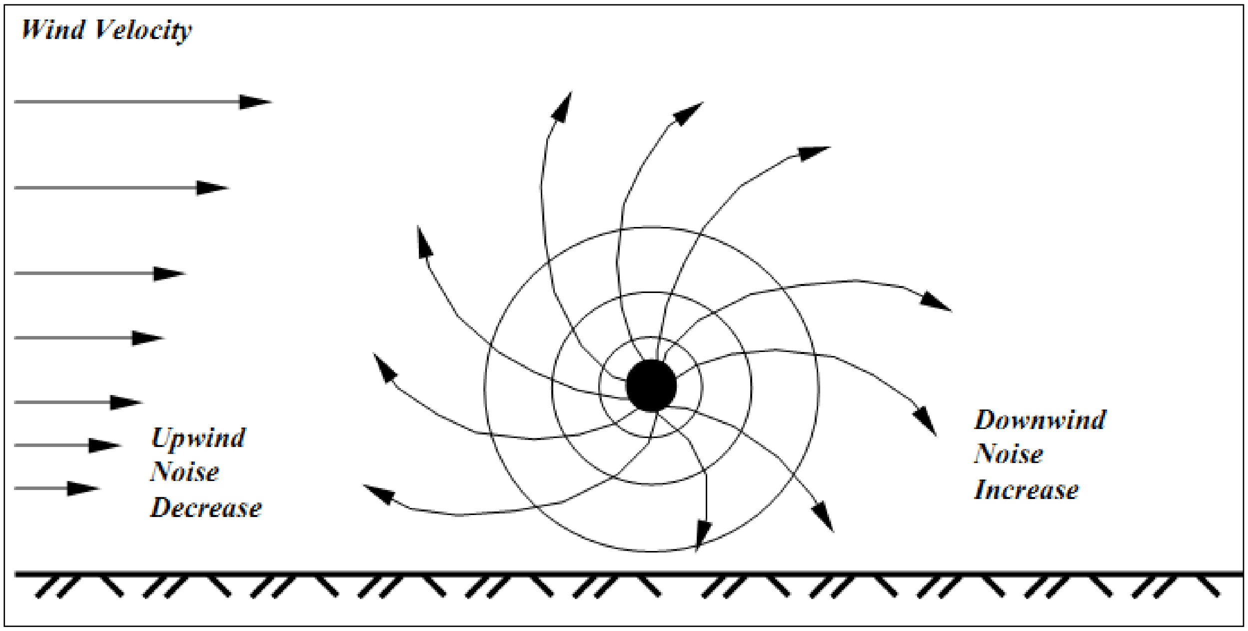
C.9.2 GROUND ABSORPTION

The propagation path of noise from many typical sources such as roadways to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. For acoustically hard sites (sites with a reflective surface between the source and the receiver, such as a paved parking lot or body of water), no excess ground attenuation is generally assumed. For acoustically absorptive or soft sites (sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 dB per doubling of distance is typically assumed. When added to cylindrical spreading from traffic noise sources, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. When added to spherical spreading (point sources), it results in overall drop-off rates of approximately 7.5 dB. These approximations generally are applicable only for receivers within 300 feet of the noise source(s), and should not be applied to sound path lengths of more than 300 feet.

C.9.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas receivers upwind from the source can have lowered noise levels (Exhibit C-4). This is a common phenomenon experienced thoughout much of California.

In addition to the enhancing effect produced by wind, sound levels can increase at large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversions (increasing temperature with elevation). Sound levels can decrease with distance from the source at a higher rate than the typical spreading loss with distance rate (see above) because of a temperature lapse condition (decreasing temperature with elevation).

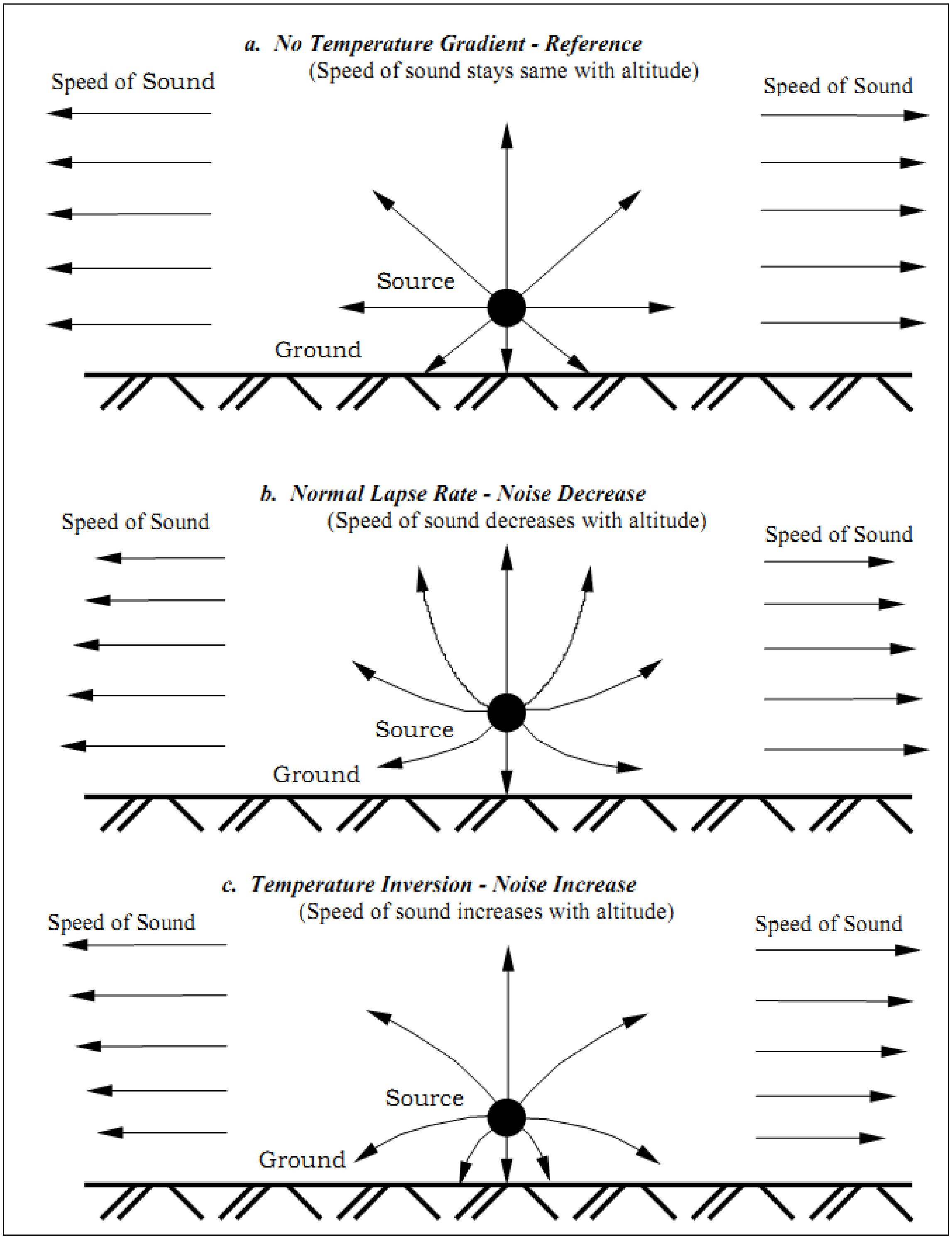


Source: Caltrans 2009:Figure 2-10

Exhibit C-4. Wind Effects on Noise Levels

Temperature inversions are common in California's meteorological environment. During a temperature inversion, the air temperature is cooler at the ground than than several hundred feet above ground. This phenomenon typically occurs when a cold, clear night follows a warm, sunny day; inversions are more frequent and intense during the fall and spring. The sun warms the earth's surface during the day, and generally the air temperature near the ground is higher than the air temperature at higher elevations. When the sun sets, however, the earth cools quickly by radiating infrared waves into space, and so does the air mass at lower elevations; thus, the air temperature becomes warmer at high elevations than near the ground. The speed of sound is higher in warmer air. This inverted temperature profile causes sound waves in the warmer air to overtake those traveling in cooler air, and the sound "bends" back toward the ground (Exhibit C-5).

Other factors such as air temperature, humidity, and turbulence also can have significant effects on sound propagation. For instance, air temperature and humidity have a significant effect on the rate of molecular absorption as sound travels large distances. A sound consisting primarily of middle frequencies such as speech or animal vocalization attenuates approximately 5 additional dB for every 1,000 feet of travel with an air temperature of 70 degrees Fahrenheit and a humidity of 30–40 percent, which is typical throughout much of California. This atmospheric effect is in addition to the other effects discussed above.



Source: Caltrans 2009:Figure 2-11

Exhibit C-5. Effects of Temperature Gradients on Noise

C.10 VIBRATION

Generally speaking, vibration is energy transmitted in waves through the ground. Because energy is lost during the transfer of energy from one particle to another, the vibratory energy is reduced with increasing distance from the source. Vibration attenuates at a rate of approximately 50 percent for each doubling of distance from the source. This approach considers only the attenuation from geometric spreading. Because additional factors also reduce vibration over distance (e.g., damping from soil condition), this approach tends to provide for a conservative assessment of vibration level at the receiver.

Vibration is an oscillatory motion that can be described in terms of the displacement, velocity, or acceleration. Vibration is typically described by its peak amplitude and its root-mean-square amplitude. The root-mean-square value can be considered an average value over a given time interval. The peak vibration velocity is the same as the "peak particle velocity," generally presented in units of inches per second. Peak particle velocity is defined as the maximum instantaneous positive or negative peak of the vibration signal, and peak particle velocity is generally used to assess the potential for damage to buildings and structures. The root-mean-square amplitude is typically used for assessing human annoyance to vibration.

C.11 REFERENCES

California Department of Transportation. 2009 (November). *Technical Noise Supplement*. Division of Environmental Analysis, Sacramento, CA. Prepared by ICF Jones & Stokes, Sacramento, CA.

Caltrans. *See* California Department of Transportation.

Egan, M. D. 1988. *Architectural Acoustics.* New York, NY: McGraw-Hill, Inc.

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Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Existing - Weekday
Ground Type : Soft
K Factor : 10
Metric (L$_{eq}$, L$_{dn}$, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : Peak

		Segment			Speed	Distance							Offset
Segment	Roadway	From	To	Traffic Vol.	(Mph)	to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	(dB)
1	Prairie City Road	WB Ramps	North of WB Ramps	1381	50	100	97	2	1	85	5	10	
2	Prairie City Road	WB Ramps	South of WB Ramps	450	50	100	97	2	1	85	5	10	
3	WB Ramps	Prairie City Road	East of Prairie City Road	997	45	100	97	2	1	85	5	10	
4	Prairie City Road	EB Ramps	North of EB Ramps	1331	50	100	97	2	1	85	5	10	
5	Prairie City Road	EB Ramps	South of EB Ramps	639	50	100	97	2	1	85	5	10	
6	EB Ramps	Prairie City Road	West of Prairie City Road	788	45	100	97	2	1	85	5	10	
7	Prairie City Road	White Rock Road	North White Rock Road	650	50	100	97	2	1	85	5	10	
8	White Rock Road	Prairie City Road	East of Prairie City Road	803	50	100	97	2	1	85	5	10	
9	White Rock Road	Prairie City Road	Special event access	1197	50	100	97	2	1	85	5	10	
	Special event access	White Rock Road	South White Rock Road	0	35	100		2	1	85	5		
11	White Rock Road	Special event access	Prairie City Road	1190	50	100	97	2	1	85	5	10	
12	White Rock Road	Special event access	Main park access	1190	50	100	97	2	1	85	5	10	
13	Main park access	White Rock Road	South White Rock Road	22	35	100	97	2	1	85	5	10	
14	White Rock Road	Main park access	Special event access	1176	50	100	97	2	1	85	5	10	
15	White Rock Road	Main park access	West of Main park access	1172	50	100	97	2	1	85	5	10	
16	Grant Line Road	White Rock Road	South White Rock Road	777	50	100	97	2	1	85	5	10	
17	White Rock Road	Grant Line Road	North of Grant Line Road	1141	50	100	97	2	1	85	5	10	
18	White Rock Road	Grant Line Road	West of Grant Line Road	428	50	100	97	2	1	85	5	10	

0

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Existing - Weekday
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Prairie City Road	WB Ramps	North of WB Ram	63.3	54.1	55.3	64.3	42	90	195	419	904
2	Prairie City Road	WB Ramps	South of WB Ram	58.4	49.2	50.4	59.5	20	43	92	199	428
3	WB Ramps	Prairie City Road	East of Prairie City	60.5	51.9	53.4	61.8	28	61	132	283	611
4	Prairie City Road	EB Ramps	North of EB Ramp	63.1	53.9	55.1	64.2	41	88	190	409	882
5	Prairie City Road	EB Ramps	South of EB Ramp	59.9	50.7	51.9	61.0	25	54	116	251	541
6	EB Ramps	Prairie City Road	West of Prairie Cit	59.5	50.9	52.4	60.8	24	52	112	242	522
7	Prairie City Road	White Rock Road	North White Rock	60.0	50.8	52.0	61.1	25	55	118	254	547
8	White Rock Road	Prairie City Road	East of Prairie City	60.9	51.7	52.9	62.0	29	63	136	292	630
9	White Rock Road	Prairie City Road	Special event acc	62.7	53.4	54.6	63.7	38	82	177	381	822
	Special event access	White Rock Road	South White Rock									
11	White Rock Road	Special event acc	Prairie City Road	62.6	53.4	54.6	63.7	38	82	176	380	818
12	White Rock Road	Special event acc	Main park access	62.6	53.4	54.6	63.7	38	82	176	380	818
13	Main park access	White Rock Road	South White Rock	40.8	33.7	35.9	42.6	1	3	7	15	32
14	White Rock Road	Main park access	Special event acc	62.6	53.4	54.6	63.6	38	81	175	377	812
15	White Rock Road	Main park access	West of Main park	62.6	53.4	54.5	63.6	38	81	175	376	810
16	Grant Line Road	White Rock Road	South White Rock	60.8	51.6	52.8	61.8	29	62	133	286	616
17	White Rock Road	Grant Line Road	North of Grant Lin	62.4	53.2	54.4	63.5	37	80	171	369	796
18	White Rock Road	Grant Line Road	West of Grant Lin	58.2	49.0	50.2	59.3	19	41	89	192	414

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Existing - Saturday Noon
Ground Type : Soft
K Factor : 10
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : Peak

		Segment			Speed	Distance							Offset
Segment	Roadway	From	To	Traffic Vol.	(Mph)	to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	(dB)
1	Prairie City Road	WB Ramps	North of WB Ramps	668	50	100	97	2	1	85	5	10	
2	Prairie City Road	WB Ramps	South of WB Ramps	493	50	100	97	2	1	85	5	10	
3	WB Ramps	Prairie City Road	East of Prairie City Road	237	45	100	97	2	1	85	5	10	
4	Prairie City Road	EB Ramps	North of EB Ramps	245	50	100	97	2	1	85	5	10	
5	Prairie City Road	EB Ramps	South of EB Ramps	305	50	100	97	2	1	85	5	10	
6	EB Ramps	Prairie City Road	West of Prairie City Road	297	45	100	97	2	1	85	5	10	
7	Prairie City Road	White Rock Road	North White Rock Road	258	50	100	97	2	1	85	5	10	
8	White Rock Road	Prairie City Road	East of Prairie City Road	350	50	100	97	2	1	85	5	10	
9	White Rock Road	Prairie City Road	Special event access	472	50	100	97	2	1	85	5	10	
	Special event access	White Rock Road	South White Rock Road	0	35	100		2	1	85	5		
11	White Rock Road	Special event access	Prairie City Road	480	50	100	97	2	1	85	5	10	
12	White Rock Road	Special event access	Main park access	480	50	100	97	2	1	85	5	10	
13	Main park access	White Rock Road	South White Rock Road	160	35	100	97	2	1	85	5	10	
14	White Rock Road	Main park access	Special event access	527	50	100	97	2	1	85	5	10	
15	White Rock Road	Main park access	West of Main park access	433	50	100	97	2	1	85	5	10	
16	Grant Line Road	White Rock Road	South White Rock Road	362	50	100	97	2	1	85	5	10	
17	White Rock Road	Grant Line Road	North of Grant Line Road	405	50	100	97	2	1	85	5	10	
18	White Rock Road	Grant Line Road	West of Grant Line Road	69	50	100	97	2	1	85	5	10	

0

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Existing - Saturday Noon
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Prairie City Road	WB Ramps	North of WB Ram	60.1	50.9	52.1	61.2	26	56	120	258	557
2	Prairie City Road	WB Ramps	South of WB Ram	58.8	49.6	50.8	59.9	21	45	98	211	455
3	WB Ramps	Prairie City Road	East of Prairie Cit	54.3	45.7	47.2	55.5	11	23	50	109	234
4	Prairie City Road	EB Ramps	North of EB Ramp	55.8	46.6	47.7	56.8	13	29	61	132	285
5	Prairie City Road	EB Ramps	South of EB Ram	56.7	47.5	48.7	57.8	15	33	71	153	330
6	EB Ramps	Prairie City Road	West of Prairie Ci	55.3	46.7	48.2	56.5	13	27	59	126	272
7	Prairie City Road	White Rock Road	North White Rock	56.0	46.8	48.0	57.1	14	30	64	137	295
8	White Rock Road	Prairie City Road	East of Prairie Cit	57.3	48.1	49.3	58.4	17	36	78	168	362
9	White Rock Road	Prairie City Road	Special event acc	58.6	49.4	50.6	59.7	21	44	95	205	442
	Special event access	White Rock Road	South White Rock									
11	White Rock Road	Special event acc	Prairie City Road	58.7	49.5	50.7	59.8	21	45	96	207	447
12	White Rock Road	Special event acc	Main park access	58.7	49.5	50.7	59.8	21	45	96	207	447
13	Main park access	White Rock Road	South White Rock	49.5	42.3	44.5	51.2	6	12	26	56	121
14	White Rock Road	Main park access	Special event acc	59.1	49.9	51.1	60.2	22	48	102	221	475
15	White Rock Road	Main park access	West of Main park	58.2	49.0	50.2	59.3	19	42	90	194	417
16	Grant Line Road	White Rock Road	South White Rock	57.5	48.3	49.4	58.5	17	37	80	172	370
17	White Rock Road	Grant Line Road	North of Grant Lin	57.9	48.7	49.9	59.0	19	40	86	185	399
18	White Rock Road	Grant Line Road	West of Grant Lin	50.3	41.1	42.2	51.3	6	12	26	57	123

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Existing - Special
Ground Type : Soft
K Factor : 10
Metric (L_{eq}**,** L_{dn}**, CNEL) :** Ldn
Traffic Desc. (Peak or ADT) : Peak

		Segment											
Segment	Roadway	From	To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Prairie City Road	WB Ramps	North of WB Ramps	964	50	100	97	2	1	85	5	10	
2	Prairie City Road	WB Ramps	South of WB Ramps	922	50	100	97	2	1	85	5	10	
3	WB Ramps	Prairie City Road	East of Prairie City Road	231	45	100	97	2	1	85	5	10	
4	Prairie City Road	EB Ramps	North of EB Ramps	1311	50	100	97	2	1	85	5	10	
5	Prairie City Road	EB Ramps	South of EB Ramps	1523	50	100	97	2	1	85	5	10	
6	EB Ramps	Prairie City Road	West of Prairie City Road	715	45	100	97	2	1	85	5	10	
7	Prairie City Road	White Rock Road	North White Rock Road	1461	50	100	97	2	1	85	5	10	
8	White Rock Road	Prairie City Road	East of Prairie City Road	610	50	100	97	2	1	85	5	10	
9	White Rock Road	Prairie City Road	Special event access	1469	50	100	97	2	1	85	5	10	
10	Special event access	White Rock Road	South White Rock Road	747	35	100	97	2	1	85	5	10	
11	White Rock Road	Special event access	Prairie City Road	1332	50	100	97	2	1	85	5	10	
12	White Rock Road	Special event access	Main park access	787	50	100	97	2	1	85	5	10	
13	Main park access	White Rock Road	South White Rock Road	1294	35	100	97	2	1	85	5	10	
14	White Rock Road	Main park access	Special event access	688	50	100	97	2	1	85	5	10	
15	White Rock Road	Main park access	West of Main park access	1378	50	100	97	2	1	85	5	10	
16	Grant Line Road	White Rock Road	South White Rock Road	692	50	100	97	2	1	85	5	10	
17	White Rock Road	Grant Line Road	North of Grant Line Road	1336	50	100	97	2	1	85	5	10	
18	White Rock Road	Grant Line Road	West of Grant Line Road	894	50	100	97	2	1	85	5	10	

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Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Existing - Special
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Prairie City Road	WB Ramps	North of WB Ram	61.7	52.5	53.7	62.8	33	71	153	330	711
2	Prairie City Road	WB Ramps	South of WB Ram	61.5	52.3	53.5	62.6	32	69	149	320	690
3	WB Ramps	Prairie City Road	East of Prairie Cit	54.2	45.6	47.1	55.4	11	23	50	107	230
4	Prairie City Road	EB Ramps	North of EB Ramp	63.1	53.8	55.0	64.1	41	87	188	405	873
5	Prairie City Road	EB Ramps	South of EB Ram	63.7	54.5	55.7	64.8	45	96	208	448	965
6	EB Ramps	Prairie City Road	West of Prairie Ci	59.1	50.5	52.0	60.3	23	49	105	227	489
7	Prairie City Road	White Rock Road	North White Rock	63.5	54.3	55.5	64.6	44	94	202	436	938
8	White Rock Road	Prairie City Road	East of Prairie Cit	59.7	50.5	51.7	60.8	24	52	113	243	524
9	White Rock Road	Prairie City Road	Special event acc	63.5	54.3	55.5	64.6	44	94	203	437	942
10	Special event access	White Rock Road	South White Rock	56.1	49.0	51.2	57.9	16	34	73	157	338
11	White Rock Road	Special event acc	Prairie City Road	63.1	53.9	55.1	64.2	41	88	190	410	882
12	White Rock Road	Special event acc	Main park access	60.8	51.6	52.8	61.9	29	62	134	288	621
13	Main park access	White Rock Road	South White Rock	58.5	51.4	53.6	60.3	23	49	105	226	488
14	White Rock Road	Main park access	Special event acc	60.3	51.0	52.2	61.3	26	57	122	264	568
15	White Rock Road	Main park access	West of Main park	63.3	54.1	55.2	64.3	42	90	194	419	902
16	Grant Line Road	White Rock Road	South White Rock	60.3	51.1	52.3	61.3	26	57	123	265	570
17	White Rock Road	Grant Line Road	North of Grant Lin	63.1	53.9	55.1	64.2	41	88	190	410	884
18	White Rock Road	Grant Line Road	West of Grant Lin	61.4	52.2	53.4	62.5	31	68	146	314	676

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Weekday (2030)
Ground Type : Soft **K Factor :** 10
Metric (L_{eq}, L_{dn}, CNEL) : Ldn **Traffic Desc. (Peak or ADT) :** Peak

		Segment			Speed	Distance							Offset
Segment	Roadway	From	To	Traffic Vol.	(Mph)	to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	(dB)
1	Prairie City Road	WB Ramps	North of WB Ramps	4340	50	100	97	2	1	85	5	10	
2	Prairie City Road	WB Ramps	South of WB Ramps	3415	50	100	97	2	1	85	5	10	
3	WB Ramps	Prairie City Road	East of Prairie City Road	1105	45	100	97	2	1	85	5	10	
4	Prairie City Road	EB Ramps	North of EB Ramps	2840	50	100	97	2	1	85	5	10	
5	Prairie City Road	EB Ramps	South of EB Ramps	3075	50	100	97	2	1	85	5	10	
6	EB Ramps	Prairie City Road	West of Prairie City Road	790	45	100	97	2	1	85	5	10	
7	Prairie City Road	White Rock Road	North White Rock Road	2310	50	100	97	2	1	85	5	10	
8	White Rock Road	Prairie City Road	East of Prairie City Road	3425	50	100	97	2	1	85	5	10	
9	White Rock Road	Prairie City Road	Special event access	5005	50	100	97	2	1	85	5	10	
	Special event access	White Rock Road	South White Rock Road	0	35	100		2	1	85	5		
11	White Rock Road	Special event access	Prairie City Road	4840	50	100	97	2	1	85	5	10	
12	White Rock Road	Special event access	Main park access	4840	50	100	97	2	1	85	5	10	
13	Main park access	White Rock Road	South White Rock Road	28	35	100	97	2	1	85	5	10	
14	White Rock Road	Main park access	Special event access	4834	50	100	97	2	1	85	5	10	
15	White Rock Road	Main park access	West of Main park access	4834	50	100	97	2	1	85	5	10	
16	Grant Line Road	White Rock Road	South White Rock Road	3217	50	100	97	2	1	85	5	10	
17	White Rock Road	Grant Line Road	North of Grant Line Road	4830	50	100	97	2	1	85	5	10	
18	White Rock Road	Grant Line Road	West of Grant Line Road	1647	50	100	97	2	1	85	5	10	

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Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Weekday (2030)
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Prairie City Road	WB Ramps	North of WB Ram	68.2	59.0	60.2	69.3	90	194	418	900	1939
2	Prairie City Road	WB Ramps	South of WB Ram	67.2	58.0	59.2	68.3	77	165	356	767	1653
3	WB Ramps	Prairie City Road	East of Prairie City	61.0	52.4	53.9	62.2	30	65	141	304	654
4	Prairie City Road	EB Ramps	North of EB Ramp	66.4	57.2	58.4	67.5	68	146	315	678	1462
5	Prairie City Road	EB Ramps	South of EB Ram	66.8	57.5	58.7	67.8	72	154	332	715	1541
6	EB Ramps	Prairie City Road	West of Prairie Cit	59.5	50.9	52.4	60.8	24	52	113	243	523
7	Prairie City Road	White Rock Road	North White Rock	65.5	56.3	57.5	66.6	59	127	274	591	1274
8	White Rock Road	Prairie City Road	East of Prairie City	67.2	58.0	59.2	68.3	77	166	357	769	1656
9	White Rock Road	Prairie City Road	Special event acc	68.9	59.7	60.9	69.9	99	213	459	990	2132
	Special event access	White Rock Road	South White Rock									
11	White Rock Road	Special event acc	Prairie City Road	68.7	59.5	60.7	69.8	97	209	449	968	2085
12	White Rock Road	Special event acc	Main park access	68.7	59.5	60.7	69.8	97	209	449	968	2085
13	Main park access	White Rock Road	South White Rock	41.9	34.7	36.9	43.7	2	4	8	18	38
14	White Rock Road	Main park access	Special event acc	68.7	59.5	60.7	69.8	97	208	449	967	2084
15	White Rock Road	Main park access	West of Main park	68.7	59.5	60.7	69.8	97	208	449	967	2084
16	Grant Line Road	White Rock Road	South White Rock	66.9	57.7	58.9	68.0	74	159	342	737	1588
17	White Rock Road	Grant Line Road	North of Grant Lin	68.7	59.5	60.7	69.8	97	208	449	967	2082
18	White Rock Road	Grant Line Road	West of Grant Lin	64.0	54.8	56.0	65.1	47	102	219	472	1016

Traffic Noise Prediction Model, (FHWA RD-77-108)
Model Input Sheet

AECOM

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Saturday Noon (2030)
Ground Type : Soft
K Factor : 10
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : Peak

		Segment											
Segment	Roadway	From	To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Prairie City Road	WB Ramps	North of WB Ramps	1650	50	100	97	2	1	85	5	10	
2	Prairie City Road	WB Ramps	South of WB Ramps	1300	50	100	97	2	1	85	5	10	
3	WB Ramps	Prairie City Road	East of Prairie City Road	420	45	100	97	2	1	85	5	10	
4	Prairie City Road	EB Ramps	North of EB Ramps	1080	50	100	97	2	1	85	5	10	
5	Prairie City Road	EB Ramps	South of EB Ramps	1170	50	100	97	2	1	85	5	10	
6	EB Ramps	Prairie City Road	West of Prairie City Road	300	45	100	97	2	1	85	5	10	
7	Prairie City Road	White Rock Road	North White Rock Road	875	50	100	97	2	1	85	5	10	
8	White Rock Road	Prairie City Road	East of Prairie City Road	1300	50	100	97	2	1	85	5	10	
9	White Rock Road	Prairie City Road	Special event access	1895	50	100	97	2	1	85	5	10	
	Special event access	White Rock Road	South White Rock Road	0	35	100		2	1	85	5		
11	White Rock Road	Special event access	Prairie City Road	1935	50	100	97	2	1	85	5	10	
12	White Rock Road	Special event access	Main park access	1935	50	100	97	2	1	85	5	10	
13	Main park access	White Rock Road	South White Rock Road	139	35	100	97	2	1	85	5	10	
14	White Rock Road	Main park access	Special event access	1934	50	100	97	2	1	85	5	10	
15	White Rock Road	Main park access	West of Main park access	1875	50	100	97	2	1	85	5	10	
16	Grant Line Road	White Rock Road	South White Rock Road	1221	50	100	97	2	1	85	5	10	
17	White Rock Road	Grant Line Road	North of Grant Line Road	1835	50	100	97	2	1	85	5	10	
18	White Rock Road	Grant Line Road	West of Grant Line Road	626	50	100	97	2	1	85	5	10	

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Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Saturday Noon (2030)
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Prairie City Road	WB Ramps	North of WB Ram	64.0	54.8	56.0	65.1	47	102	219	472	1018
2	Prairie City Road	WB Ramps	South of WB Ram	63.0	53.8	55.0	64.1	40	87	187	403	868
3	WB Ramps	Prairie City Road	East of Prairie City	56.8	48.2	49.7	58.0	16	34	74	159	343
4	Prairie City Road	EB Ramps	North of EB Ramp	62.2	53.0	54.2	63.3	36	77	165	356	767
5	Prairie City Road	EB Ramps	South of EB Ramp	62.6	53.3	54.5	63.6	38	81	174	376	809
6	EB Ramps	Prairie City Road	West of Prairie Cit	55.3	46.7	48.2	56.6	13	27	59	127	274
7	Prairie City Road	White Rock Road	North White Rock	61.3	52.1	53.3	62.4	31	67	144	309	667
8	White Rock Road	Prairie City Road	East of Prairie City	63.0	53.8	55.0	64.1	40	87	187	403	868
9	White Rock Road	Prairie City Road	Special event acc	64.7	55.4	56.6	65.7	52	112	240	518	1116
	Special event access	White Rock Road	South White Rock									
11	White Rock Road	Special event acc	Prairie City Road	64.7	55.5	56.7	65.8	53	113	244	525	1132
12	White Rock Road	Special event acc	Main park access	64.7	55.5	56.7	65.8	53	113	244	525	1132
13	Main park access	White Rock Road	South White Rock	48.8	41.7	43.9	50.6	5	11	24	51	110
14	White Rock Road	Main park access	Special event acc	64.7	55.5	56.7	65.8	53	113	244	525	1131
15	White Rock Road	Main park access	West of Main park	64.6	55.4	56.6	65.7	51	111	239	514	1108
16	Grant Line Road	White Rock Road	South White Rock	62.7	53.5	54.7	63.8	39	83	179	386	833
17	White Rock Road	Grant Line Road	North of Grant Lin	64.5	55.3	56.5	65.6	51	109	235	507	1092
18	White Rock Road	Grant Line Road	West of Grant Lin	59.8	50.6	51.8	60.9	25	53	115	248	533

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Saturday Special (2030)
Ground Type : Soft
K Factor : 10
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : Peak

		Segment											
Segment	Roadway	From	To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Prairie City Road	WB Ramps	North of WB Ramps	1840	50	100	97	2	1	85	5	10	
2	Prairie City Road	WB Ramps	South of WB Ramps	1555	50	100	97	2	1	85	5	10	
3	WB Ramps	Prairie City Road	East of Prairie City Road	455	45	100	97	2	1	85	5	10	
4	Prairie City Road	EB Ramps	North of EB Ramps	2080	50	100	97	2	1	85	5	10	
5	Prairie City Road	EB Ramps	South of EB Ramps	2770	50	100	97	2	1	85	5	10	
6	EB Ramps	Prairie City Road	West of Prairie City Road	700	45	100	97	2	1	85	5	10	
7	Prairie City Road	White Rock Road	North White Rock Road	2505	50	100	97	2	1	85	5	10	
8	White Rock Road	Prairie City Road	East of Prairie City Road	1535	50	100	97	2	1	85	5	10	
9	White Rock Road	Prairie City Road	Special event access	3210	50	100	97	2	1	85	5	10	
10	Special event access	White Rock Road	South White Rock Road	1278	35	100	97	2	1	85	5	10	
11	White Rock Road	Special event access	Prairie City Road	3152	50	100	97	2	1	85	5	10	
12	White Rock Road	Special event access	Main park access	2046	50	100	97	2	1	85	5	10	
13	Main park access	White Rock Road	South White Rock Road	1543	35	100	97	2	1	85	5	10	
14	White Rock Road	Main park access	Special event access	2141	50	100	97	2	1	85	5	10	
15	White Rock Road	Main park access	West of Main park access	2962	50	100	97	2	1	85	5	10	
16	Grant Line Road	White Rock Road	South White Rock Road	1631	50	100	97	2	1	85	5	10	
17	White Rock Road	Grant Line Road	North of Grant Line Road	2960	50	100	97	2	1	85	5	10	
18	White Rock Road	Grant Line Road	West of Grant Line Road	1341	50	100	97	2	1	85	5	10	

0

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Prairie City SVRA
Project Number : 60268747
Modeling Condition : Saturday Special (2030)
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Prairie City Road	WB Ramps	North of WB Ram	64.5	55.3	56.5	65.6	51	109	236	508	1094
2	Prairie City Road	WB Ramps	South of WB Ram	63.8	54.6	55.8	64.9	45	98	211	454	978
3	WB Ramps	Prairie City Road	East of Prairie Cit	57.1	48.5	50.0	58.4	17	36	78	168	362
4	Prairie City Road	EB Ramps	North of EB Ramp	65.1	55.8	57.0	66.1	55	119	256	551	1188
5	Prairie City Road	EB Ramps	South of EB Ram	66.3	57.1	58.3	67.4	67	144	310	667	1437
6	EB Ramps	Prairie City Road	West of Prairie Cit	59.0	50.4	51.9	60.3	22	48	104	224	482
7	Prairie City Road	White Rock Road	North White Rock	65.9	56.7	57.8	66.9	62	134	290	624	1344
8	White Rock Road	Prairie City Road	East of Prairie Cit	63.7	54.5	55.7	64.8	45	97	209	450	970
9	White Rock Road	Prairie City Road	Special event acc	66.9	57.7	58.9	68.0	74	159	342	736	1586
10	Special event access	White Rock Road	South White Rock	58.5	51.3	53.5	60.3	22	48	104	224	484
11	White Rock Road	Special event acc	Prairie City Road	66.9	57.6	58.8	67.9	73	157	338	727	1567
12	White Rock Road	Special event acc	Main park access	65.0	55.8	57.0	66.0	55	117	253	545	1175
13	Main park access	White Rock Road	South White Rock	59.3	52.1	54.3	61.1	25	55	118	255	548
14	White Rock Road	Main park access	Special event acc	65.2	56.0	57.2	66.2	56	121	261	562	1211
15	White Rock Road	Main park access	West of Main park	66.6	57.4	58.6	67.7	70	150	324	698	1503
16	Grant Line Road	White Rock Road	South White Rock	64.0	54.8	56.0	65.1	47	101	218	469	1010
17	White Rock Road	Grant Line Road	North of Grant Lin	66.6	57.4	58.6	67.7	70	150	324	697	1502
18	White Rock Road	Grant Line Road	West of Grant Lin	63.1	53.9	55.1	64.2	41	89	191	411	886

APPENDIX D

Traffic Report

EXISTING TRAFFIC CONDITIONS REPORT
FOR THE
PRAIRIE CITY STATE VEHICULAR RECREATION AREA GENERAL PLAN AND ENVIRONMENTAL IMPACT REPORT

Prepared For:

AECOM
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Prepared By:

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October 26, 2015

0090-04

TABLE OF CONTENTS

INTRODUCTION..**1**

EXISTING SETTING..**1**

- Existing Traffic Volumes...3
- Evaluation Methodology..7
- Existing Levels of Service..9
- Existing Trip Generation...12
- Existing Directional Distribution...13

APPENDIX...**14**

EXISTING TRAFFIC CONDITIONS REPORT FOR THE PRAIRIE CITY SVRA GENERAL PLAN AND EIR

INTRODUCTION

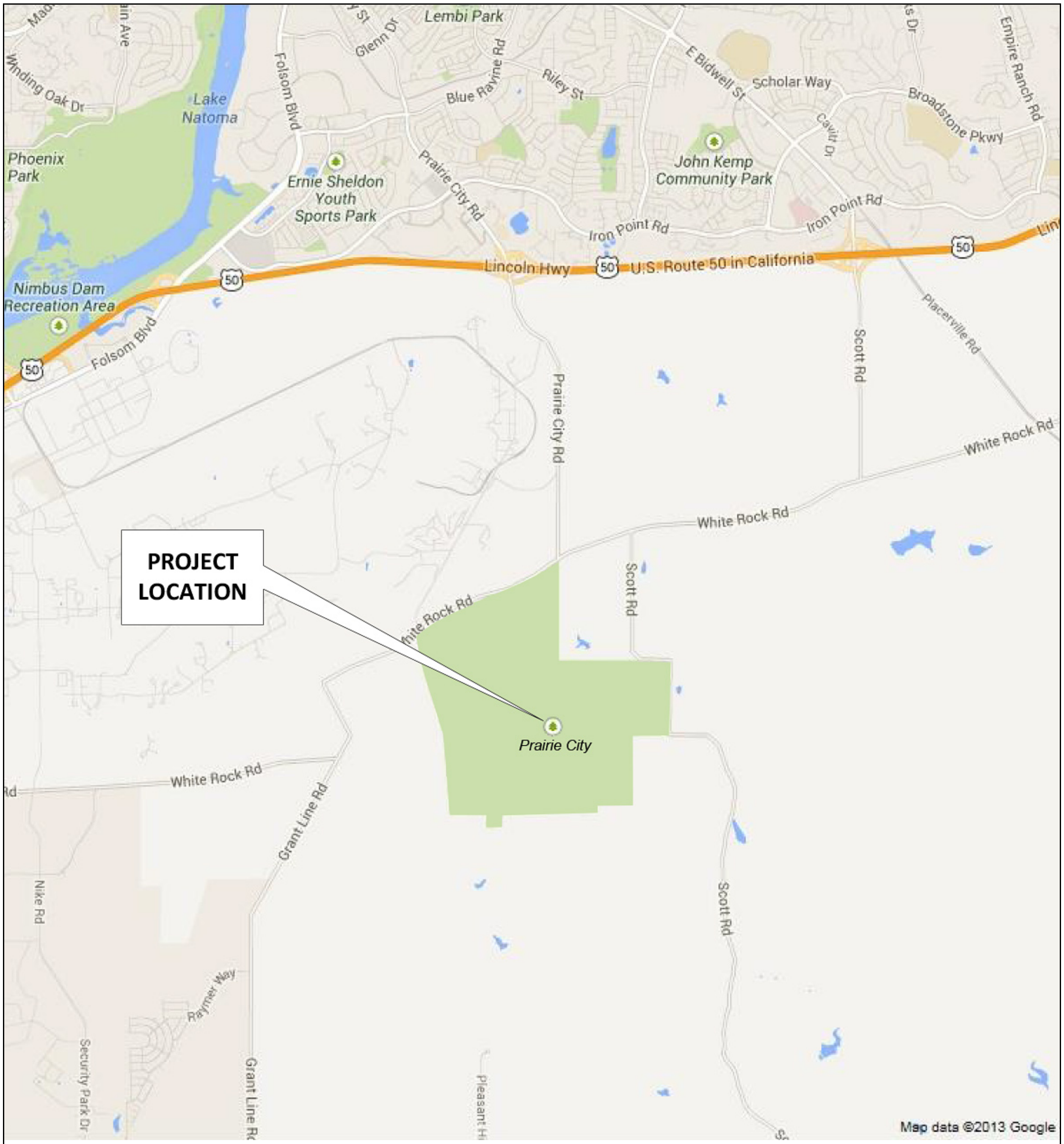
This report presents KD Anderson & Associates' evaluation of existing traffic conditions in the vicinity of the Prairie City State Vehicular Recreation Area (SVRA). The report has been prepared for the general plan and environmental impact report (EIR) being prepared for Prairie City SVRA. Existing roadway and intersection operations in the vicinity of the site have been evaluated relative to both weekday and Saturday peak-hour traffic conditions. Daily and peak-hour traffic counts have been performed by the consultant together with a field review of existing circulation conditions. Figure 1 displays the location of Prairie City SVRA and surrounding circulation system.

EXISTING SETTING

The study area limits include intersections and roadway segments in the vicinity of Prairie City SVRA that provide regional access and direct local access to the SVRA. The traffic analysis investigates the operational characteristics of the following intersections and roadway segments:

Intersections:
1. Prairie City Road/U.S. Highway 50 (U.S. 50) westbound ramps
2. Prairie City Road/U.S. 50 eastbound ramps
3. White Rock Road/Prairie City Road
4. White Rock Road/special event access (Gate 4)
5. White Rock Road/main park access (Gate 1)
6. Grant Line Road/White Rock Road

Roadway segments
1. White Rock Road west of main park access
2. White Rock Road east of main park access
3. Prairie City Road north of White Rock Road
4. Main park access road south of White Rock Road



Map data ©2013 Google

60268747 SAC GRX 020

VICINITY MAP

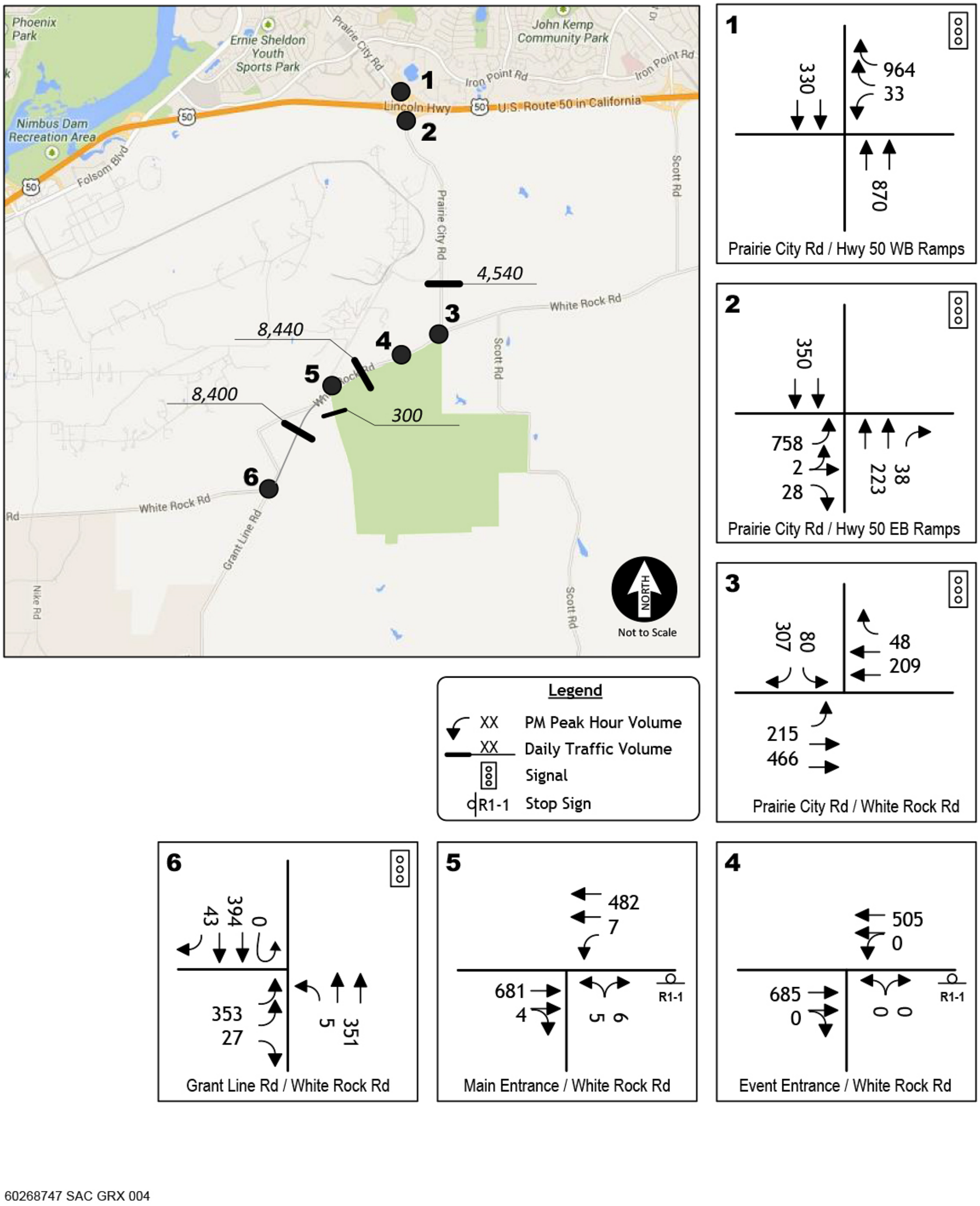
Figure 1

Existing Traffic Volumes

Figures 2 through 4 display existing peak-hour intersection and roadway volumes used for this analysis. Traffic counts were conducted in March, April, and May 2013 and consisted of 24-hour roadway counts and weekday p.m. and Saturday midday peak-hour intersection turning movement counts. Intersection traffic counts were conducted for 2-hour intervals to isolate the weekday p.m. peak hour (between 4:45 p.m. and 5:45 p.m.) and Saturday midday peak-hour (between 11:45 a.m. and 12:45 p.m.) volumes. Counts were conducted during clear weather conditions on a nonholiday week when schools were in session.

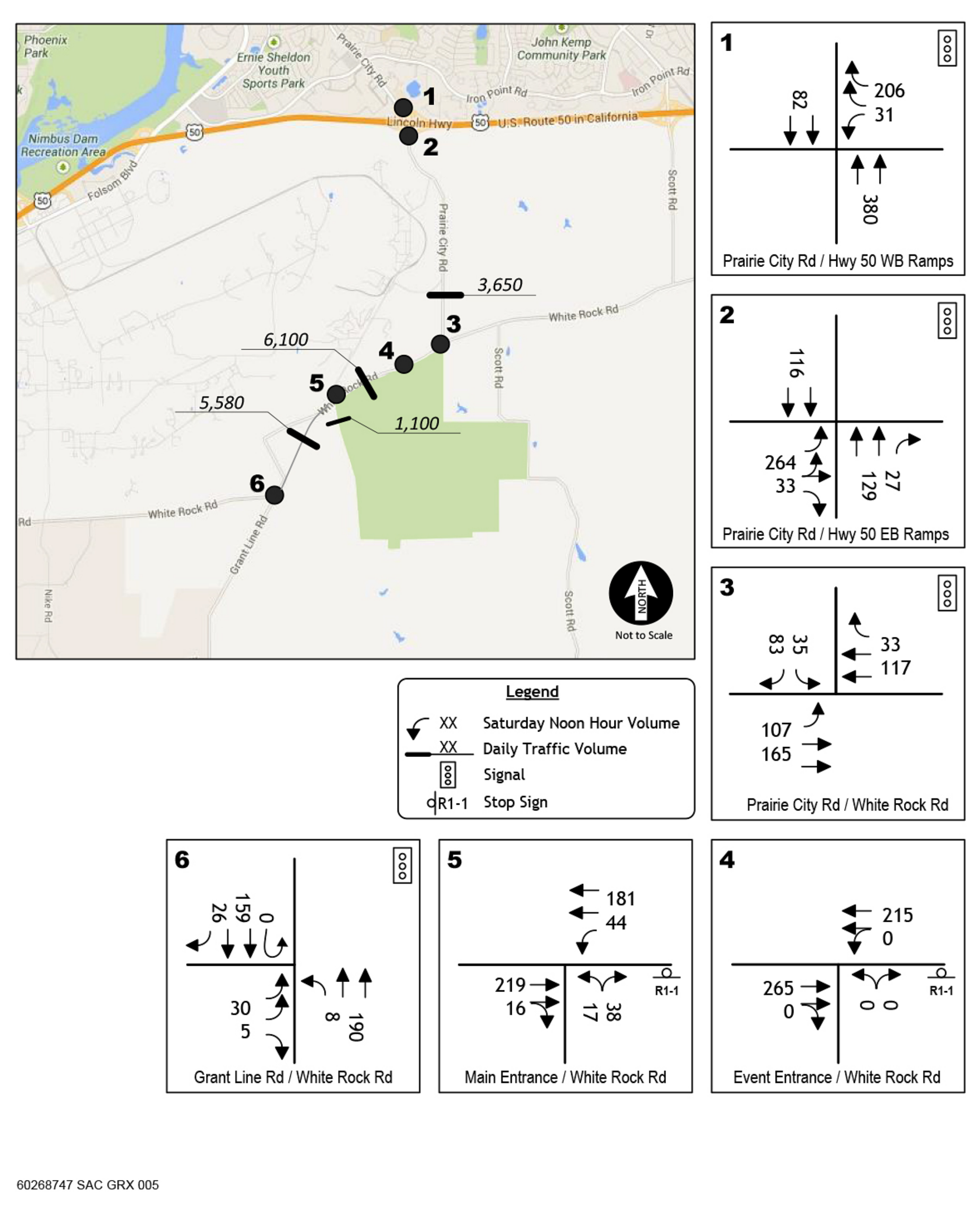
Weekday counts were conducted on a Thursday in April (Figure 2) and reflect typical park attendance under good weather conditions. The Thursday period was also chosen because the Prairie City Motocross Track is open to the public on this weekday for motocross practice. Saturday counts were conducted in March (Figure 3) and were performed on a weekend when several smaller events were being hosted at several of the SVRA track venues in addition to typical open park attendance.

The special event counts conducted on a Saturday in May (Figure 4) were performed in conjunction with the Hangtown Motocross Classic. This race is hosted annually at Prairie City SVRA and is the largest attendance event at the park.



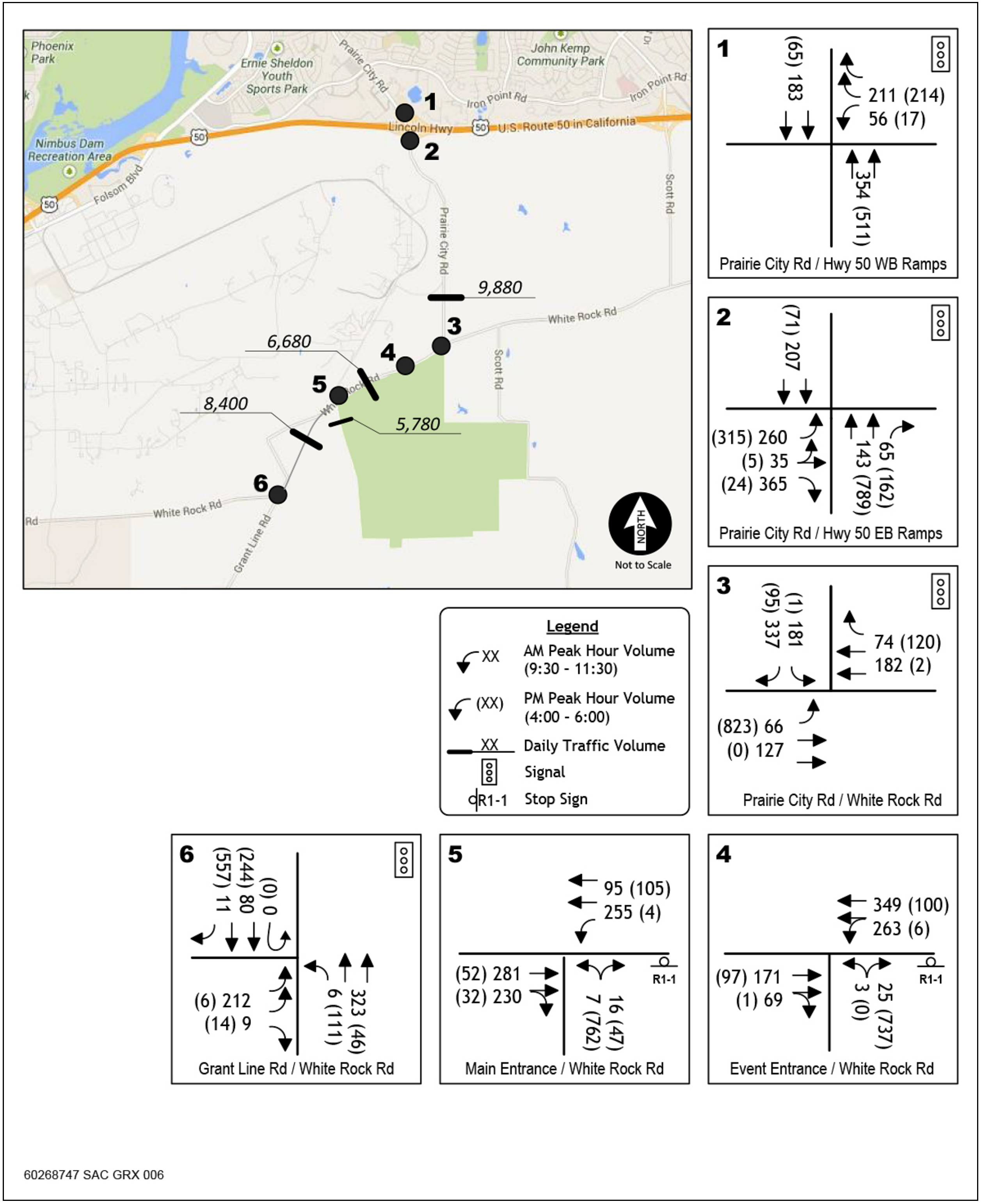
EXISTING TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (APRIL 2013)

Figure 2



EXISTING TRAFFIC VOLUMES
SATURDAY NOON HOUR (MARCH 2013)

Figure 3



EXISTING TRAFFIC VOLUMES
SATURDAY SPECIAL EVENT (MAY 2013)

Figure 4

Evaluation Methodology

The methodology used to analyze existing intersection and roadway operations follows an approach that is recognized by members of the traffic engineering profession, is consistent with the California Environmental Quality Act (CEQA) Guidelines, and conforms to local jurisdiction guidelines for traffic studies. The methodology used in the preparation of this traffic impact study is consistent with guidance provided in *Traffic Impact Analysis Guidelines–County of Sacramento–July 2004* (Sacramento County 2004).

Level of Service Concept. Circulation systems are typically evaluated by comparing the system's capacity and the existing/projected level of traffic volumes. The operating conditions experienced by motorists are described in terms of level of service (LOS). Level of service is a qualitative measure that reflects a number of factors: speed and travel time, traffic interruptions, freedom to maneuver, and driving comfort and convenience. Levels of service are designated on a scale from LOS A to LOS F, with LOS A representing the best performance and LOS F the worst. Capacity analyses are separated into evaluations of both intersections and roadway segment locations.

Analysis of LOS and signal warrants are typically used to evaluate traffic conditions and the impacts of a particular project or action. Local agencies typically adopt minimum LOS standards for their facilities.

TABLE 1
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Sum of Critical Lane Volumes by Signal Phasing (vehicles/critical lane/hour)		
	2-Phase	3-Phase	4 or more Phase
A	0–990	0–930	0–900
B	991–1,155	931–1,085	901–1,050
C	1,156–1,320	1,086–1,240	1,051–1,200
D	1,321–1,485	1,241–1,395	1,201–1,350
E	1,486–1,650	1,396–1,550	1,351–1,500
F	>1,650	>1,550	>1,500
Source: Transportation Research Board 2000			

Sources: *Interim Materials on Highway Capacity, Circular 212,* Transportation Research Board 1980; and Sacramento County Department of Transportation.

TABLE 2
LEVEL OF SERVICE CRITERIA FOR TWO-WAY STOP-CONTROLLED INTERSECTIONS

Level of Service	Average Control Delay in Seconds per Vehicle	Description of Delay
A	0–10	Little or no delay.
B	> 10–15	Short traffic delay.
C	> 15–25	Average traffic delay.
D	> 25–35	Long traffic delay.
E	> 35–50	Very long traffic delay.
F	> 50	Extreme delays potentially affecting other traffic movements in the intersection.

TABLE 3
ROADWAY LEVEL OF SERVICE CRITERIA

Facility Type	# of Lanes	Maximum Daily Volume by Service Level				
		A	B	C	D	E
Residential	2	600	1,200	2,000	3,000	4,500
Residential Collector with Frontage	2	1,600	3,200	4,800	6,400	8,000
Residential Collector without Frontage	2	6,000	7,000	8,000	9,000	10,000
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	42,000	48,000	54,000	60,000
Rural, 2-Lane Highway	2	2,400	4,800	7,900	13,500	22,900
Rural, 2-Lane Road, 24–36 Feet of Pavement, paved shoulders	2	2,200	4,300	7,100	12,200	20,000
Rural, 2-Lane Road, 24–36 Feet of Pavement, No Shoulders	2	1,800	3,600	5,900	10,100	17,000
Rural, 2-Lane Road, Substandard, No Shoulders	2	1,300	2,600	4,300	6,800	11,000

Facility Type Definition	Stops per Mile	Driveways	Speed
Arterial, Low Access Control	4+	Frequent	25–35 mph
Arterial, Moderate Access Control	2–4	Limited	35–45 mph
Arterial, High Access Control	1–2		45–55 mph

Source: Sacramento County 2004

Existing Levels of Service

Tables 4 and 5 summarize existing peak-hour intersection and roadway LOS in the study area for typical weekday p.m. and Saturday midday conditions. As shown in Table 4, satisfactory LOS A to LOS C operations are experienced at study intersections during both the weekday p.m. and Saturday midday peak hours, based on operating standards for individual locations and associated jurisdictions, as discussed in greater detail in Section 3.11.2, “Regulatory Setting,” of the draft environmental impact report. The special-event access to Prairie City SVRA located west of Prairie City Road was closed during these count periods.

TABLE 4
EXISTING INTERSECTION LEVELS OF SERVICE

Location	Control	Weekday P.M. Peak		Saturday Midday	
		LOS	V/C or Delay (sec)	LOS	V/C or Delay (sec)
Prairie City Road/U.S. 50 WB ramps	Signal	C	20.3 sec	B	14.1 sec
Prairie City Road/U.S. 50 EB ramps	Signal	B	16.7 sec	B	15.6 sec
Prairie City Road/White Rock Road	Signal	B	14.9 sec	B	14.9 sec
White Rock Road/special event access:	NB stop				
- WB left turn		*	–	*	–
- NB approach		*	–	*	–
White Rock Road/main park access:	NB stop				
- WB left turn		A	9.0 sec	A	7.8 sec
- NB approach		B	12.5 sec	A	9.8 sec
White Rock Road/Grant Line Road	Signal	A	0.26	A	0.07

Notes: EB = eastbound; LOS = level of service; NB = northbound; sec = seconds; V/C = volume-to-capacity ratio; WB = westbound
* Access not in use.

Table 5 summarizes roadway operations based on daily traffic volume thresholds. As shown, White Rock Road and the access road to the SVRA operate well within capacity and experience LOS A operations. Prairie City Road operates at LOS D and LOS C during the weekday p.m. and Saturday midday peak hours, respectively. This is also within acceptable standards identified for Sacramento County and the city of Folsom, as discussed in Section 3.11.2, “Regulatory Setting,” of the draft environmental impact report.

TABLE 5
EXISTING ROADWAY LEVELS OF SERVICE

			Weekday			Saturday		
Location	**Number of Lanes**	**Daily Capacity**	**Daily Volume**	**V/C**	**LOS**	**Daily Volume**	**V/C**	**LOS**
White Rock Road:								
- West of main park access	Four-lane arterial	36,000	8,400	0.23	A	5,580	0.16	A
- East of main park access	Four-lane arterial	36,000	8,440	0.23	A	6,100	0.17	A
Prairie City Road:								
- North of White Rock Road	Two-lane rural	11,000	4,550	0.41	D	3,650	0.33	C
Main park access:								
- South of White Rock Road	Two-lane rural	11,000	300	0.03	A	1,100	0.10	A
Notes: LOS = level of service; V/C = volume-to-capacity ratio								

Special Event

Peak-hour and daily traffic counts were conducted on a Saturday in conjunction with the Hangtown Motocross Classic professional motocross event at Prairie City SVRA. This event typically attracts approximately 25,000 spectators. Preliminary events and practice start at approximately 8:00 a.m., with the main racing events beginning at 1:00 p.m. Event arrivals are spread out through the morning and peak at around 11:00 a.m. Field observations indicate that morning arrival traffic conditions operate relatively well without long periods of congestion on the adjacent roadway system. Departing traffic generates short periods of congestion on the adjacent street system; however, stop-and-go traffic conditions are primarily limited to on-site traffic as motorists exit the parking areas and access the designated on-site travel corridors.

Tables 6 and 7 summarize intersection and roadway LOS in the study area for the Saturday special-event condition. The daily roadway-volume threshold capacities employed by Sacramento County and used for this analysis (as reflected in Table 7) include a peak-hour factor typical of average daily traffic conditions. In this case, traffic from special events results in large hourly peaks compared to typical average traffic conditions. Therefore, although identified daily volumes are within the capacity of each of the roadways, LOS during the peak traffic periods would be worse than those identified in Table 7, because the percentage of the daily volume occurring in the peak hour is much higher than for typical conditions.

TABLE 6
EXISTING INTERSECTION LEVELS OF SERVICE—SPECIAL EVENT

		Saturday A.M. Peak		Saturday P.M. Peak	
	Control	**LOS**	**V/C or Delay (sec)**	**LOS**	**V/C or Delay (sec)**
Prairie City Road/U.S. 50 WB ramps	Signal	B	14.2 sec	B	13.2 sec
Prairie City Road/U.S. 50 EB ramps	Signal	B	15.8 sec	B	12.8 sec
Prairie City Road/White Rock Road	Signal	B	18.8 sec	A	9.5 sec
White Rock Road/special-event access:	NB stop				
WB left turn		A	8.3 sec	A	7.4 sec
NB approach		B	10.4 sec	C	17.8 sec
White Rock Road/main park access:	NB stop				
WB left turn		A	9.4 sec	A	7.4 sec
NB approach		B	12.1 sec	F	71.3 sec
White Rock Road/Grant Line Road	Signal	A	0.18	A	0.44
Notes: EB = eastbound; LOS = level of service; NB = northbound; sec = seconds; V/C = volume-to-capacity ratio; WB = westbound					

TABLE 7
EXISTING ROADWAY LEVELS OF SERVICE—SPECIAL EVENT

			Saturday Event		
Location	**Number of Lanes**	**Daily Capacity**	**Daily Volume**	**V/C**	**LOS**
White Rock Road					
- West of main park access	4-lane arterial	36,000	8,400	0.23	A
- East of main park access	4-lane arterial	36,000	6,680	0.19	A
Prairie City Rd					
- North of White Rock Road	2-lane rural	11,000	9,880	0.90	E
Main park access					
- South of White Rock Road	2-lane rural	11,000	5,780	0.53	D
Note: LOS = level of service; V/C = volume-to-capacity ratio					

Existing Trip Generation

Traffic counts conducted at the access road to Prairie City SVRA indicate a traffic volume of 29 vehicles during the weekday p.m. peak hour (4–6 p.m.), with a weekday daily two-way volume of 300 vehicles. On Saturday (midday, between 11 a.m. and 1 p.m.), counts indicate a traffic volume of 127 vehicles, with a weekend daily two-way volume of 1,100 vehicles. Table 8 summarizes the existing number of vehicle trips currently generated by the site based on traffic counts during the weekday p.m. peak hour and Saturday midday peak hour, along with the peak-hour directional split into and out of the site.

TABLE 8
EXISTING TRIP GENERATION

Location	**Weekday**				**Saturday**			
	Daily	**P.M. Peak Hour**			**Daily**	**Midday Hour**		
		In	**Out**	**Total**		**In**	**Out**	**Total**
Prairie City SVRA	300	35%	65%	29	1,100	60%	40%	127
Note: SVRA = State Vehicular Recreation Area								

Existing Directional Distribution

Peak-hour intersection counts conducted at the Prairie City SVRA access intersection with White Rock Road have also been used to identify the directional distribution of traffic. Table 9 summarizes this information. As shown, 69 percent of the traffic generated by the site was observed to be oriented to the east on White Rock Road, with 31 percent oriented to the west on White Rock Road.

TABLE 9
EXISTING DIRECTIONAL DISTRIBUTION

	Percent
East on White Rock Road	69%
West on White Rock Road	31%
	100%

Table 10 summarizes the estimated regional distribution of traffic generated, based on spot observations at study intersections of motorists transporting off-road vehicles such as motorcycles and other off-highway vehicles.

TABLE 10
ESTIMATED REGIONAL DIRECTIONAL DISTRIBUTION

West on White Rock Road west of Grant Line Road	14%
South on Grant Line Road	17%
East on White Rock Road east of Prairie City Road	10%
North on Prairie City Road to U.S. Highway 50	35%
North on Prairie City Road north of U.S. Highway 50	24%
Total	**100%**

APPENDIX

EXISTING LEVEL OF SERVICE
WEEKDAY AND SATURDAY

KDA

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                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Prairie City & WB 50 [Ex weekday pm]
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.617
Loss Time (sec):        6                Average Delay (sec/veh):        20.3
Optimal Cycle:         34                Level Of Service:                  C
********************************************************************************
Street Name:                Prairie City                      WB ramps
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        0  0  2  0  0   0  0  2  0  0   0  0  0  0  0   1  0  0  0  2
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   870     0     0   330     0     0     0     0    33     0   964
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   870     0     0   330     0     0     0     0    33     0   964
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0   870     0     0   330     0     0     0     0    33     0   964
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   870     0     0   330     0     0     0     0    33     0   964
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0   870     0     0   330     0     0     0     0    33     0   964
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.95  1.00  1.00  0.95  1.00  1.00  1.00  1.00  0.95  1.00  0.75
Lanes:       0.00  2.00  0.00  0.00  2.00  0.00  0.00  0.00  0.00  1.00  0.00  2.00
Final Sat.:     0  3610     0     0  3610     0     0     0     0  1805     0  2842
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.24  0.00  0.00  0.09  0.00  0.00  0.00  0.00  0.02  0.00  0.34
Crit Moves:        ****        ****                                           ****
Green/Cycle: 0.00  0.39  0.00  0.00  0.39  0.00  0.00  0.00  0.00  0.55  0.00  0.55
Volume/Cap:  0.00  0.62  0.00  0.00  0.23  0.00  0.00  0.00  0.00  0.03  0.00  0.62
Uniform Del:  0.0  24.5   0.0   0.0  20.4   0.0   0.0   0.0   0.0  10.3   0.0  15.4
IncremntDel:  0.0   0.8   0.0   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.8
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   0.00  1.00  0.00  0.00  1.00  0.00  0.00  0.00  0.00  1.00  0.00  1.00
Delay/Veh:    0.0  25.3   0.0   0.0  20.5   0.0   0.0   0.0   0.0  10.3   0.0  16.1
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0  25.3   0.0   0.0  20.5   0.0   0.0   0.0   0.0  10.3   0.0  16.1
LOS by Move:    A     C     A     A     C     A     A     A     A     B     A     B
HCM2kAvgQ:      0    12     0     0     4     0     0     0     0     0     0    12
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [Ex weekday pm]
*******************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):        0.352
Loss Time (sec):        6                 Average Delay (sec/veh):       16.7
Optimal Cycle:         22                 Level Of Service:                 B
*******************************************************************************
Street Name:                Prairie City                      EB ramps
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  2  0  1   0  0  2  0  0   1  1  0  0  1   0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0  223    38     0  350     0   758    2    28     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  223    38     0  350     0   758    2    28     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  223    38     0  350     0   758    2    28     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  223    38     0  350     0   758    2    28     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  223    38     0  350     0   758    2    28     0    0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.95  1.00  0.86 0.86  0.85  1.00 1.00  1.00
Lanes:       0.00 2.00  1.00  0.00 2.00  0.00  1.99 0.01  1.00  0.00 0.00  0.00
Final Sat.:     0 3610  1615     0 3610     0  3244    9  1615     0    0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.06  0.02  0.00 0.10  0.00  0.23 0.23  0.02  0.00 0.00  0.00
Crit Moves:  ****                  ****        ****
Green/Cycle: 0.00 0.28  0.28  0.00 0.28  0.00  0.66 0.66  0.66  0.00 0.00  0.00
Volume/Cap:  0.00 0.22  0.09  0.00 0.35  0.00  0.35 0.35  0.03  0.00 0.00  0.00
Uniform Del:  0.0 28.0  26.9   0.0 29.0   0.0   7.4  7.4   5.7   0.0  0.0   0.0
IncremntDel:  0.0  0.1   0.1   0.0  0.2   0.0   0.1  0.1   0.0   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  1.00  0.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
Delay/Veh:    0.0 28.1  26.9   0.0 29.3   0.0   7.5  7.5   5.7   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 28.1  26.9   0.0 29.3   0.0   7.5  7.5   5.7   0.0  0.0   0.0
LOS by Move:    A    C     C     A    C     A     A    A     A     A    A     A
HCM2kAvgQ:      0    3     1     0    5     0     5    5     0     0    0     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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MITIG8 - Default Scenario  Tue Dec 23, 2014 14:30:11              Page 1-1
---------------------------------------------------------------------------
---------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
***************************************************************************
Intersection #3 Prairie City & White Rock [Ex weekday pm]
***************************************************************************
Cycle (sec):         100                  Critical Vol./Cap.(X):       0.273
Loss Time (sec):       9                  Average Delay (sec/veh):      14.9
Optimal Cycle:        25                  Level Of Service:                B
***************************************************************************
Street Name:            Prairie City                      White Rock
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include           Ovl             Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        0  0  0  0  0    1  0  0  0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0    80     0   307   215   466     0     0   209    48
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0    80     0   307   215   466     0     0   209    48
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0     0     0    80     0   307   215   466     0     0   209    48
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0    80     0   307   215   466     0     0   209    48
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0     0     0    80     0   307   215   466     0     0   209    48
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.95  1.00  0.85  0.95  0.95  1.00  1.00  0.95  0.85
Lanes:       0.00  0.00  0.00  1.00  0.00  1.00  1.00  2.00  0.00  0.00  2.00  1.00
Final Sat.:     0     0     0  1805     0  1615  1805  3610     0     0  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.04  0.00  0.19  0.12  0.13  0.00  0.00  0.06  0.03
Crit Moves:                               ****  ****                    ****
Green/Cycle: 0.00  0.00  0.00  0.26  0.00  0.70  0.44  0.65  0.00  0.00  0.21  0.21
Volume/Cap:  0.00  0.00  0.00  0.17  0.00  0.27  0.27  0.20  0.00  0.00  0.27  0.14
Uniform Del:  0.0   0.0   0.0  28.6   0.0   5.6  18.0   7.1   0.0   0.0  32.9  32.0
IncremntDel:  0.0   0.0   0.0   0.2   0.0   0.1   0.2   0.0   0.0   0.0   0.2   0.2
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   0.00  0.00  0.00  1.00  0.00  1.00  1.00  1.00  0.00  0.00  1.00  1.00
Delay/Veh:    0.0   0.0   0.0  28.8   0.0   5.8  18.2   7.1   0.0   0.0  33.1  32.1
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  28.8   0.0   5.8  18.2   7.1   0.0   0.0  33.1  32.1
LOS by Move:    A     A     A     C     A     A     B     A     A     A     C     C
HCM2kAvgQ:      0     0     0     2     0     4     4     3     0     0     3     1
***************************************************************************
Note: Queue reported is the number of cars per lane.
***************************************************************************

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 White Rock & main access [Ex weekday PM]
********************************************************************************
Average Delay (sec/veh):      0.2   Worst Case Level Of Service:       B[ 12.5]
********************************************************************************
Street Name:           main access                       White Rock
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       5    0     6     0    0     0     0  681     4     7  482     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    5    0     6     0    0     0     0  681     4     7  482     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     5    0     6     0    0     0     0  681     4     7  482     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     5    0     6     0    0     0     0  681     4     7  482     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  938 xxxx   343  xxxx xxxx xxxxx  xxxx xxxx xxxxx   685 xxxx xxxxx
Potent Cap.:  267 xxxx   659  xxxx xxxx xxxxx  xxxx xxxx xxxxx   918 xxxx xxxxx
Move Cap.:    265 xxxx   659  xxxx xxxx xxxxx  xxxx xxxx xxxxx   918 xxxx xxxxx
Total Cap:    374    0 xxxxx 3245    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.01 xxxx  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.0 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  489 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx 12.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      12.5           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 White Rock & Grant Line [Ex weekday pm]
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap. (X):         0.256
Loss Time (sec):        9 (Y+R =  4 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         25                Level Of Service:                   A
********************************************************************************
Street Name:                Grant Line                        White Rock
Approach:       North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Protected         Protected
Rights:          Include          Include           Include           Include
Min. Green:   0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  0   0  0  2  0  1   2  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     5  351     0    0  394    43  353    0    27    0    0     0
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  5  351     0    0  394    43  353    0    27    0    0     0
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   5  351     0    0  394    43  353    0    27    0    0     0
Reduct Vol:   0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  5  351     0    0  394    43  353    0    27    0    0     0
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.10 1.00  1.00 1.00 1.00  1.00
Final Vol.:   5  351     0    0  394    43  388    0    27    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1550 1550  1550 1550 1550  1550 1550 1550  1550 1550 1550  1550
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  0.00 0.00 2.00  1.00 2.00 0.00  1.00 0.00 0.00  0.00
Final Sat.: 1550 3100     0    0 3100  1550 3100    0  1550    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.11  0.00 0.00 0.13  0.03 0.13 0.00  0.02 0.00 0.00  0.00
Crit Vol:     5                  197         194                        0
Crit Moves: ****                ****        ****
********************************************************************************
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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Prairie City & WB 50 [Ex Saturday noon]
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap.(X):        0.189
Loss Time (sec):       6                 Average Delay (sec/veh):       14.1
Optimal Cycle:        18                 Level Of Service:                 B
********************************************************************************
Street Name:                 Prairie City                      WB ramps
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  2  0  0    0  0  2  0  0    0  0  0  0  0    1  0  0  0  2
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0  380     0    0   82     0    0    0     0   31    0   206
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0  380     0    0   82     0    0    0     0   31    0   206
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0  380     0    0   82     0    0    0     0   31    0   206
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0  380     0    0   82     0    0    0     0   31    0   206
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0  380     0    0   82     0    0    0     0   31    0   206
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 0.95  1.00 1.00 0.95  1.00 1.00 1.00  1.00 0.95 1.00  0.75
Lanes:       0.00 2.00  0.00 0.00 2.00  0.00 0.00 0.00  0.00 1.00 0.00  2.00
Final Sat.:    0 3610     0    0 3610     0    0    0     0 1805    0  2842
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.11  0.00 0.00 0.02  0.00 0.00 0.00  0.00 0.02 0.00  0.07
Crit Moves:       ****       ****                                         ****
Green/Cycle: 0.00 0.56  0.00 0.00 0.56  0.00 0.00 0.00  0.00 0.38 0.00  0.38
Volume/Cap:  0.00 0.19  0.00 0.00 0.04  0.00 0.00 0.00  0.00 0.04 0.00  0.19
Uniform Del:  0.0 11.0   0.0  0.0 10.1   0.0  0.0  0.0   0.0 19.3  0.0  20.5
IncremntDel:  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.1
InitQueuDel:  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0
Delay Adj:   0.00 1.00  0.00 0.00 1.00  0.00 0.00 0.00  0.00 1.00 0.00  1.00
Delay/Veh:    0.0 11.0   0.0  0.0 10.1   0.0  0.0  0.0   0.0 19.4  0.0  20.6
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0 11.0   0.0  0.0 10.1   0.0  0.0  0.0   0.0 19.4  0.0  20.6
LOS by Move:    A    B     A    A    B     A    A    A     A    B    A     C
HCM2kAvgQ:      0    3     0    0    1     0    0    0     0    1    0     2
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [Ex Saturday noon]
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.116
Loss Time (sec):        6                Average Delay (sec/veh):        15.6
Optimal Cycle:         16                Level Of Service:                  B
********************************************************************************
Street Name:                 Prairie City                        EB ramps
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected         Protected         Protected         Protected
Rights:           Include           Include           Include           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        0  0  2  0  1    0  0  2  0  0    1  1  0  0  1    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0   129    27     0   116     0   264     0    33     0     0     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   129    27     0   116     0   264     0    33     0     0     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0   129    27     0   116     0   264     0    33     0     0     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   129    27     0   116     0   264     0    33     0     0     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0   129    27     0   116     0   264     0    33     0     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.95  0.85  1.00  0.95  1.00  0.95  1.00  0.85  1.00  1.00  1.00
Lanes:       0.00  2.00  1.00  0.00  2.00  0.00  2.00  0.00  1.00  0.00  0.00  0.00
Final Sat.:     0  3610  1615     0  3610     0  3618     0  1615     0     0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.04  0.02  0.00  0.03  0.00  0.07  0.00  0.02  0.00  0.00  0.00
Crit Moves:        ****        ****              ****
Green/Cycle: 0.00  0.31  0.31  0.00  0.31  0.00  0.63  0.00  0.63  0.00  0.00  0.00
Volume/Cap:  0.00  0.12  0.05  0.00  0.10  0.00  0.12  0.00  0.03  0.00  0.00  0.00
Uniform Del:  0.0  24.8  24.3   0.0  24.7   0.0   7.3   0.0   6.9   0.0   0.0   0.0
IncremntDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   0.00  1.00  1.00  0.00  1.00  0.00  1.00  0.00  1.00  0.00  0.00  0.00
Delay/Veh:    0.0  24.8  24.3   0.0  24.7   0.0   7.4   0.0   7.0   0.0   0.0   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0  24.8  24.3   0.0  24.7   0.0   7.4   0.0   7.0   0.0   0.0   0.0
LOS by Move:    A     C     C     A     C     A     A     A     A     A     A     A
HCM2kAvgQ:      0     1     1     0     1     0     2     0     0     0     0     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 Prairie City & White Rock [Ex Saturday noon]
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.122
Loss Time (sec):        9              Average Delay (sec/veh):        14.9
Optimal Cycle:         21              Level Of Service:                  B
*******************************************************************************
Street Name:              Prairie City                      White Rock
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include            Ovl            Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        0  0  0  0  0   1  0  0  0  1   1  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0   35     0    83  107   165     0    0   117    33
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:    0     0     0   35     0    83  107   165     0    0   117    33
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:     0     0     0   35     0    83  107   165     0    0   117    33
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:    0     0     0   35     0    83  107   165     0    0   117    33
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:    0     0     0   35     0    83  107   165     0    0   117    33
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  1.00  1.00  1.00 0.95  1.00  0.85 0.95  0.95  1.00 1.00  0.95  0.85
Lanes:       0.00  0.00  0.00 1.00  0.00  1.00 1.00  2.00  0.00 0.00  2.00  1.00
Final Sat.:     0     0     0 1805     0  1615 1805  3610     0    0  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.02  0.00  0.05 0.06  0.05  0.00 0.00  0.03  0.02
Crit Moves:                   ****             ****                   ****
Green/Cycle: 0.00  0.00  0.00 0.16  0.00  0.64 0.49  0.75  0.00 0.00  0.27  0.27
Volume/Cap:  0.00  0.00  0.00 0.12  0.00  0.08 0.12  0.06  0.00 0.00  0.12  0.08
Uniform Del:  0.0   0.0   0.0 36.1   0.0   6.7 14.1   3.2   0.0  0.0  27.9  27.5
IncremntDel:  0.0   0.0   0.0  0.2   0.0   0.0  0.1   0.0   0.0  0.0   0.1   0.1
InitQueuDel:  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:   0.00  0.00  0.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  1.00  1.00
Delay/Veh:    0.0   0.0   0.0 36.3   0.0   6.7 14.1   3.3   0.0  0.0  27.9  27.6
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0 36.3   0.0   6.7 14.1   3.3   0.0  0.0  27.9  27.6
LOS by Move:    A     A     A    D     A     A    B     A     A    A     C     C
HCM2kAvgQ:      0     0     0    1     0     1    2     1     0    0     1     1
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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                      Level Of Service Computation Report
                2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 White Rock & main access [Ex Saturday noon]
*******************************************************************************
Average Delay (sec/veh):      1.7   Worst Case Level Of Service:       A[  9.8]
*******************************************************************************
Street Name:             main access                        White Rock
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:          Include          Include          Include           Include
Lanes:        0  0  1! 0  0   0  0  0  0  0   0  0  1  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      17    0    38    0    0     0    0  219    16   44  181     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   17    0    38    0    0     0    0  219    16   44  181     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    17    0    38    0    0     0    0  219    16   44  181     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Final Vol.:    17    0    38    0    0     0    0  219    16   44  181     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  406 xxxx   118  xxxx xxxx xxxxx  xxxx xxxx xxxxx   235 xxxx xxxxx
Potent Cap.:  579 xxxx   919  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1344 xxxx xxxxx
Move Cap.:    564 xxxx   919  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1344 xxxx xxxxx
Total Cap:    624    0 xxxxx  3100    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.03 xxxx  0.04  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  802 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx  9.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     *    *     *
ApproachDel:        9.8          xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A              *                *                *
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 White Rock & Grant Line [Ex Saturday noon]
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.067
Loss Time (sec):      9 (Y+R =  4 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       20              Level Of Service:                  A
********************************************************************************
Street Name:                Grant Line                       White Rock
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  2  0  0    0  0  2  0  1    2  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      8   190     0    0   159    26   30     0     5    0     0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   8   190     0    0   159    26   30     0     5    0     0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    8   190     0    0   159    26   30     0     5    0     0     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   8   190     0    0   159    26   30     0     5    0     0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.10 1.00  1.00  1.00 1.00  1.00
Final Vol.:    8   190     0    0   159    26   33     0     5    0     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  0.00  0.00 2.00  1.00  2.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:  1550 3100     0     0 3100  1550  3100    0  1550     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.06  0.00  0.00 0.05  0.02  0.01 0.00  0.00  0.00 0.00  0.00
Crit Vol:      8                     80          17                     0
Crit Moves:  ****                  ****        ****
********************************************************************************
```

EXISTING LEVEL OF SERVICE

SPECIAL EVENT

KDA

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Prairie City & WB 50 [special event am]
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):        0.183
Loss Time (sec):        6                Average Delay (sec/veh):       14.2
Optimal Cycle:         17                Level Of Service:                 B
*******************************************************************************
Street Name:                Prairie City                      WB ramps
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       0  0  2  0  0   0  0  2  0  0   0  0  0  0  0   1  0  0  0  2
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      0  354     0    0  183     0    0    0     0   56    0   211
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0  354     0    0  183     0    0    0     0   56    0   211
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0  354     0    0  183     0    0    0     0   56    0   211
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0  354     0    0  183     0    0    0     0   56    0   211
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0  354     0    0  183     0    0    0     0   56    0   211
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:   1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment: 1.00 0.95  1.00 1.00 0.95  1.00 1.00 1.00  1.00 0.95 1.00  0.75
Lanes:      0.00 2.00  0.00 0.00 2.00  0.00 0.00 0.00  0.00 1.00 0.00  2.00
Final Sat.:    0 3610     0    0 3610     0    0    0     0 1805    0  2842
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.10  0.00 0.00 0.05  0.00 0.00 0.00  0.00 0.03 0.00  0.07
Crit Moves:      ****       ****                                         ****
Green/Cycle: 0.00 0.54  0.00 0.00 0.54  0.00 0.00 0.00  0.00 0.40 0.00  0.40
Volume/Cap: 0.00 0.18  0.00 0.00 0.09  0.00 0.00 0.00  0.00 0.08 0.00  0.18
Uniform Del:  0.0 12.0   0.0  0.0 11.4   0.0  0.0  0.0   0.0 18.3  0.0  19.1
IncremntDel:  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.1
InitQueuDel:  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0
Delay Adj:  0.00 1.00  0.00 0.00 1.00  0.00 0.00 0.00  0.00 1.00 0.00  1.00
Delay/Veh:   0.0 12.0   0.0  0.0 11.4   0.0  0.0  0.0   0.0 18.3  0.0  19.2
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  0.0 12.0   0.0  0.0 11.4   0.0  0.0  0.0   0.0 18.3  0.0  19.2
LOS by Move:   A    B     A    A    B     A    A    A     A    B    A     B
HCM2kAvgQ:     0    3     0    0    1     0    0    0     0    1    0     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [special event am]
*******************************************************************************
Cycle (sec):        100                Critical Vol./Cap.(X):        0.301
Loss Time (sec):      6                Average Delay (sec/veh):       15.8
Optimal Cycle:       20                Level Of Service:                 B
*******************************************************************************
Street Name:             Prairie City                       EB ramps
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  2  0  1    0  0  2  0  0    1  1  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  143    65     0  207     0   260   35   365     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  143    65     0  207     0   260   35   365     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  143    65     0  207     0   260   35   365     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  143    65     0  207     0   260   35   365     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  143    65     0  207     0   260   35   365     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.95  1.00  0.94 0.94  0.85  1.00 1.00  1.00
Lanes:       0.00 2.00  1.00  0.00 2.00  0.00  1.76 0.24  1.00  0.00 0.00  0.00
Final Sat.:     0 3610  1615     0 3610     0  3152  424  1615     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.04  0.04  0.00 0.06  0.00  0.08 0.08  0.23  0.00 0.00  0.00
Crit Moves:  ****                  ****                   ****
Green/Cycle: 0.00 0.19  0.19  0.00 0.19  0.00  0.75 0.75  0.75  0.00 0.00  0.00
Volume/Cap:  0.00 0.21  0.21  0.00 0.30  0.00  0.11 0.11  0.30  0.00 0.00  0.00
Uniform Del:  0.0 34.1  34.2   0.0 34.8   0.0   3.4  3.4   4.0   0.0  0.0   0.0
IncremntDel:  0.0  0.2   0.3   0.0  0.2   0.0   0.0  0.0   0.1   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  1.00  0.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
Delay/Veh:    0.0 34.3  34.5   0.0 35.0   0.0   3.4  3.4   4.2   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 34.3  34.5   0.0 35.0   0.0   3.4  3.4   4.2   0.0  0.0   0.0
LOS by Move:    A    C     C     A    D     A     A    A     A     A    A     A
HCM2kAvgQ:      0    2     2     0    3     0     1    1     4     0    0     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 Prairie City & White Rock [special event am]
*******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.285
Loss Time (sec):        9               Average Delay (sec/veh):        18.8
Optimal Cycle:         25               Level Of Service:                  B
*******************************************************************************
Street Name:                Prairie City                      White Rock
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include            Ovl            Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        0  0  0  0  0    1  0  0  0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0  181     0   337   66   127     0    0   182    74
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:    0     0     0  181     0   337   66   127     0    0   182    74
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:     0     0     0  181     0   337   66   127     0    0   182    74
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:    0     0     0  181     0   337   66   127     0    0   182    74
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:    0     0     0  181     0   337   66   127     0    0   182    74
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  1.00  1.00  1.00 0.95  1.00  0.85 0.95  0.95  1.00 1.00  0.95  0.85
Lanes:       0.00  0.00  0.00 1.00  0.00  1.00 1.00  2.00  0.00 0.00  2.00  1.00
Final Sat.:     0     0     0 1805     0  1615 1805  3610     0    0  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.10  0.00  0.21 0.04  0.04  0.00 0.00  0.05  0.05
Crit Moves:                               ****  ****                   ****
Green/Cycle: 0.00  0.00  0.00 0.60  0.00  0.73 0.13  0.31  0.00 0.00  0.18  0.18
Volume/Cap:  0.00  0.00  0.00 0.17  0.00  0.28 0.28  0.12  0.00 0.00  0.28  0.26
Uniform Del:  0.0   0.0   0.0  8.7   0.0   4.5 39.4  25.0   0.0  0.0  35.7  35.5
IncremntDel:  0.0   0.0   0.0  0.1   0.0   0.1  0.7   0.0   0.0  0.0   0.2   0.5
InitQueuDel:  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:   0.00  0.00  0.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  1.00  1.00
Delay/Veh:    0.0   0.0   0.0  8.8   0.0   4.6 40.1  25.0   0.0  0.0  35.9  36.0
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  8.8   0.0   4.6 40.1  25.0   0.0  0.0  35.9  36.0
LOS by Move:    A     A     A    A     A     A    D     C     A    A     D     D
HCM2kAvgQ:      0     0     0    2     0     4    2     1     0    0     3     2
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #4 White Rock & event access [special event am]
********************************************************************************
Average Delay (sec/veh):      2.8    Worst Case Level Of Service:      B[ 10.4]
********************************************************************************
Street Name:            event access                         White Rock
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3    0    25     0    0     0     0  171    69   263  349     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3    0    25     0    0     0     0  171    69   263  349     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     3    0    25     0    0     0     0  171    69   263  349     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     3    0    25     0    0     0     0  171    69   263  349     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  906 xxxx   120  xxxx xxxx xxxxx  xxxx xxxx xxxxx   240 xxxx xxxxx
Potent Cap.:  279 xxxx   915  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1339 xxxx xxxxx
Move Cap.:    230 xxxx   915  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1339 xxxx xxxxx
Volume/Cap:  0.01 xxxx  0.03  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.20 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.7 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  694 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.7 xxxx xxxxx
Shrd StpDel:xxxxx 10.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:       10.4            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

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                      Level Of Service Computation Report
                2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 White Rock & main access [special event am]
********************************************************************************
Average Delay (sec/veh):      3.0   Worst Case Level Of Service:      B[ 12.1]
********************************************************************************
Street Name:           main access                        White Rock
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:       0  0  1! 0  0   0  0  0  0  0   0  0  1  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       7    0    16     0    0     0     0  281   230   255   95     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    7    0    16     0    0     0     0  281   230   255   95     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     7    0    16     0    0     0     0  281   230   255   95     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     7    0    16     0    0     0     0  281   230   255   95     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  954 xxxx   256  xxxx xxxx xxxxx  xxxx xxxx xxxxx   511 xxxx xxxxx
Potent Cap.:  261 xxxx   750  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1065 xxxx xxxxx
Move Cap.:    212 xxxx   750  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1065 xxxx xxxxx
Total Cap:    320    0 xxxxx     0    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.02 xxxx  0.02  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.24 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.9 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.4 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:    LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  532 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx 12.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:       12.1           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

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                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 White Rock & Grant Line [special event am]
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap. (X):        0.179
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        23                Level Of Service:                  A
********************************************************************************
Street Name:               Grant Line                         White Rock
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  2  0  0   0  0  2  0  1   2  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      6   323     0    0    80    11  212     0     9    0     0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   6   323     0    0    80    11  212     0     9    0     0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    6   323     0    0    80    11  212     0     9    0     0     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   6   323     0    0    80    11  212     0     9    0     0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.10 1.00  1.00  1.00 1.00  1.00
Final Vol.:    6   323     0    0    80    11  233     0     9    0     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  0.00  0.00 2.00  1.00  2.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:  1550 3100     0     0 3100  1550  3100    0  1550     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.10  0.00  0.00 0.03  0.01  0.08 0.00  0.01  0.00 0.00  0.00
Crit Vol:          162          0                117                    0
Crit Moves:       ****      ****                ****
********************************************************************************
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-------------------------------------------------------------------------------
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                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Prairie City & WB 50 [special event pm]
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.231
Loss Time (sec):       6                Average Delay (sec/veh):        13.2
Optimal Cycle:        18                Level Of Service:                  B
*******************************************************************************
Street Name:              Prairie City                       WB ramps
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  2  0  0   0  0  2  0  0   0  0  0  0  0   1  0  0  0  2
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  511     0    0   65     0    0    0     0   17    0   214
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0  511     0    0   65     0    0    0     0   17    0   214
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0  511     0    0   65     0    0    0     0   17    0   214
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0  511     0    0   65     0    0    0     0   17    0   214
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    0  511     0    0   65     0    0    0     0   17    0   214
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 0.95  1.00 1.00 0.95  1.00 1.00 1.00  1.00 0.95 1.00  0.75
Lanes:       0.00 2.00  0.00 0.00 2.00  0.00 0.00 0.00  0.00 1.00 0.00  2.00
Final Sat.:     0 3610     0    0 3610     0    0    0     0 1805    0  2842
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.14  0.00 0.00 0.02  0.00 0.00 0.00  0.00 0.01 0.00  0.08
Crit Moves:       ****       ****                                          ****
Green/Cycle: 0.00 0.61  0.00 0.00 0.61  0.00 0.00 0.00  0.00 0.33 0.00  0.33
Volume/Cap:  0.00 0.23  0.00 0.00 0.03  0.00 0.00 0.00  0.00 0.03 0.00  0.23
Uniform Del:  0.0  8.7   0.0  0.0  7.6   0.0  0.0  0.0   0.0 22.9  0.0  24.5
IncremntDel:  0.0  0.1   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.1
InitQueuDel:  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0
Delay Adj:   0.00 1.00  0.00 0.00 1.00  0.00 0.00 0.00  0.00 1.00 0.00  1.00
Delay/Veh:    0.0  8.7   0.0  0.0  7.6   0.0  0.0  0.0   0.0 22.9  0.0  24.7
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  8.7   0.0  0.0  7.6   0.0  0.0  0.0   0.0 22.9  0.0  24.7
LOS by Move:    A    A     A    A    A     A    A    A     A    C    A     C
HCM2kAvgQ:      0    4     0    0    0     0    0    0     0    0    0     3
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [special event pm]
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.336
Loss Time (sec):        6                Average Delay (sec/veh):        12.8
Optimal Cycle:         21                Level Of Service:                  B
*******************************************************************************
Street Name:                 Prairie City                      EB ramps
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include          Include          Include          Include
Min. Green:      0    0     0    0    0     0    0    0     0    0    0     0
Y+R:           4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         0  0  2  0  1    0  0  2  0  0    1  1  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0  789   162    0   71     0  315    5    24    0    0     0
Growth Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:     0  789   162    0   71     0  315    5    24    0    0     0
User Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:      0  789   162    0   71     0  315    5    24    0    0     0
Reduct Vol:      0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:     0  789   162    0   71     0  315    5    24    0    0     0
PCE Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:     0  789   162    0   71     0  315    5    24    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:   1.00 0.95  0.85 1.00 0.95  1.00 0.86 0.86  0.85 1.00 1.00  1.00
Lanes:        0.00 2.00  1.00 0.00 2.00  0.00 1.97 0.03  1.00 0.00 0.00  0.00
Final Sat.:      0 3610  1615    0 3610     0 3228   51  1615    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.22  0.10 0.00 0.02  0.00 0.10 0.10  0.01 0.00 0.00  0.00
Crit Moves:        ****       ****            ****
Green/Cycle:  0.00 0.65  0.65 0.00 0.65  0.00 0.29 0.29  0.29 0.00 0.00  0.00
Volume/Cap:   0.00 0.34  0.15 0.00 0.03  0.00 0.34 0.34  0.05 0.00 0.00  0.00
Uniform Del:   0.0  7.8   6.8  0.0  6.3   0.0 27.9 27.9  25.6  0.0  0.0   0.0
IncremntDel:   0.0  0.1   0.1  0.0  0.0   0.0  0.2  0.2   0.0  0.0  0.0   0.0
InitQueuDel:   0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0
Delay Adj:    0.00 1.00  1.00 0.00 1.00  0.00 1.00 1.00  1.00 0.00 0.00  0.00
Delay/Veh:     0.0  7.9   6.9  0.0  6.3   0.0 28.1 28.1  25.6  0.0  0.0   0.0
User DelAdj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:    0.0  7.9   6.9  0.0  6.3   0.0 28.1 28.1  25.6  0.0  0.0   0.0
LOS by Move:     A    A     A    A    A     A    C    C     C    A    A     A
HCM2kAvgQ:       0    6     2    0    0     0    4    4     1    0    0     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 Prairie City & White Rock [special event pm]
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap.(X):         0.583
Loss Time (sec):       9                 Average Delay (sec/veh):         9.5
Optimal Cycle:        40                 Level Of Service:                  A
********************************************************************************
Street Name:              Prairie City                       White Rock
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected         Protected         Protected        Protected
Rights:          Include            Ovl             Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        0  0  0  0  0    1  0  0  0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0    1     0    95  823     1     0    0     2   120
Growth Adj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   0     0     0    1     0    95  823     1     0    0     2   120
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    0     0     0    1     0    95  823     1     0    0     2   120
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0     0     0    1     0    95  823     1     0    0     2   120
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:   0     0     0    1     0    95  823     1     0    0     2   120
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment: 1.00  1.00  1.00 0.95  1.00  0.85 0.95  0.95  1.00 1.00  0.95  0.85
Lanes:      0.00  0.00  0.00 1.00  0.00  1.00 1.00  2.00  0.00 0.00  2.00  1.00
Final Sat.:    0     0     0 1805     0  1615 1805  3610     0    0  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00  0.00  0.00 0.00  0.00  0.06 0.46  0.00  0.00 0.00  0.00  0.07
Crit Moves:                        ****       ****                          ****
Green/Cycle: 0.00 0.00  0.00 0.00  0.00  0.78 0.78  0.91  0.00 0.00  0.13  0.13
Volume/Cap: 0.00  0.00  0.00 xxxx  0.00  0.08 0.58  0.00  0.00 0.00  0.00  0.58
Uniform Del:  0.0   0.0   0.0  0.0   0.0   2.5  4.3   0.4   0.0  0.0  38.1  41.1
IncremntDel:  0.0   0.0   0.0  0.0   0.0   0.0  0.6   0.0   0.0  0.0   0.0   4.2
InitQueuDel:  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:  0.00  0.00  0.00 0.00  0.00  1.00 1.00  1.00  0.00 0.00  1.00  1.00
Delay/Veh:    0.0   0.0   0.0  0.0   0.0   2.5  5.0   0.4   0.0  0.0  38.1  45.3
User DelAdj: 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  0.0   0.0   2.5  5.0   0.4   0.0  0.0  38.1  45.3
LOS by Move:   A     A     A    A     A     A    A     A     A    A     D     D
HCM2kAvgQ:     0     0     0    0     0     1   11     0     0    0     0     4
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #4 White Rock & event access [special event pm]
********************************************************************************
Average Delay (sec/veh):      13.9   Worst Case Level Of Service:      C[ 17.8]
********************************************************************************
Street Name:           event access                       White Rock
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   737     0    0     0     0   97     1     6  100     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   737     0    0     0     0   97     1     6  100     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0   737     0    0     0     0   97     1     6  100     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0    0   737     0    0     0     0   97     1     6  100     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx    49  xxxx xxxx xxxxx  xxxx xxxx xxxxx    98 xxxx xxxxx
Potent Cap.: xxxx xxxx  1016  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1508 xxxx xxxxx
Move Cap.:   xxxx xxxx  1016  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1508 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.73  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx   7.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx  17.8 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.4 xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.4 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:      17.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C                *                *                *
```

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--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 White Rock & main access [special event pm]
********************************************************************************
Average Delay (sec/veh):     57.6   Worst Case Level Of Service:      F[ 71.3]
********************************************************************************
Street Name:           main access                        White Rock
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign         Stop Sign        Uncontrolled      Uncontrolled
Rights:          Include           Include          Include           Include
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    762    0   47      0    0    0      0   52   32      4  105    0
Growth Adj: 1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse: 762    0   47      0    0    0      0   52   32      4  105    0
User Adj:   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Volume:  762    0   47      0    0    0      0   52   32      4  105    0
Reduct Vol:    0    0    0      0    0    0      0    0    0      0    0    0
Final Vol.:  762    0   47      0    0    0      0   52   32      4  105    0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx  6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx  3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  129 xxxx   42  xxxx xxxx xxxxx  xxxx xxxx xxxxx    84 xxxx xxxxx
Potent Cap.:  858 xxxx 1026  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1526 xxxx xxxxx
Move Cap.:    857 xxxx 1026  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1526 xxxx xxxxx
Total Cap:    827    0 xxxxx 3132    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.92 xxxx 0.05  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.4 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  836 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx 28.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx 71.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    F     *     *    *     *     *    *     *     *    *     *
ApproachDel:        71.3            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:          F                *                *                *
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 White Rock & Grant Line [special event pm]
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap. (X):         0.440
Loss Time (sec):        9 (Y+R =  4 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         33              Level Of Service:                   A
********************************************************************************
Street Name:                Grant Line                        White Rock
Approach:        North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Protected         Protected        Protected
Rights:           Include           Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  2  0  0   0  0  2  0  1   2  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    111    46     0    0   244   557    6     0    14    0     0     0
Growth Adj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse: 111    46     0    0   244   557    6     0    14    0     0     0
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:  111    46     0    0   244   557    6     0    14    0     0     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol: 111    46     0    0   244   557    6     0    14    0     0     0
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.10  1.00  1.00 1.00  1.00  1.00
Final Vol.:  111    46     0    0   244   557    7     0    14    0     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550  1550
Adjustment: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:      1.00  2.00  0.00 0.00  2.00  1.00 2.00  0.00  1.00 0.00  0.00  0.00
Final Sat.: 1550  3100     0    0  3100  1550 3100     0  1550    0     0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.07  0.01  0.00 0.00  0.08  0.36 0.00  0.00  0.01 0.00  0.00  0.00
Crit Vol:    111                          557                14    0
Crit Moves: ****                         ****              ****
********************************************************************************
```

2030 LEVEL OF SERVICE

WEEKDAY AND SATURDAY

KDA

```
MITIG8 - Default Scenario  Thu Dec 18, 2014 13:41:08                 Page 1-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Prairie City & WB 50 [2030 weekday pm]
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.988
Loss Time (sec):       6                Average Delay (sec/veh):        35.1
Optimal Cycle:       180                Level Of Service:                  D
*******************************************************************************
Street Name:              Prairie City                         WB ramps
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:       L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:          Protected        Protected        Protected        Protected
Rights:             Include          Include          Include          Include
Min. Green:       0     0     0     0     0     0     0     0     0     0     0     0
Y+R:            4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:          0  0  2  0  0    0  0  2  0  0    0  0  0  0  0    1  0  0  0  2
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:         0  1260     0     0  2065     0     0     0     0    90     0  1015
Growth Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:      0  1260     0     0  2065     0     0     0     0    90     0  1015
User Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:       1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:       0  1260     0     0  2065     0     0     0     0    90     0  1015
Reduct Vol:       0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:      0  1260     0     0  2065     0     0     0     0    90     0  1015
PCE Adj:       1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:       1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:      0  1260     0     0  2065     0     0     0     0    90     0  1015
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:      1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:    1.00  0.95  1.00  1.00  0.95  1.00  1.00  1.00  1.00  0.95  1.00  0.75
Lanes:         0.00  2.00  0.00  0.00  2.00  0.00  0.00  0.00  0.00  1.00  0.00  2.00
Final Sat.:       0  3610     0     0  3610     0     0     0     0  1805     0  2842
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:       0.00  0.35  0.00  0.00  0.57  0.00  0.00  0.00  0.00  0.05  0.00  0.36
Crit Moves:    ****                    ****                                      ****
Green/Cycle:   0.00  0.58  0.00  0.00  0.58  0.00  0.00  0.00  0.00  0.36  0.00  0.36
Volume/Cap:    0.00  0.60  0.00  0.00  0.99  0.00  0.00  0.00  0.00  0.14  0.00  0.99
Uniform Del:    0.0  13.6   0.0   0.0  20.7   0.0   0.0   0.0   0.0  21.5   0.0  31.7
IncremntDel:    0.0   0.5   0.0   0.0  17.0   0.0   0.0   0.0   0.0   0.1   0.0  25.2
InitQueuDel:    0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:     0.00  1.00  0.00  0.00  1.00  0.00  0.00  0.00  0.00  1.00  0.00  1.00
Delay/Veh:      0.0  14.1   0.0   0.0  37.7   0.0   0.0   0.0   0.0  21.6   0.0  56.9
User DelAdj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:     0.0  14.1   0.0   0.0  37.7   0.0   0.0   0.0   0.0  21.6   0.0  56.9
LOS by Move:      A     B     A     A     D     A     A     A     A     C     A     E
HCM2kAvgQ:        0    13     0     0    41     0     0     0     0     2     0    24
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [2030 weekday pm]
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.577
Loss Time (sec):       6               Average Delay (sec/veh):       15.8
Optimal Cycle:        31               Level Of Service:                 B
********************************************************************************
Street Name:             Prairie City                       EB ramps
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Protected        Protected
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        0  0  2  0  1    0  0  2  0  0    1  1  0  0  1    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      0  1160   365    0  1220     0  460     2   330    0     0     0
Growth Adj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   0  1160   365    0  1220     0  460     2   330    0     0     0
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    0  1160   365    0  1220     0  460     2   330    0     0     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0  1160   365    0  1220     0  460     2   330    0     0     0
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:   0  1160   365    0  1220     0  460     2   330    0     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:   1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment: 1.00  0.95  0.85 1.00  0.95  1.00 0.91  0.91  0.85 1.00  1.00  1.00
Lanes:      0.00  2.00  1.00 0.00  2.00  0.00 1.99  0.01  1.00 0.00  0.00  0.00
Final Sat.:    0  3610  1615    0  3610     0 3454    15  1615    0     0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:    0.00  0.32  0.23 0.00  0.34  0.00 0.13  0.13  0.20 0.00  0.00  0.00
Crit Moves: ****                     ****                    ****
Green/Cycle: 0.00 0.59  0.59 0.00  0.59  0.00 0.35  0.35  0.35 0.00  0.00  0.00
Volume/Cap: 0.00  0.55  0.39 0.00  0.58  0.00 0.38  0.38  0.58 0.00  0.00  0.00
Uniform Del:  0.0 12.6  11.1  0.0  13.0   0.0 24.1  24.1  26.2  0.0   0.0   0.0
IncremntDel:  0.0  0.3   0.3  0.0   0.4   0.0  0.2   0.2   1.5  0.0   0.0   0.0
InitQueuDel:  0.0  0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:  0.00  1.00  1.00 0.00  1.00  0.00 1.00  1.00  1.00 0.00  0.00  0.00
Delay/Veh:   0.0  12.9  11.3  0.0  13.4   0.0 24.3  24.3  27.7  0.0   0.0   0.0
User DelAdj: 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:  0.0  12.9  11.3  0.0  13.4   0.0 24.3  24.3  27.7  0.0   0.0   0.0
LOS by Move:   A     B     B    A     B     A    C     C     C    A     A     A
HCM2kAvgQ:     0    12     6    0    12     0    5     5     9    0     0     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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MITIG8 - Default Scenario  Thu Dec 18, 2014 13:40:43                Page 1-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 Prairie City & White Rock [2030 weekday pm]
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.737
Loss Time (sec):       9                Average Delay (sec/veh):        20.6
Optimal Cycle:        57                Level Of Service:                  C
********************************************************************************
Street Name:           Prairie City                       White Rock
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include           Ovl             Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  0    1  0  0  0  2    2  0  3  0  0    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   235    0  1030   915 1610     0     0 1450   130
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   235    0  1030   915 1610     0     0 1450   130
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   235    0  1030   915 1610     0     0 1450   130
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   235    0  1030   915 1610     0     0 1450   130
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0   235    0  1030   915 1610     0     0 1450   130
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.95 1.00  0.75  0.92 0.91  1.00  1.00 0.91  0.85
Lanes:       0.00 0.00  0.00  1.00 0.00  2.00  2.00 3.00  0.00  0.00 3.00  1.00
Final Sat.:     0    0     0  1805    0  2842  3502 5187     0     0 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.13 0.00  0.36  0.26 0.31  0.00  0.00 0.28  0.08
Crit Moves:                   ****             ****                  ****
Green/Cycle: 0.00 0.00  0.00  0.18 0.00  0.53  0.35 0.73  0.00  0.00 0.38  0.38
Volume/Cap:  0.00 0.00  0.00  0.74 0.00  0.68  0.74 0.42  0.00  0.00 0.74  0.21
Uniform Del:  0.0  0.0   0.0  39.0  0.0  17.3  28.2  5.2   0.0   0.0 26.8  21.0
IncremntDel:  0.0  0.0   0.0   8.7  0.0   1.3   2.4  0.1   0.0   0.0  1.5   0.2
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
Delay/Veh:    0.0  0.0   0.0  47.7  0.0  18.6  30.6  5.2   0.0   0.0 28.3  21.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  47.7  0.0  18.6  30.6  5.2   0.0   0.0 28.3  21.1
LOS by Move:    A    A     A     D    A     B     C    A     A     A    C     C
HCM2kAvgQ:      0    0     0     8    0    14    14    7     0     0   15     3
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************

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```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 White Rock & main access [2030 weekday PM]
*******************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: E[ 49.9]
*******************************************************************************
Street Name:           main access                         White Rock
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:         0  0  1! 0  0   0  0  0  0  0   0  0  2  1  0   1  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        6    0     9    0    0     0     0 2520     5     8 2300     0
Growth Adj:   1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     6    0     9    0    0     0     0 2520     5     8 2300     0
User Adj:     1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      6    0     9    0    0     0     0 2520     5     8 2300     0
Reduct Vol:      0    0     0    0    0     0     0    0     0     0    0     0
FinalVolume:     6    0     9    0    0     0     0 2520     5     8 2300     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 3305 4839   843  xxxx xxxx xxxxx  xxxx xxxx xxxxx  2525 xxxx xxxxx
Potent Cap.:    7    1   311  xxxx xxxx xxxxx  xxxx xxxx xxxxx   181 xxxx xxxxx
Move Cap.:      6    1   311  xxxx xxxx xxxxx  xxxx xxxx xxxxx   181 xxxx xxxxx
Total Cap:     47   51 xxxxx    37   45 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.13 0.00  0.03  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.04 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  25.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     D    *     *
Movement:      LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx   95 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 49.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    E     *     *    *     *     *    *     *     *    *     *
ApproachDel:      49.9            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        E                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #6 White Rock & Grant Line [2030 weekday pm]
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):          0.947
Loss Time (sec):       9               Average Delay (sec/veh):       xxxxxx
Optimal Cycle:       180               Level Of Service:                   E
*******************************************************************************
Street Name:                 Grant Line                        White Rock
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:         1  0  2  0  0    0  0  2  0  1    2  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       2  1450     0    0  1750   555 1075     0    15    0     0     0
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:    2  1450     0    0  1750   555 1075     0    15    0     0     0
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:     2  1450     0    0  1750   555 1075     0    15    0     0     0
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:    2  1450     0    0  1750   555 1075     0    15    0     0     0
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.10  1.00  1.00 1.00  1.00  1.00
FinalVolume:    2  1450     0    0  1750   555 1183     0    15    0     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550  1550
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       1.00  2.00  0.00 0.00  2.00  1.00 2.00  0.00  1.00 0.00  0.00  0.00
Final Sat.:  1550  3100     0    0  3100  1550 3100     0  1550    0     0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.47  0.00 0.00  0.56  0.36 0.38  0.00  0.01 0.00  0.00  0.00
Crit Volume:    2                     875       591                      0
Crit Moves:  ****                    ****      ****
*******************************************************************************
```

```
MITIG8 - Default Scenario  Thu Dec 18, 2014 13:49:13             Page 1-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Prairie City & WB 50 [2030 Saturday midday]
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.375
Loss Time (sec):       6               Average Delay (sec/veh):       14.1
Optimal Cycle:        22               Level Of Service:                 B
*******************************************************************************
Street Name:             Prairie City                        WB ramps
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        0  0  2  0  0    0  0  2  0  0    0  0  0  0  0    1  0  0  0  2
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   480     0     0   785     0     0     0     0    35     0   385
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   480     0     0   785     0     0     0     0    35     0   385
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0   480     0     0   785     0     0     0     0    35     0   385
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   480     0     0   785     0     0     0     0    35     0   385
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0   480     0     0   785     0     0     0     0    35     0   385
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.95  1.00  1.00  0.95  1.00  1.00  1.00  1.00  0.95  1.00  0.75
Lanes:       0.00  2.00  0.00  0.00  2.00  0.00  0.00  0.00  0.00  1.00  0.00  2.00
Final Sat.:     0  3610     0     0  3610     0     0     0     0  1805     0  2842
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.13  0.00  0.00  0.22  0.00  0.00  0.00  0.00  0.02  0.00  0.14
Crit Moves:  ****                    ****                                    ****
Green/Cycle: 0.00  0.58  0.00  0.00  0.58  0.00  0.00  0.00  0.00  0.36  0.00  0.36
Volume/Cap:  0.00  0.23  0.00  0.00  0.38  0.00  0.00  0.00  0.00  0.05  0.00  0.38
Uniform Del:  0.0  10.2   0.0   0.0  11.3   0.0   0.0   0.0   0.0  20.8   0.0  23.6
IncremntDel:  0.0   0.1   0.0   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.2
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   0.00  1.00  0.00  0.00  1.00  0.00  0.00  0.00  0.00  1.00  0.00  1.00
Delay/Veh:    0.0  10.3   0.0   0.0  11.4   0.0   0.0   0.0   0.0  20.9   0.0  23.9
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0  10.3   0.0   0.0  11.4   0.0   0.0   0.0   0.0  20.9   0.0  23.9
LOS by Move:    A     B     A     A     B     A     A     A     A     C     A     C
HCM2kAvgQ:      0     4     0     0     7     0     0     0     0     1     0     5
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [2030 Saturday midday]
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         0.219
Loss Time (sec):      6              Average Delay (sec/veh):        12.6
Optimal Cycle:       18              Level Of Service:                  B
*******************************************************************************
Street Name:              Prairie City                     EB ramps
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  2  0  1    0  0  2  0  0    1  1  0  0  1    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0  440   140     0  465     0   175    2   125     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  440   140     0  465     0   175    2   125     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  440   140     0  465     0   175    2   125     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  440   140     0  465     0   175    2   125     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  440   140     0  465     0   175    2   125     0    0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.95  1.00  0.91 0.91  0.85  1.00 1.00  1.00
Lanes:       0.00 2.00  1.00  0.00 2.00  0.00  1.98 0.02  1.00  0.00 0.00  0.00
Final Sat.:     0 3610  1615     0 3610     0  3430   39  1615     0    0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.12  0.09  0.00 0.13  0.00  0.05 0.05  0.08  0.00 0.00  0.00
Crit Moves:  ****                  ****                     ****
Green/Cycle: 0.00 0.59  0.59  0.00 0.59  0.00  0.35 0.35  0.35  0.00 0.00  0.00
Volume/Cap:  0.00 0.21  0.15  0.00 0.22  0.00  0.14 0.14  0.22  0.00 0.00  0.00
Uniform Del:  0.0  9.7   9.3   0.0  9.8   0.0  22.1 22.1  22.7   0.0  0.0   0.0
IncremntDel:  0.0  0.0   0.1   0.0  0.1   0.0   0.1  0.1   0.2   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  1.00  0.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
Delay/Veh:    0.0  9.8   9.4   0.0  9.8   0.0  22.1 22.1  22.9   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  9.8   9.4   0.0  9.8   0.0  22.1 22.1  22.9   0.0  0.0   0.0
LOS by Move:    A    A     A     A    A     A     C    C     C     A    A     A
HCM2kAvgQ:      0    3     2     0    4     0     2    2     3     0    0     0
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 Prairie City & White Rock [2030 Saturday midday]
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.280
Loss Time (sec):       9                Average Delay (sec/veh):       15.6
Optimal Cycle:        25                Level Of Service:                 B
********************************************************************************
Street Name:               Prairie City                        White Rock
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include           Ovl            Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  0  0  0   1  0  0  0  2   2  0  3  0  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    90    0   390   345  610     0     0  550    50
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0     0    90    0   390   345  610     0     0  550    50
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0     0    90    0   390   345  610     0     0  550    50
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0    0     0    90    0   390   345  610     0     0  550    50
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   0    0     0    90    0   390   345  610     0     0  550    50
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.95 1.00  0.75  0.92 0.91  1.00  1.00 0.91  0.85
Lanes:       0.00 0.00  0.00  1.00 0.00  2.00  2.00 3.00  0.00  0.00 3.00  1.00
Final Sat.:    0    0     0  1805    0  2842  3502 5187     0     0 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.05 0.00  0.14  0.10 0.12  0.00  0.00 0.11  0.03
Crit Moves:                   ****              ****                  ****
Green/Cycle: 0.00 0.00  0.00  0.18 0.00  0.53  0.35 0.73  0.00  0.00 0.38  0.38
Volume/Cap:  0.00 0.00  0.00  0.28 0.00  0.26  0.28 0.16  0.00  0.00 0.28  0.08
Uniform Del:  0.0  0.0   0.0  35.5  0.0  12.8  23.3  4.1   0.0   0.0 21.6  19.9
IncremntDel:  0.0  0.0   0.0   0.5  0.0   0.1   0.1  0.0   0.0   0.0  0.1   0.1
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
Delay/Veh:    0.0  0.0   0.0  36.0  0.0  12.9  23.4  4.1   0.0   0.0 21.6  19.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  36.0  0.0  12.9  23.4  4.1   0.0   0.0 21.6  19.9
LOS by Move:   A    A     A     D    A     B     C    A     A     A    C     B
HCM2kAvgQ:     0    0     0     3    0     4     4    2     0     0    4     1
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 White Rock & main access [2030 Saturday midday]
********************************************************************************
Average Delay (sec/veh):       0.7       Worst Case Level Of Service: B[ 13.2]
********************************************************************************
Street Name:                 main access                        White Rock
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:       0  0  1! 0  0   0  0  0  0  0   0  0  2  1  0   1  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     20    0    45     0    0     0     0  960    20    54  875     0
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  20    0    45     0    0     0     0  960    20    54  875     0
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   20    0    45     0    0     0     0  960    20    54  875     0
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  20    0    45     0    0     0     0  960    20    54  875     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1370 1953   330  xxxx xxxx xxxxx  xxxx xxxx xxxxx   980 xxxx xxxxx
Potent Cap.:  140   65   672  xxxx xxxx xxxxx  xxxx xxxx xxxxx   712 xxxx xxxxx
Move Cap.:    132   60   672  xxxx xxxx xxxxx  xxxx xxxx xxxxx   712 xxxx xxxxx
Total Cap:    325  270 xxxxx   246  246 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.06 0.00  0.07  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.08 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     B    *     *
Movement:    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  506 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 13.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:        13.2            xxxxxx            xxxxxx            xxxxxx
ApproachLOS:          B                *                 *                 *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #6 White Rock & Grant Line [2030 Saturday midday]
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.361
Loss Time (sec):        9              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         29              Level Of Service:                  A
*******************************************************************************
Street Name:                Grant Line                        White Rock
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  0   0  0  2  0  1   2  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      1  550     0    0  665   210  410    0     5    0    0     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   1  550     0    0  665   210  410    0     5    0    0     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    1  550     0    0  665   210  410    0     5    0    0     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   1  550     0    0  665   210  410    0     5    0    0     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.10 1.00  1.00 1.00 1.00  1.00
FinalVolume:   1  550     0    0  665   210  451    0     5    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550 1550 1550  1550 1550 1550  1550 1550 1550  1550
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 2.00  0.00 0.00 2.00  1.00 2.00 0.00  1.00 0.00 0.00  0.00
Final Sat.:  1550 3100     0    0 3100  1550 3100    0  1550    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.18  0.00 0.00 0.21  0.14 0.15 0.00  0.00 0.00 0.00  0.00
Crit Volume:    1                    333         226                    0
Crit Moves:  ****                   ****        ****
*******************************************************************************
```

2030 LEVEL OF SERVICE

SPECIAL EVENT

KDA

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Prairie City & WB 50 [2030 am special event]
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.344
Loss Time (sec):       6                Average Delay (sec/veh):       12.9
Optimal Cycle:        21                Level Of Service:                 B
*******************************************************************************
Street Name:             Prairie City                      WB ramps
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:         0  0  2  0  0    0  0  2  0  0    0  0  0  0  0    1  0  0  0  2
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0   375     0    0   785     0    0     0     0   85     0   300
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:    0   375     0    0   785     0    0     0     0   85     0   300
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:     0   375     0    0   785     0    0     0     0   85     0   300
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:    0   375     0    0   785     0    0     0     0   85     0   300
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:    0   375     0    0   785     0    0     0     0   85     0   300
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  1.00  0.95  1.00 1.00  0.95  1.00 1.00  1.00  1.00 0.95  1.00  0.75
Lanes:       0.00  2.00  0.00 0.00  2.00  0.00 0.00  0.00  0.00 1.00  0.00  2.00
Final Sat.:     0  3610     0    0  3610     0    0     0     0 1805     0  2842
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.10  0.00 0.00  0.22  0.00 0.00  0.00  0.00 0.05  0.00  0.11
Crit Moves:  ****                   ****                                      ****
Green/Cycle: 0.00  0.63  0.00 0.00  0.63  0.00 0.00  0.00  0.00 0.31  0.00  0.31
Volume/Cap:  0.00  0.16  0.00 0.00  0.34  0.00 0.00  0.00  0.00 0.15  0.00  0.34
Uniform Del:  0.0   7.5   0.0  0.0   8.6   0.0  0.0   0.0   0.0 25.2   0.0  26.8
IncremntDel:  0.0   0.0   0.0  0.0   0.1   0.0  0.0   0.0   0.0  0.1   0.0   0.2
InitQueuDel:  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:   0.00  1.00  0.00 0.00  1.00  0.00 0.00  0.00  0.00 1.00  0.00  1.00
Delay/Veh:    0.0   7.6   0.0  0.0   8.7   0.0  0.0   0.0   0.0 25.3   0.0  27.1
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:   0.0   7.6   0.0  0.0   8.7   0.0  0.0   0.0   0.0 25.3   0.0  27.1
LOS by Move:    A     A     A    A     A     A    A     A     A    C     A     C
HCM2kAvgQ:      0     2     0    0     6     0    0     0     0    2     0     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [2030 am special event]
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap.(X):         0.529
Loss Time (sec):       6                 Average Delay (sec/veh):        20.8
Optimal Cycle:        29                 Level Of Service:                  C
********************************************************************************
Street Name:               Prairie City                      EB ramps
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  2  0  1   0  0  2  0  0   1  1  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  345  110     0  600    0   135    2  535     0    0    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  345  110     0  600    0   135    2  535     0    0    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0  345  110     0  600    0   135    2  535     0    0    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0  345  110     0  600    0   135    2  535     0    0    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  345  110     0  600    0   135    2  535     0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.95 0.85  1.00 0.95 1.00  0.97 0.97 0.85  1.00 1.00 1.00
Lanes:       0.00 2.00 1.00  0.00 2.00 0.00  1.97 0.03 1.00  0.00 0.00 0.00
Final Sat.:     0 3610 1615     0 3610    0  3632   54 1615     0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.10 0.07  0.00 0.17 0.00  0.04 0.04 0.33  0.00 0.00 0.00
Crit Moves:  ****                 ****                  ****
Green/Cycle: 0.00 0.31 0.31  0.00 0.31 0.00  0.63 0.63 0.63  0.00 0.00 0.00
Volume/Cap:  0.00 0.30 0.22  0.00 0.53 0.00  0.06 0.06 0.53  0.00 0.00 0.00
Uniform Del:  0.0 26.0 25.2   0.0 28.2  0.0   7.3  7.3 10.5   0.0  0.0  0.0
IncremntDel:  0.0  0.2  0.2   0.0  0.5  0.0   0.0  0.0  0.5   0.0  0.0  0.0
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00 1.00  0.00 1.00 0.00  1.00 1.00 1.00  0.00 0.00 0.00
Delay/Veh:    0.0 26.2 25.5   0.0 28.7  0.0   7.3  7.3 11.0   0.0  0.0  0.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 26.2 25.5   0.0 28.7  0.0   7.3  7.3 11.0   0.0  0.0  0.0
LOS by Move:    A    C    C     A    C    A     A    A    B     A    A    A
HCM2kAvgQ:      0    4    3     0    8    0     1    1    9     0    0    0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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MITIG8 - Default Scenario  Thu Dec 18, 2014 14:06:46                Page 1-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 Prairie City & White Rock [2030 am special event]
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.430
Loss Time (sec):        9                Average Delay (sec/veh):        20.0
Optimal Cycle:         31                Level Of Service:                  B
********************************************************************************
Street Name:                Prairie City                     White Rock
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include            Ovl            Include          Include
Min. Green:      0    0     0    0    0     0    0    0     0    0    0     0
Y+R:           4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         0  0  0  0  0   1  0  0  0  2   2  0  3  0  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0    0     0  220    0   825  270  580     0    0  525    40
Growth Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:     0    0     0  220    0   825  270  580     0    0  525    40
User Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:      0    0     0  220    0   825  270  580     0    0  525    40
Reduct Vol:      0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:     0    0     0  220    0   825  270  580     0    0  525    40
PCE Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:     0    0     0  220    0   825  270  580     0    0  525    40
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:   1.00 1.00  1.00 0.95 1.00  0.75 0.92 0.91  1.00 1.00 0.91  0.85
Lanes:        0.00 0.00  0.00 1.00 0.00  2.00 2.00 3.00  0.00 0.00 3.00  1.00
Final Sat.:      0    0     0 1805    0  2842 3502 5187     0    0 5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.00  0.00 0.12 0.00  0.29 0.08 0.11  0.00 0.00 0.10  0.02
Crit Moves:                              ****  ****                ****
Green/Cycle:  0.00 0.00  0.00 0.50 0.00  0.67 0.18 0.41  0.00 0.00 0.24  0.24
Volume/Cap:   0.00 0.00  0.00 0.25 0.00  0.43 0.43 0.27  0.00 0.00 0.43  0.11
Uniform Del:   0.0  0.0   0.0 14.5  0.0   7.5 36.5 19.3   0.0  0.0 32.5  30.0
IncremntDel:   0.0  0.0   0.0  0.1  0.0   0.2  0.5  0.1   0.0  0.0  0.2   0.1
InitQueuDel:   0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0
Delay Adj:    0.00 0.00  0.00 1.00 0.00  1.00 1.00 1.00  0.00 0.00 1.00  1.00
Delay/Veh:     0.0  0.0   0.0 14.6  0.0   7.6 37.0 19.4   0.0  0.0 32.8  30.1
User DelAdj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:    0.0  0.0   0.0 14.6  0.0   7.6 37.0 19.4   0.0  0.0 32.8  30.1
LOS by Move:     A    A     A    B    A     A    D    B     A    A    C     C
HCM2kAvgQ:       0    0     0    4    0     7    4    4     0    0    5     1
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #4 White Rock & event access [2030 am special event]
********************************************************************************
Average Delay (sec/veh):      2.2       Worst Case Level Of Service: C[ 23.2]
********************************************************************************
Street Name:           event access                        White Rock
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  0   0  0  2  1  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       4    0    30     0    0     0     0  860    82   315  985     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    4    0    30     0    0     0     0  860    82   315  985     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     4    0    30     0    0     0     0  860    82   315  985     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    4    0    30     0    0     0     0  860    82   315  985     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1859 2516   328  xxxx xxxx xxxxx  xxxx xxxx xxxxx   942 xxxx xxxxx
Potent Cap.:   66   29   674  xxxx xxxx xxxxx  xxxx xxxx xxxxx   736 xxxx xxxxx
Move Cap.:     39   14   674  xxxx xxxx xxxxx  xxxx xxxx xxxxx   736 xxxx xxxxx
Volume/Cap:  0.10 0.00  0.04  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.43 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   2.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  232 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
Shrd ConDel:xxxxx 23.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.5 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     B    *     *
ApproachDel:        23.2            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:           C               *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 White Rock & main access [2030 am special event]
********************************************************************************
Average Delay (sec/veh):       2.7       Worst Case Level Of Service: C[ 18.0]
********************************************************************************
Street Name:             main access                      White Rock
Approach:      North Bound      South Bound        East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Uncontrolled      Uncontrolled
Rights:           Include          Include           Include           Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  2  1  0    1  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8    0     19     0    0      0     0  940    275   305  680      0
Growth Adj:  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00
Initial Bse:    8    0     19     0    0      0     0  940    275   305  680      0
User Adj:    1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00
PHF Adj:     1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00
PHF Volume:     8    0     19     0    0      0     0  940    275   305  680      0
Reduct Vol:     0    0      0     0    0      0     0    0      0     0    0      0
FinalVolume:    8    0     19     0    0      0     0  940    275   305  680      0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5    6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0    3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1914 2368    451  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1215 xxxx xxxxx
Potent Cap.:   61   36    561  xxxx xxxx xxxxx  xxxx xxxx xxxxx   581 xxxx xxxxx
Move Cap.:     36   17    561  xxxx xxxx xxxxx  xxxx xxxx xxxxx   581 xxxx xxxxx
Total Cap:    178  110 xxxxx     82    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.04 0.00   0.03  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.52 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   3.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  18.0 xxxx xxxxx
LOS by Move:    *    *      *     *    *      *     *    *      *     C    *      *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  343 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 16.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C      *     *    *      *     *    *      *     *    *      *
ApproachDel:      16.4             xxxxxx            xxxxxx            xxxxxx
ApproachLOS:        C                 *                 *                 *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 White Rock & Grant Line [2030 am special event]
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.408
Loss Time (sec):        9                Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         31                Level Of Service:                  A
********************************************************************************
Street Name:                Grant Line                         White Rock
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  0   0  0  2  0  1   2  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      1  710    0    0  520  165  505    0    5    0    0    0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   1  710    0    0  520  165  505    0    5    0    0    0
User Adj:   1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    1  710    0    0  520  165  505    0    5    0    0    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   1  710    0    0  520  165  505    0    5    0    0    0
PCE Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.10 1.00 1.00 1.00 1.00 1.00
FinalVolume:   1  710    0    0  520  165  556    0    5    0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1550 1550 1550 1550 1550 1550 1550 1550 1550 1550 1550 1550
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:      1.00 2.00 0.00 0.00 2.00 1.00 2.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1550 3100    0    0 3100 1550 3100    0 1550    0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.23 0.00 0.00 0.17 0.11 0.18 0.00 0.00 0.00 0.00 0.00
Crit Volume:      355         0              278                   0
Crit Moves:       ****     ****              ****
********************************************************************************
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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Prairie City & WB 50 [2030 pm special event]
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):          0.361
Loss Time (sec):        6                Average Delay (sec/veh):         13.9
Optimal Cycle:         22                Level Of Service:                   B
********************************************************************************
Street Name:               Prairie City                       WB ramps
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected         Protected         Protected         Protected
Rights:           Include           Include           Include           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        0  0  2  0  0    0  0  2  0  0    0  0  0  0  0    1  0  0  0  2
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0   685     0     0   755     0     0     0     0    35     0   370
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   685     0     0   755     0     0     0     0    35     0   370
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0   685     0     0   755     0     0     0     0    35     0   370
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   685     0     0   755     0     0     0     0    35     0   370
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0   685     0     0   755     0     0     0     0    35     0   370
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.95  1.00  1.00  0.95  1.00  1.00  1.00  1.00  0.95  1.00  0.75
Lanes:       0.00  2.00  0.00  0.00  2.00  0.00  0.00  0.00  0.00  1.00  0.00  2.00
Final Sat.:     0  3610     0     0  3610     0     0     0     0  1805     0  2842
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.19  0.00  0.00  0.21  0.00  0.00  0.00  0.00  0.02  0.00  0.13
Crit Moves:  ****                    ****                                      ****
Green/Cycle: 0.00  0.58  0.00  0.00  0.58  0.00  0.00  0.00  0.00  0.36  0.00  0.36
Volume/Cap:  0.00  0.33  0.00  0.00  0.36  0.00  0.00  0.00  0.00  0.05  0.00  0.36
Uniform Del:  0.0  10.9   0.0   0.0  11.2   0.0   0.0   0.0   0.0  20.8   0.0  23.5
IncremntDel:  0.0   0.1   0.0   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.2
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   0.00  1.00  0.00  0.00  1.00  0.00  0.00  0.00  0.00  1.00  0.00  1.00
Delay/Veh:    0.0  11.0   0.0   0.0  11.3   0.0   0.0   0.0   0.0  20.9   0.0  23.7
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0  11.0   0.0   0.0  11.3   0.0   0.0   0.0   0.0  20.9   0.0  23.7
LOS by Move:    A     B     A     A     B     A     A     A     A     C     A     C
HCM2kAvgQ:      0     6     0     0     6     0     0     0     0     1     0     5
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #2 Prairie City & Hwy 50 EB ramps [2030 pm special event]
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.467
Loss Time (sec):      6              Average Delay (sec/veh):        7.8
Optimal Cycle:       26              Level Of Service:                 A
********************************************************************************
Street Name:                Prairie City                       EB ramps
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected         Protected         Protected         Protected
Rights:          Include           Include           Include           Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:       0  0  2  0  1    0  0  2  0  0    1  1  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0 1315   320     0  445     0   165    2   120     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0 1315   320     0  445     0   165    2   120     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0 1315   320     0  445     0   165    2   120     0    0     0
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0 1315   320     0  445     0   165    2   120     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   0 1315   320     0  445     0   165    2   120     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.95  1.00  0.91 0.91  0.85  1.00 1.00  1.00
Lanes:       0.00 2.00  1.00  0.00 2.00  0.00  1.98 0.02  1.00  0.00 0.00  0.00
Final Sat.:    0 3610  1615     0 3610     0  3432   42  1615     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.36  0.20  0.00 0.12  0.00  0.05 0.05  0.07  0.00 0.00  0.00
Crit Moves:       ****        ****                         ****
Green/Cycle: 0.00 0.78  0.78  0.00 0.78  0.00  0.16 0.16  0.16  0.00 0.00  0.00
Volume/Cap:  0.00 0.47  0.25  0.00 0.16  0.00  0.30 0.30  0.47  0.00 0.00  0.00
Uniform Del:  0.0  3.8   3.0   0.0  2.7   0.0  37.1 37.1  38.2   0.0  0.0   0.0
IncremntDel:  0.0  0.1   0.1   0.0  0.0   0.0   0.3  0.3   1.3   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  1.00  0.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
Delay/Veh:    0.0  3.9   3.1   0.0  2.8   0.0  37.4 37.4  39.5   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  3.9   3.1   0.0  2.8   0.0  37.4 37.4  39.5   0.0  0.0   0.0
LOS by Move:    A    A     A     A    A     A     D    D     D     A    A     A
HCM2kAvgQ:      0    7     3     0    2     0     2    2     4     0    0     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 Prairie City & White Rock [2030 pm special event]
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):        0.581
Loss Time (sec):      9               Average Delay (sec/veh):       15.9
Optimal Cycle:       39               Level Of Service:                 B
*******************************************************************************
Street Name:           Prairie City                     White Rock
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include           Ovl             Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        0  0  0  0  0    1  0  0  0  2    2  0  3  0  0    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0   85     0   375 1265   585     0    0   535   195
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:    0     0     0   85     0   375 1265   585     0    0   535   195
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:     0     0     0   85     0   375 1265   585     0    0   535   195
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:    0     0     0   85     0   375 1265   585     0    0   535   195
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:    0     0     0   85     0   375 1265   585     0    0   535   195
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  1.00  1.00  1.00 0.95  1.00  0.75 0.92  0.91  1.00 1.00  0.91  0.85
Lanes:       0.00  0.00  0.00 1.00  0.00  2.00 2.00  3.00  0.00 0.00  3.00  1.00
Final Sat.:     0     0     0 1805     0  2842 3502  5187     0    0  5187  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.05  0.00  0.13 0.36  0.11  0.00 0.00  0.10  0.12
Crit Moves:                   ****             ****                         ****
Green/Cycle: 0.00  0.00  0.00 0.08  0.00  0.70 0.62  0.83  0.00 0.00  0.21  0.21
Volume/Cap:  0.00  0.00  0.00 0.58  0.00  0.19 0.58  0.14  0.00 0.00  0.50  0.58
Uniform Del:  0.0   0.0   0.0 44.3   0.0   5.1 11.2   1.6   0.0  0.0  35.0  35.7
IncremntDel:  0.0   0.0   0.0  5.8   0.0   0.0  0.4   0.0   0.0  0.0   0.4   2.6
InitQueuDel:  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:   0.00  0.00  0.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  1.00  1.00
Delay/Veh:    0.0   0.0   0.0 50.1   0.0   5.1 11.6   1.7   0.0  0.0  35.4  38.3
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0 50.1   0.0   5.1 11.6   1.7   0.0  0.0  35.4  38.3
LOS by Move:    A     A     A    D     A     A    B     A     A    A     D     D
HCM2kAvgQ:      0     0     0    3     0     2   12     1     0    0     6     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.
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                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #4 White Rock & event access [2030 pm special event]
*******************************************************************************
Average Delay (sec/veh):    184.3       Worst Case Level Of Service: F[567.4]
*******************************************************************************
Street Name:             event access                       White Rock
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  2  1  0    0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0    0   877     0    0     0     0  975     1     7  840     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0    0   877     0    0     0     0  975     1     7  840     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      0    0   877     0    0     0     0  975     1     7  840     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:     0    0   877     0    0     0     0  975     1     7  840     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   326  xxxx xxxx xxxxx  xxxx xxxx xxxxx   976 xxxx xxxxx
Potent Cap.: xxxx xxxx   676  xxxx xxxx xxxxx  xxxx xxxx xxxxx   715 xxxx xxxxx
Move Cap.:   xxxx xxxx   676  xxxx xxxx xxxxx  xxxx xxxx xxxxx   715 xxxx xxxxx
Volume/Cap:  xxxx xxxx  1.30  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx 112.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx 567.4 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.1 xxxx xxxxx
LOS by Move:     *    *     F     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.1 xxxx xxxxx
Shared LOS:      *    *     *     *    *     *     *    *     *     B    *     *
ApproachDel:      567.4            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:          F                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 White Rock & main access [2030 pm special event]
********************************************************************************
Average Delay (sec/veh):   1112.1      Worst Case Level Of Service: F[3194.3]
********************************************************************************
Street Name:           main access                       White Rock
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  0    0  0  2  1  0    1  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     907    0    56     0    0     0     0  920    38     5  840     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  907    0    56     0    0     0     0  920    38     5  840     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   907    0    56     0    0     0     0  920    38     5  840     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  907    0    56     0    0     0     0  920    38     5  840     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1229 1789   326  xxxx xxxx xxxxx  xxxx xxxx xxxxx   958 xxxx xxxxx
Potent Cap.:  173   82   676  xxxx xxxx xxxxx  xxxx xxxx xxxxx   726 xxxx xxxxx
Move Cap.:    172   81   676  xxxx xxxx xxxxx  xxxx xxxx xxxxx   726 xxxx xxxxx
Total Cap:    339  307 xxxxx   317  301 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  2.67 0.00  0.08  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.0 xxxx xxxxx
LOS by Move:     *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  349 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  312 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 3194 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:      *    F     *     *    *     *     *    *     *     *    *     *
ApproachDel:     3194.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        F                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
             Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 White Rock & Grant Line [2030 pm special event]
********************************************************************************
Cycle (sec):           100              Critical Vol./Cap.(X):          0.676
Loss Time (sec):         9              Average Delay (sec/veh):       xxxxxx
Optimal Cycle:          57              Level Of Service:                   B
********************************************************************************
Street Name:                 Grant Line                         White Rock
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:      0    0    0     0    0    0     0    0    0     0    0    0
Y+R:           4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         1  0  2  0  0   0  0  2  0  1   2  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        1  530    0     0  915  830   395    0    5     0    0    0
Growth Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:     1  530    0     0  915  830   395    0    5     0    0    0
User Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:      1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:      1  530    0     0  915  830   395    0    5     0    0    0
Reduct Vol:      0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:     1  530    0     0  915  830   395    0    5     0    0    0
PCE Adj:      1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:      1.00 1.00 1.00  1.00 1.00 1.00  1.10 1.00 1.00  1.00 1.00 1.00
FinalVolume:     1  530    0     0  915  830   435    0    5     0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1550 1550 1550  1550 1550 1550  1550 1550 1550  1550 1550 1550
Adjustment:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:        1.00 2.00 0.00  0.00 2.00 1.00  2.00 0.00 1.00  0.00 0.00 0.00
Final Sat.:   1550 3100    0     0 3100 1550  3100    0 1550     0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.17 0.00  0.00 0.30 0.54  0.14 0.00 0.00  0.00 0.00 0.00
Crit Volume:     1                       830   217                     0
Crit Moves:   ****                      ****  ****
********************************************************************************
```

TRAFFIC COUNTS

MARCH 2013

KDA

Prepared by NDS/ATD

Volumes for: Saturday, March 23, 2013 City: Sacramento County Project #: 13-7155-001

Location: White Rock Road west of the main entrance into Prairie City.

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	8	52			7	32				
12:15	6	41			9	41				
12:30	2	58			6	56				
12:45	4	72	20	223	1	41	23	170	43	393
1:00	5	59			6	52				
1:15	10	52			2	56				
1:30	4	64			8	33				
1:45	15	67	34	242	5	44	21	185	55	427
2:00	6	60			4	53				
2:15	7	70			2	40				
2:30	0	57			3	38				
2:45	1	44	14	231	1	53	10	184	24	415
3:00	4	60			3	58				
3:15	1	74			2	49				
3:30	1	56			3	58				
3:45	0	65	6	255	1	61	9	226	15	481
4:00	1	54			3	44				
4:15	2	68			6	57				
4:30	2	67			1	46				
4:45	4	64	9	253	2	62	12	209	21	462
5:00	4	63			5	43				
5:15	6	63			6	44				
5:30	7	63			5	51				
5:45	13	54	30	243	10	35	26	173	56	416
6:00	10	56			14	42				
6:15	9	55			10	57				
6:30	6	55			8	47				
6:45	12	45	37	211	12	28	44	174	81	385
7:00	15	44			25	23				
7:15	18	31			24	31				
7:30	20	30			32	24				
7:45	23	26	76	131	27	23	108	101	184	232
8:00	26	30			31	22				
8:15	24	29			30	23				
8:30	31	18			36	20				
8:45	39	30	120	107	33	32	130	97	250	204
9:00	35	17			30	19				
9:15	40	15			25	18				
9:30	46	23			40	15				
9:45	58	19	179	74	38	16	133	68	312	142
10:00	53	15			36	15				
10:15	42	14			44	7				
10:30	58	20			40	13				
10:45	76	9	229	58	45	11	165	46	394	104
11:00	57	16			51	7				
11:15	57	8			44	11				
11:30	60	7			35	11				
11:45	60	12	234	43	48	4	178	33	412	76
Total	988	2071	988	2071	859	1666	859	1666	1847	3737
Combined Total	3059		3059		2525		2525		5584	
AM Peak	10:45 AM				10:15 AM					
Vol.	250				180					
P.H.F.	0.822				0.882					
PM Peak		4:15 PM				3:00 PM				
Vol.		262				226				
P.H.F.		0.963				0.926				
Percentage	32.3%	67.7%			34.0%	66.0%				

Prepared by NDS/ATD

Volumes for: Saturday, March 23, 2013 City: Sacramento County Project #: 13-7155-002
Location: White Rock Road east of the main entrance into Prairie City.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	9	67			7	53				
12:15	8	41			10	53				
12:30	3	58			5	69				
12:45	4	76	24	242	1	45	23	220	47	462
1:00	5	67			6	59				
1:15	8	64			3	50				
1:30	5	73			7	40				
1:45	15	77	33	281	6	48	22	197	55	478
2:00	6	66			3	55				
2:15	6	100			2	41				
2:30	1	67			3	50				
2:45	1	53	14	286	1	59	9	205	23	491
3:00	3	68			3	52				
3:15	1	81			2	49				
3:30	1	68			3	55				
3:45	0	73	5	290	1	51	9	207	14	497
4:00	1	67			4	46				
4:15	2	74			5	45				
4:30	2	80			1	47				
4:45	4	76	9	297	3	59	13	197	22	494
5:00	4	79			5	40				
5:15	7	80			6	36				
5:30	6	77			5	46				
5:45	12	76	29	312	10	35	26	157	55	469
6:00	11	68			16	44				
6:15	8	70			10	49				
6:30	6	55			8	48				
6:45	10	59	35	252	16	24	50	165	85	417
7:00	13	45			27	24				
7:15	16	35			27	29				
7:30	19	30			32	25				
7:45	26	26	74	136	30	23	116	101	190	237
8:00	22	33			34	21				
8:15	20	32			40	21				
8:30	28	16			46	20				
8:45	33	31	103	112	44	31	164	93	267	205
9:00	33	19			43	19				
9:15	39	18			41	17				
9:30	34	24			67	18				
9:45	53	18	159	79	52	13	203	67	362	146
10:00	37	16			64	15				
10:15	38	13			62	7				
10:30	53	19			54	13				
10:45	67	11	195	59	63	12	243	47	438	106
11:00	65	16			70	8				
11:15	46	9			64	9				
11:30	61	7			42	11				
11:45	55	13	227	45	63	4	239	32	466	77
Total	907	2391	907	2391	1117	1688	1117	1688	2024	4079
Combined Total	3298		3298		2805		2805		6103	
AM Peak	10:45 AM				10:30 AM					
Vol.	239				251					
P.H.F.	0.892				0.896					
PM Peak		1:30 PM				12:15 PM				
Vol.		316				226				
P.H.F.		0.790				0.819				
Percentage	27.5%	72.5%			39.8%	60.2%				

Volumes for: Saturday, March 23, 2013 City: Sacramento County Project #: 13-7155-003
Location: Prairie City Road north of White Rock Road.

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	40			3	37				
12:15	3	38			3	35				
12:30	2	39			1	39				
12:45	1	36	11	153	1	32	8	143	19	296
1:00	1	31			3	35				
1:15	5	56			2	40				
1:30	1	50			3	32				
1:45	9	36	16	173	1	24	9	131	25	304
2:00	3	44			3	30				
2:15	4	60			1	33				
2:30	1	35			1	25				
2:45	2	40	10	179	1	35	6	123	16	302
3:00	3	35			1	33				
3:15	3	51			2	29				
3:30	1	37			0	31				
3:45	0	36	7	159	0	37	3	130	10	289
4:00	0	50			4	31				
4:15	2	50			1	23				
4:30	1	37			0	26				
4:45	2	44	5	181	2	31	7	111	12	292
5:00	0	39			2	32				
5:15	3	39			6	24				
5:30	3	50			0	24				
5:45	6	43	12	171	6	19	14	99	26	270
6:00	8	39			7	22				
6:15	5	40			3	26				
6:30	3	36			8	20				
6:45	6	27	22	142	12	19	30	87	52	229
7:00	13	21			11	13				
7:15	8	21			14	18				
7:30	17	14			13	17				
7:45	15	7	53	63	16	11	54	59	107	122
8:00	14	19			13	15				
8:15	14	18			28	10				
8:30	15	4			24	10				
8:45	23	21	66	62	23	12	88	47	154	109
9:00	29	9			26	12				
9:15	33	11			38	8				
9:30	25	15			47	11	0			
9:45	40	9	127	44	39	7	150	38	277	82
10:00	25	12			38	11				
10:15	28	7			43	10				
10:30	21	11			45	9				
10:45	35	4	109	34	35	7	161	37	270	71
11:00	44	12			51	11				
11:15	18	2			34	5				
11:30	38	3			32	2				
11:45	26	5	126	22	33	1	150	19	276	41
Total	564	1383	564	1383	680	1024	680	1024	1244	2407
Combined Total	1947		1947		1704		1704		3651	
AM Peak	11:45 AM				10:15 AM					
Vol.	143				174					
P.H.F.	0.894				0.853					
PM Peak		1:30 PM				12:30 PM				
Vol.		190				146				
P.H.F.		0.870				0.913				
Percentage	29.0%	71.0%			39.9%	60.1%				

Prepared by NDS/ATD

Volumes for: Saturday, March 23, 2013 City: Sacramento County Project #: 13-7155-004

Location: Main Access Road around 100 feet south of White Rock Road.

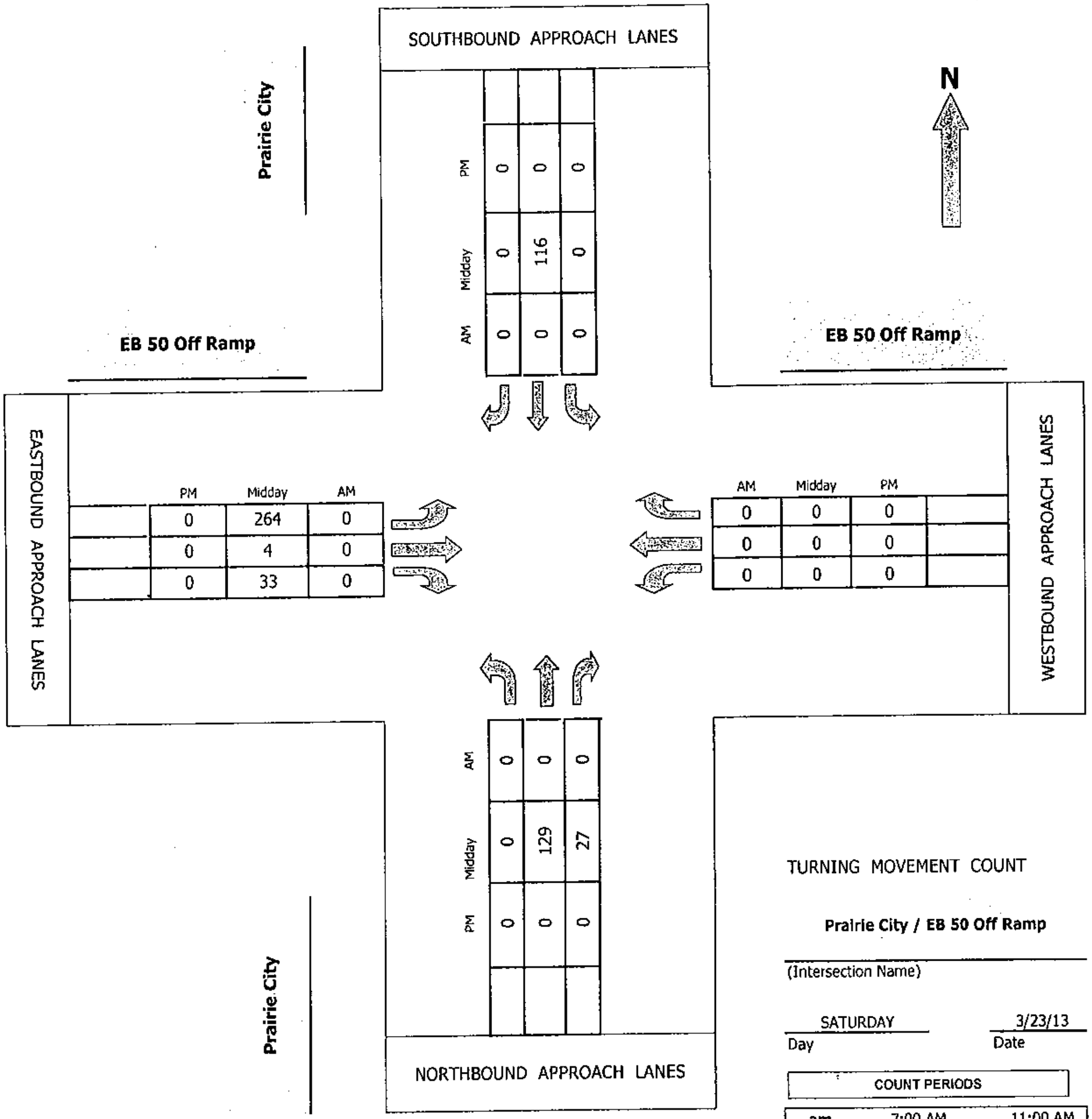
Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	15			0	26				
12:15	2	9			0	16				
12:30	0	13			0	25				
12:45	0	11	2	48	0	12	0	79	2	127
1:00	0	13			0	11				
1:15	0	18			0	7				
1:30	0	17			0	13				
1:45	0	16	0	64	0	9	0	40	0	104
2:00	0	16			0	11				
2:15	0	29			0	6				
2:30	0	13			0	11				
2:45	0	12	0	70	0	7	0	35	0	105
3:00	0	15			0	6				
3:15	0	20			0	3				
3:30	0	14			0	7				
3:45	0	22	0	71	0	4	0	20	0	91
4:00	0	17			0	8				
4:15	0	21			0	3				
4:30	0	21			0	5				
4:45	0	16	0	75	0	2	0	18	0	93
5:00	0	17			0	0				
5:15	0	27			0	2				
5:30	0	31			0	2				
5:45	0	15	0	90	1	2	1	6	1	96
6:00	1	24			2	3				
6:15	0	14			0	1				
6:30	0	11			1	0				
6:45	0	9	1	58	2	0	5	4	6	62
7:00	1	1			2	0				
7:15	0	8			0	1				
7:30	0	2			2	4				
7:45	0	3	1	14	1	1	5	6	6	20
8:00	1	2			5	0				
8:15	0	5			15	0				
8:30	1	0			11	0				
8:45	0	1	2	8	17	0	48	0	50	8
9:00	1	2			15	0				
9:15	1	2			18	0				
9:30	3	1			40	0	0			
9:45	2	0	7	5	24	1	97	1	104	6
10:00	1	0			37	0				
10:15	3	0			30	0				
10:30	3	1			20	0				
10:45	1	0	8	1	22	0	109	0	117	1
11:00	2	0			23	0				
11:15	2	0			26	0				
11:30	6	2			15	0				
11:45	3	0	13	2	22	0	86	0	99	2
Total	34	506	34	506	351	209	351	209	385	715
Combined Total	540		540		560		560		1100	
AM Peak	11:45 AM				9:30 AM					
Vol.	40				131					
P.H.F.	0.667				0.819					
PM Peak		5:15 PM				12:00 PM				
Vol.		97				79				
P.H.F.		0.710				0.760				
Percentage	6.3%	93.7%			62.7%	37.3%				

Intersection Turning Movement

Prepared by:
KD Anderson Associates, Inc.

TMC Summary of Prairie City/EB 50 Off Ramp

Project #: 0090-04



TURNING MOVEMENT COUNT

Prairie City / EB 50 Off Ramp

(Intersection Name)

SATURDAY — Day

3/23/13 — Date

COUNT PERIODS

am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	1:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	0 AM
NOON PEAK HOUR	1200 PM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by:

N-S STREET: Prairie City
DATE: 3/23/13
LOCATION:

E-W STREET: EB 50 Off Ramp
DAY: SATURDAY
PROJECT# 0090-04

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM		21	7		23		73	1	11				136
11:15 AM		30	6		24		66	1	9				136
11:30 AM		15	7		22		59	0	8				111
11:45 AM		31	2		22		62	2	12				131
12:00 PM		37	8		30		56	2	6				139
12:15 PM		35	5		32		53	1	9				135
12:30 PM		25	5		26		81	1	11				149
12:45 PM		32	9		28		74	0	7				150
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	226	49	0	207	0	524	8	73	0	0	0	1087

NOON Peak Hr Begins at: 1200 PM

PEAK VOLUMES =	0	129	27	0	116	0	264	4	33	0	0	0	573
PEAK HR. FACTOR:		0.867			0.906			0.809			0.000		0.955

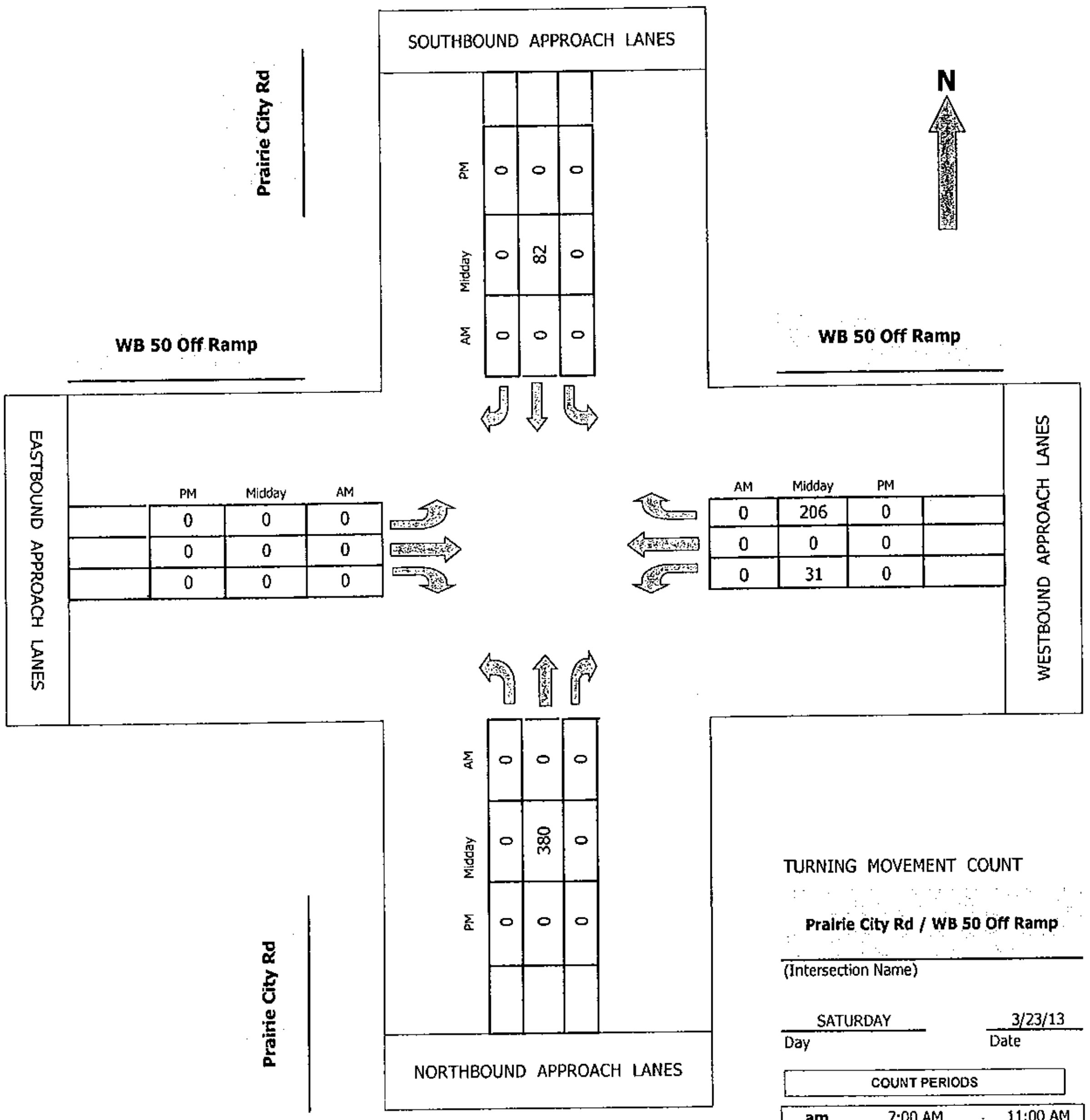
CONTROL:

Intersection Turning Movement

Prepared by:
KD Anderson Associates, Inc.

TMC Summary of Prairie City Rd/WB 50 Off Ramp

Project #: 0090-04



TURNING MOVEMENT COUNT

Prairie City Rd / WB 50 Off Ramp
(Intersection Name)

SATURDAY	3/23/13
Day	Date

COUNT PERIODS

am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	1:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	0 AM
NOON PEAK HOUR	1145 AM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by:

N-S STREET: Prairie City Rd
DATE: 3/23/13
LOCATION:

E-W STREET: WB 50 Off Ramp
DAY: SATURDAY
PROJECT# 0090-04

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM		100			18					6		52	176
11:15 AM		91			21					5		43	160
11:30 AM		83			12					12		57	164
11:45 AM		103			17					9		64	193
12:00 PM		80			20					5		45	150
12:15 PM		80			22					8		47	157
12:30 PM		117			23					9		50	199
12:45 PM		95			18					4		46	163
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	749	0	0	151	0	0	0	0	58	0	404	1362

NOON Peak Hr Begins at: 1145 AM

PEAK VOLUMES =	0	380	0	0	82	0	0	0	0	31	0	206	699
PEAK HR. FACTOR:		0.812			0.891			0.000			0.812		0.878

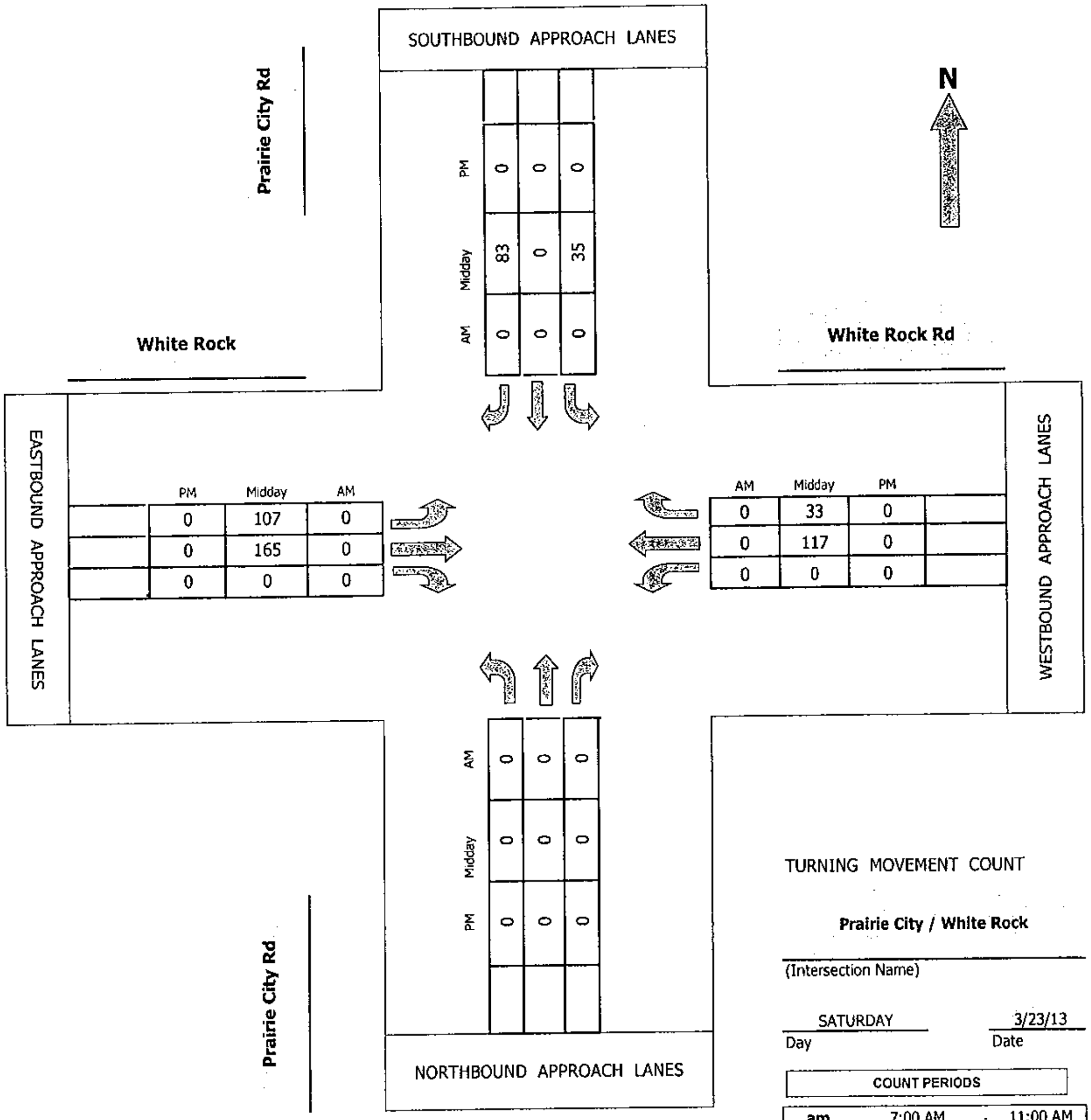
CONTROL:

Intersection Turning Movement

Prepared by:
KD Anderson Associates, Inc.

TMC Summary of Prairie City Rd/White Rock Rd

Project #: 0090-04



Southbound approach:

PM	0	0	0
Midday	83	0	35
AM	0	0	0

Eastbound approach:

PM	Midday	AM
0	107	0
0	165	0
0	0	0

Westbound approach:

AM	Midday	PM
0	33	0
0	117	0
0	0	0

Northbound approach:

AM	0	0	0
Midday	0	0	0
PM	0	0	0

TURNING MOVEMENT COUNT

Prairie City / White Rock
(Intersection Name)

SATURDAY
Day

3/23/13
Date

COUNT PERIODS			
am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	1:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR 0 AM

NOON PEAK HOUR 1100 AM

PM PEAK HOUR 0 AM

Intersection Turning Movement

Prepared by:

N-S STREET: Prairie City Rd

DATE: 3/23/13

LOCATION: Folsom

E-W STREET: White Rock Rd

DAY: SATURDAY

PROJECT# 0090-04

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM				7		23	19	39			28	5	121
11:15 AM				10		10	20	26			23	5	94
11:30 AM				6		22	22	60			34	14	158
11:45 AM				12		28	46	40			32	9	167
12:00 PM				6		13	7	4			25	6	61
12:15 PM				7		29	26	30			27	10	129
12:30 PM				12		22	29	51			19	10	143
12:45 PM				13		19	22	37			34	5	130
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	0	0	73	0	166	191	287	0	0	222	64	1003

NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	0	0	0	35	0	83	107	165	0	0	117	33	540
PEAK HR. FACTOR:		0.000			0.738			0.000			0.781		0.808

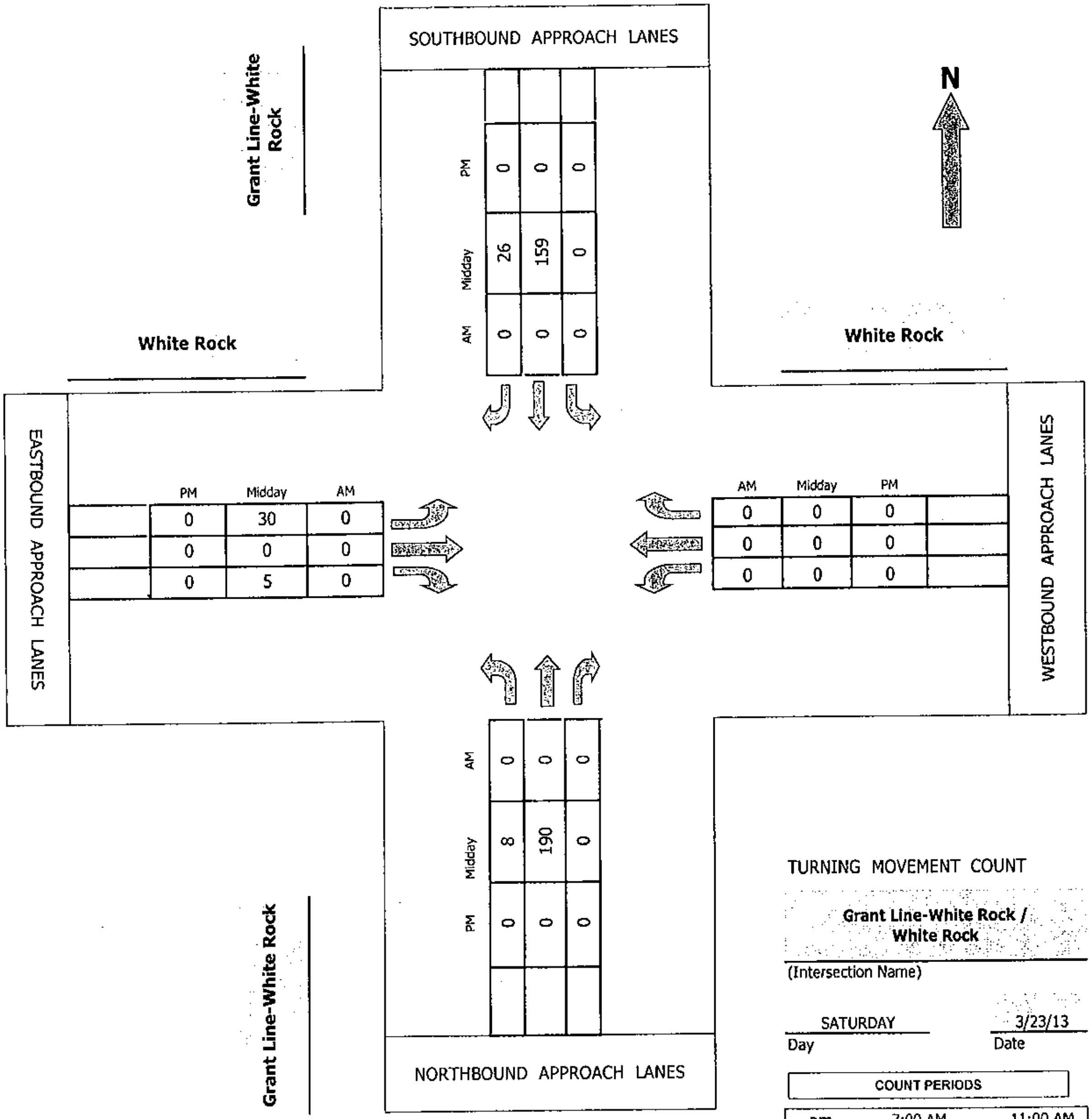
CONTROL:

Intersection Turning Movement

Prepared by:
KD Anderson Associates, Inc.

TMC Summary of Grant Line-White Rock/White Rock

Project #: 0090-04



SOUTHBOUND APPROACH LANES

PM	0	0	0
Midday	26	159	0
AM	0	0	0

EASTBOUND APPROACH LANES

PM	Midday	AM
0	30	0
0	0	0
0	5	0

WESTBOUND APPROACH LANES

AM	Midday	PM
0	0	0
0	0	0
0	0	0

NORTHBOUND APPROACH LANES

AM	0	0	0
Midday	8	190	0
PM	0	0	0

TURNING MOVEMENT COUNT

Grant Line-White Rock / White Rock
(Intersection Name)

SATURDAY
Day

3/23/13
Date

COUNT PERIODS

am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	1:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR 0 AM

NOON PEAK HOUR 1200 PM

PM PEAK HOUR 0 AM

Intersection Turning Movement

Prepared by:

N-S STREET: Grant Line-White Rock DATE: 3/23/13 LOCATION: Folsom

E-W STREET: White Rock DAY: SATURDAY PROJECT# 0090-04

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	1	45			34	5	7		1				93
11:15 AM	1	53			32	4	12		2				104
11:30 AM	1	57			38	5	4		0				105
11:45 AM	1	46			33	6	5		1				92
12:00 PM	1	36			28	8	3		1				77
12:15 PM	2	48			46	7	11		1				115
12:30 PM	4	59			42	3	7		1				116
12:45 PM	1	47			43	8	9		2				110
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	12	391	0	0	296	46	58	0	9	0	0	0	812

NOON Peak Hr Begins at: 1200 PM

PEAK VOLUMES =	8	190	0	0	159	26	30	0	5	0	0	0	418
PEAK HR. FACTOR:		0.786			0.873			0.729			0.000		0.901

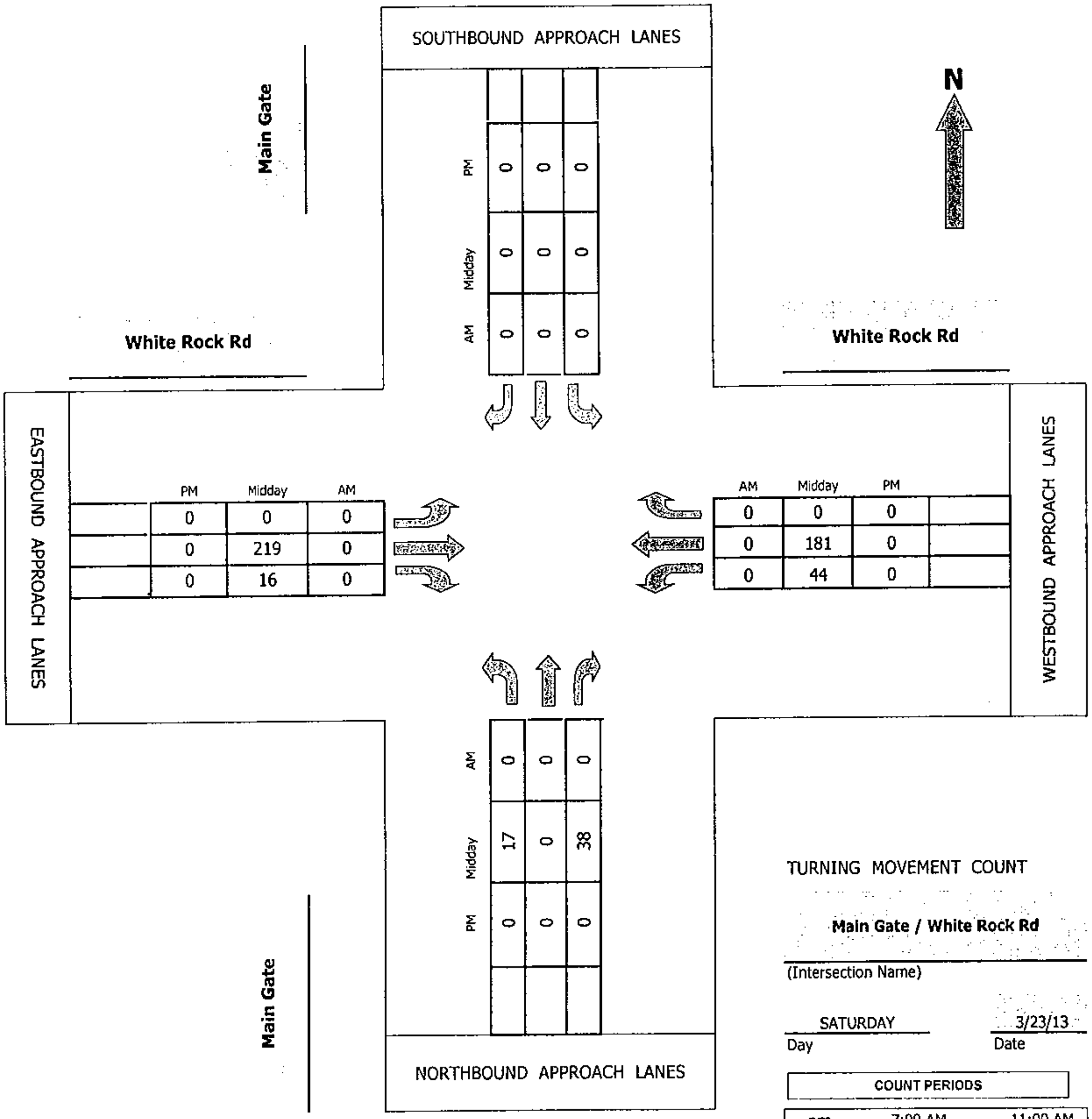
CONTROL:

Intersection Turning Movement

Prepared by:
KD Anderson Associates, Inc.

TMC Summary of Main Gate/White Rock Rd

Project #: 0090-04



TURNING MOVEMENT COUNT

Main Gate / White Rock Rd
(Intersection Name)

SATURDAY
Day

3/23/13
Date

COUNT PERIODS			
am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	1:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	0 AM
NOON PEAK HOUR	1200 PM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by:

N-S STREET: Gate 4

DATE: 3/23/13

LOCATION: Folsom

E-W STREET: White Rock Rd

DAY: SATURDAY

PROJECT# 0090-04

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	1		2					37	1	3	47		91
11:15 AM	1		3					57	1	2	42		106
11:30 AM	2		2					58	3	1	57		123
11:45 AM	4		2					59	2	3	52		122
12:00 PM	1		3					54	1	2	48		109
12:15 PM	2		1					53	4	3	57		120
12:30 PM	4		1					76	1	3	47		132
12:45 PM	1		2					56	1	3	52		115
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	16	0	16	0	0	0	0	450	14	20	402	0	918

NOON Peak Hr Begins at: 1145 AM

PEAK VOLUMES =	11	0	7	0	0	0	0	242	8	11	204	0	483
PEAK HR. FACTOR:		0.750			0.000			0.812			0.000		0.915

CONTROL:

TRAFFIC COUNTS

APRIL 2013

KDA

Prepared by NDS/ATD

Volumes for: Thursday, April 04, 2013 City: Sacramento County Project #: 13-7172-001

Location: White Rock Road west of the main entrance into Prarie City.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	40			4	35				
12:15	5	38			5	30				
12:30	4	32			3	39				
12:45	4	53	18	163	4	34	16	138	34	301
1:00	3	37			3	33				
1:15	3	30			3	36				
1:30	1	56			1	43				
1:45	1	66	8	189	5	44	12	156	20	345
2:00	3	51			0	42				
2:15	1	38			3	31				
2:30	0	47			4	39				
2:45	1	69	5	205	1	45	8	157	13	362
3:00	0	58			2	51				
3:15	0	73			6	41				
3:30	0	69			3	61				
3:45	2	104	2	304	1	75	12	228	14	532
4:00	6	90			6	76				
4:15	2	121			3	73				
4:30	7	124			2	106				
4:45	8	142	23	477	8	93	19	348	42	825
5:00	6	163			10	109				
5:15	9	161			8	134				
5:30	11	187			22	178				
5:45	24	162	50	673	25	96	65	517	115	1190
6:00	30	131			38	78				
6:15	18	95			38	65				
6:30	40	89			54	57				
6:45	40	63	128	378	59	44	189	244	317	622
7:00	67	54			80	43				
7:15	60	46			111	34				
7:30	76	59			144	25				
7:45	122	36	325	195	139	37	474	139	799	334
8:00	133	23			153	24				
8:15	114	16			146	21				
8:30	116	29			125	14				
8:45	119	22	482	90	112	15	536	74	1018	164
9:00	93	15			74	25				
9:15	77	20			67	19				
9:30	69	14			44	12				
9:45	54	15	293	64	38	14	223	70	516	134
10:00	53	12			31	5				
10:15	43	11			26	13				
10:30	31	10			36	18				
10:45	40	13	167	46	39	9	132	45	299	91
11:00	44	6			35	7				
11:15	32	4			22	5				
11:30	47	6			29	4				
11:45	43	1	166	17	24	5	110	21	276	38
Total	1667	2801	1667	2801	1796	2137	1796	2137	3463	4938
Combined Total	4468		4468		3933		3933		8401	
AM Peak	7:45 AM				7:30 AM					
Vol.	485				582					
P.H.F.	0.912				0.951					
PM Peak		5:00 PM				5:00 PM				
Vol.		673				517				
P.H.F.		0.900				0.726				
Percentage	37.3%	62.7%			45.7%	54.3%				

Prepared by NDS/ATD

Volumes for: Thursday, April 04, 2013 City: Sacramento County Project #: 13-7172-002

Location: White Rock Road east of the entrance.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	7	39			3	39				
12:15	5	46			5	27				
12:30	4	34			3	39				
12:45	4	60	20	179	3	36	14	141	34	320
1:00	3	35			3	39				
1:15	4	35			3	40				
1:30	1	66			1	35				
1:45	2	59	10	195	5	46	12	160	22	355
2:00	2	52			0	42				
2:15	1	37			3	30				
2:30	0	50			4	42				
2:45	1	64	4	203	1	42	8	156	12	359
3:00	0	60			2	49				
3:15	0	87			5	38				
3:30	0	63			3	58				
3:45	2	107	2	317	2	76	12	221	14	538
4:00	6	88			4	74				
4:15	2	124			3	70				
4:30	9	133			2	101				
4:45	8	147	25	492	6	86	15	331	40	823
5:00	7	173			9	110				
5:15	9	166			9	129				
5:30	11	183			20	166				
5:45	25	164	52	686	25	92	63	497	115	1183
6:00	31	134			39	76				
6:15	18	103			37	60				
6:30	43	80			54	56				
6:45	41	64	133	381	57	42	187	234	320	615
7:00	64	54			85	41				
7:15	63	50			108	28				
7:30	82	55			141	24				
7:45	124	39	333	198	138	37	472	130	805	328
8:00	133	24			158	22				
8:15	112	15			144	18				
8:30	112	28			126	13				
8:45	126	22	483	89	120	15	548	68	1031	157
9:00	86	18			76	24				
9:15	75	18			62	17				
9:30	71	13			47	12				
9:45	47	15	279	64	39	13	224	66	503	130
10:00	54	11			31	6				
10:15	42	13			27	14				
10:30	35	9			38	16				
10:45	48	14	179	47	38	10	134	46	313	93
11:00	43	6			36	6				
11:15	29	5			21	4				
11:30	51	8			28	4				
11:45	47	6	170	25	26	9	111	23	281	48
Total	1690	2876	1690	2876	1800	2073	1800	2073	3490	4949
Combined Total	4566		4566		3873		3873		8439	
AM Peak	8:00 AM				7:30 AM					
Vol.	483				581					
P.H.F.	0.908				0.919					
PM Peak		5:00 PM				5:00 PM				
Vol.		686				497				
P.H.F.		0.937				0.748				
Percentage	37.0%	63.0%			46.5%	53.5%				

Prepared by NDS/ATD

Volumes for: Thursday, April 04, 2013 City: Sacramento County Project #: 13-7172-003

Location: Prarie City Road north of White Rock Road.

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	25			2	19				
12:15	3	27			2	18				
12:30	2	30			0	17				
12:45	2	31	8	113	1	17	5	71	13	184
1:00	1	32			1	22				
1:15	3	31			2	20				
1:30	0	23			0	22				
1:45	0	35	4	121	1	29	4	93	8	214
2:00	2	23			0	23				
2:15	3	14			1	25				
2:30	0	27			0	31				
2:45	0	33	5	97	0	21	1	100	6	197
3:00	1	40			0	19				
3:15	1	31			0	35				
3:30	0	36			1	38				
3:45	1	50	3	157	0	43	1	135	4	292
4:00	3	50			3	43				
4:15	4	58			0	43				
4:30	6	57			4	44				
4:45	7	57	20	222	2	65	9	195	29	417
5:00	3	68			2	77				
5:15	4	62			5	113				
5:30	5	56			8	113				
5:45	14	73	26	259	12	67	27	370	53	629
6:00	27	44			15	52				
6:15	13	42			13	43				
6:30	31	44			15	39				
6:45	25	25	96	155	20	16	63	150	159	305
7:00	34	30			35	18				
7:15	47	21			49	29				
7:30	59	25			45	19				
7:45	87	23	227	99	41	21	170	87	397	186
8:00	80	19			47	20				
8:15	107	8			47	9				
8:30	96	17			33	14				
8:45	83	11	366	55	51	9	178	52	544	107
9:00	64	11			28	12				
9:15	50	12			17	17				
9:30	51	10			20	10	0			
9:45	34	5	199	38	21	5	86	44	285	82
10:00	29	7			16	2				
10:15	31	2			19	12				
10:30	25	5			10	8				
10:45	37	3	122	17	22	5	67	27	189	44
11:00	40	2			19	6				
11:15	16	6			9	2				
11:30	23	6			10	7				
11:45	31	0	110	14	15	7	53	22	163	36
Total	1186	1347	1186	1347	664	1346	664	1346	1850	2693
Combined Total	2533		2533		2010		2010		4543	
AM Peak	7:45 AM				7:15 AM					
Vol.	370				182					
P.H.F.	0.864				0.929					
PM Peak		5:00 PM				5:00 PM				
Vol.		259				370				
P.H.F.		0.890				0.819				
Percentage	46.8%	53.2%			33.0%	67.0%				

Prepared by NDS/ATD

Volumes for: Thursday, April 04, 2013 City: Sacramento County Project #: 13-7172-004

Location: Main Access Road to Prarie City south of White Rock Road.

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	3			0	3				
12:15	0	6			0	1				
12:30	0	4			0	1				
12:45	0	5	1	18	0	1	0	6	1	24
1:00	0	0			0	4				
1:15	0	5			0	5				
1:30	0	9			0	4				
1:45	0	4	0	18	0	2	0	15	0	33
2:00	0	2			0	4				
2:15	0	1			0	1				
2:30	0	0			0	2				
2:45	0	4	0	7	0	10	0	17	0	24
3:00	0	3			0	3				
3:15	0	7			0	3				
3:30	0	5			0	2				
3:45	0	1	0	16	0	3	0	11	0	27
4:00	0	5			0	6				
4:15	0	3			0	0				
4:30	0	4			0	2				
4:45	0	7	0	19	0	2	0	10	0	29
5:00	0	3			0	2				
5:15	0	12			0	1				
5:30	0	1			0	0				
5:45	0	1	0	17	1	1	1	4	1	21
6:00	1	0			4	0				
6:15	1	1			1	0				
6:30	0	3			0	3				
6:45	0	0	2	4	0	0	5	3	7	7
7:00	0	2			4	1				
7:15	0	5			2	0				
7:30	0	0			5	0				
7:45	4	1	4	8	3	0	14	1	18	9
8:00	1	1			5	1				
8:15	2	2			2	0				
8:30	2	0			5	0				
8:45	0	0	5	3	8	0	20	1	25	4
9:00	3	0			7	0				
9:15	2	0			0	0				
9:30	1	0			5	1	0			
9:45	1	0	7	0	9	0	21	1	28	1
10:00	2	0			3	1				
10:15	3	1			4	1				
10:30	3	0			2	0				
10:45	4	0	12	1	2	0	11	2	23	3
11:00	3	0			0	0				
11:15	2	0			5	0				
11:30	1	1			2	0				
11:45	2	0	8	1	0	0	7	0	15	1
Total	39	112	39	112	79	71	79	71	118	183
Combined Total	151		151		150		150		301	
AM Peak	11:45 AM				8:15 AM					
Vol.	15				22					
P.H.F.	0.625				0.688					
PM Peak		4:30 PM				2:30 PM				
Vol.		26				18				
P.H.F.		0.607				0.450				
Percentage	25.8%	74.2%			52.7%	47.3%				

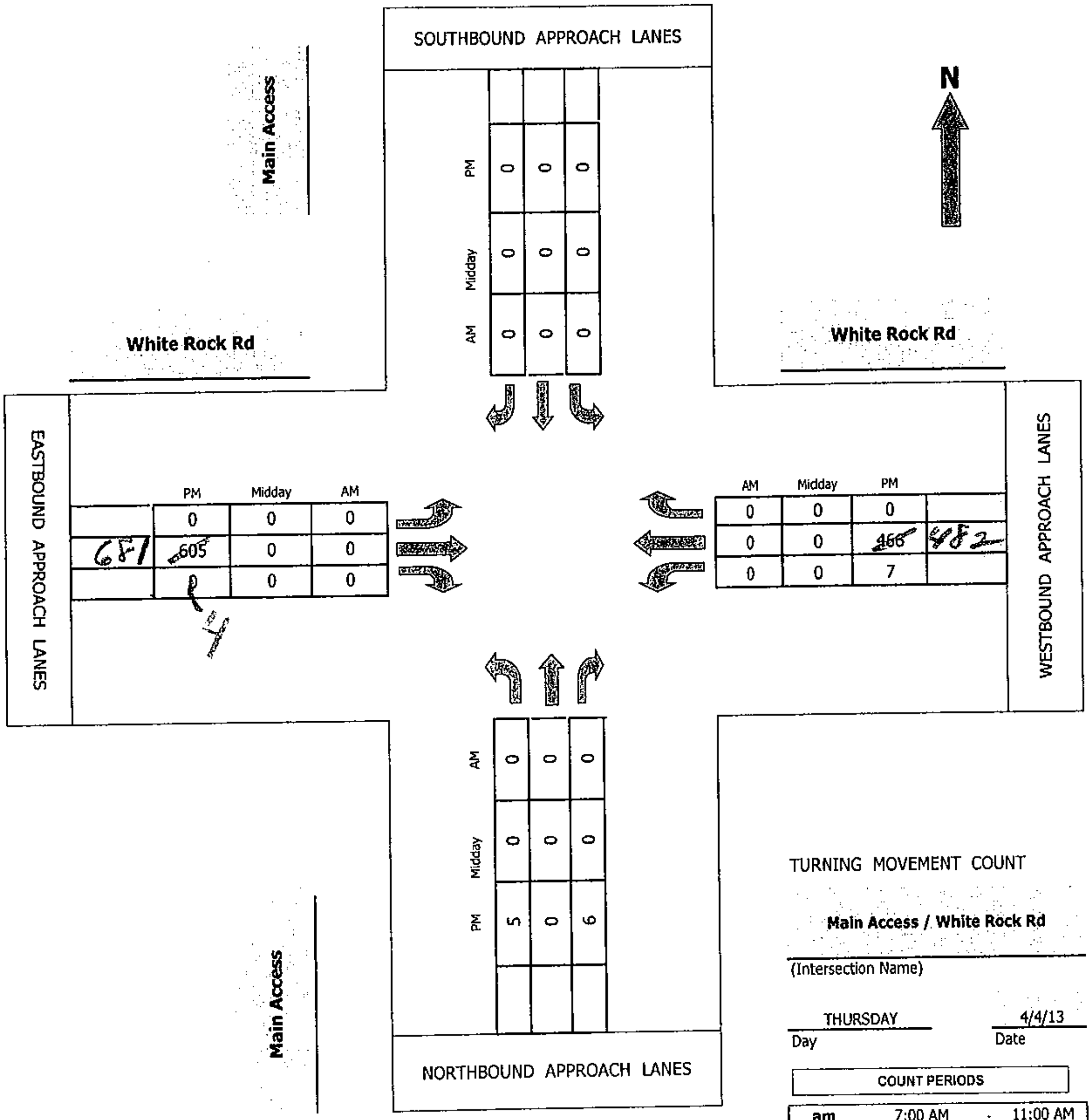
Intersection Turning Movement

Prepared by:

KD Anderson Associates, Inc.

TMC Summary of Main Access/White Rock Rd

Project #: 0090-04



TURNING MOVEMENT COUNT

Main Access / White Rock Rd

(Intersection Name)

THURSDAY

Day

4/4/13

Date

COUNT PERIODS			
am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	2:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

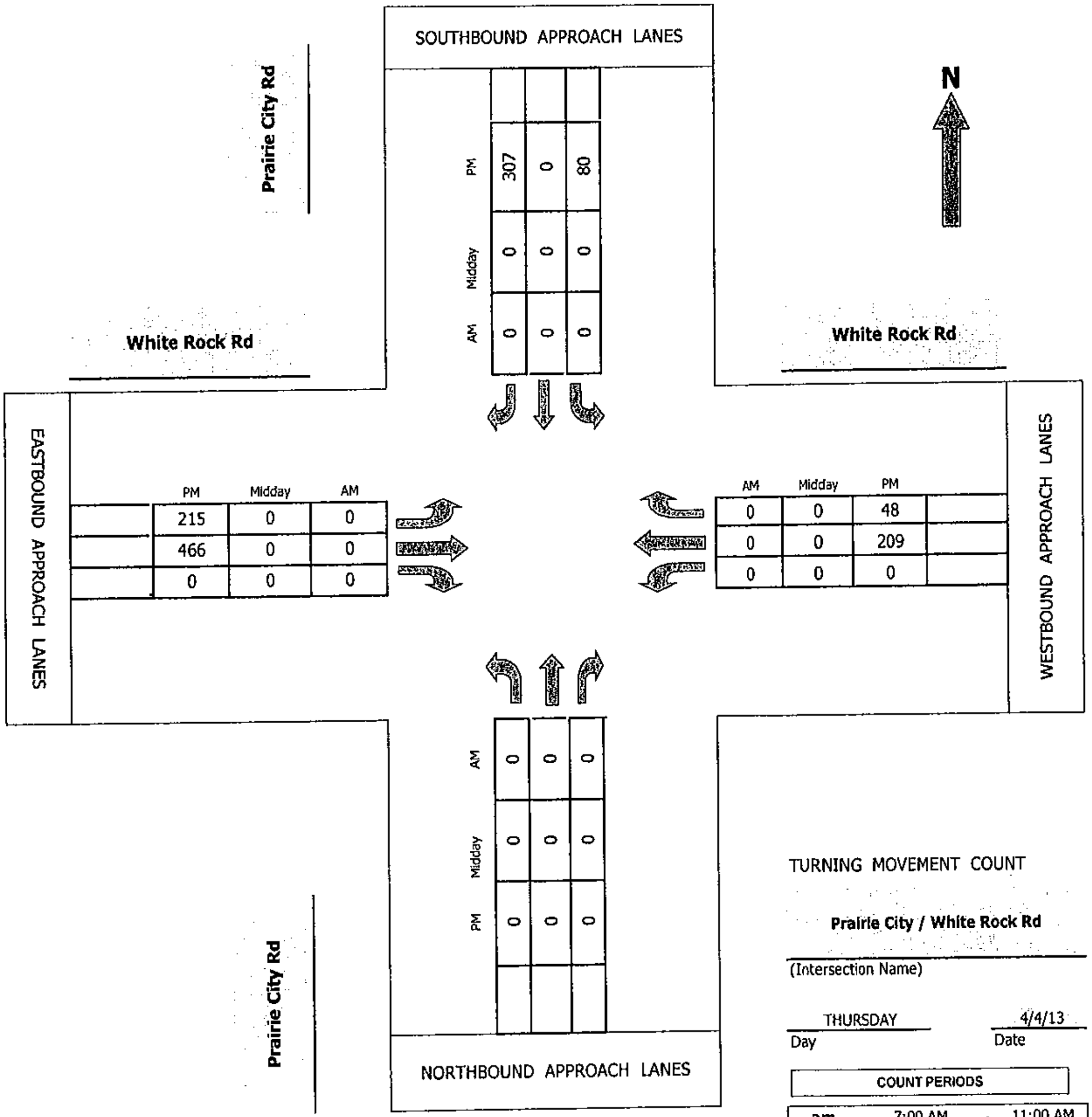
PM PEAK HOUR 430 PM

Intersection Turning Movement

Prepared by:
KD Anderson Associates, Inc.

TMC Summary of Prairie City Rd/White Rock Rd

Project #: 0090-04



SOUTHBOUND APPROACH LANES

PM	307	0	80
Midday	0	0	0
AM	0	0	0

EASTBOUND APPROACH LANES

PM	Midday	AM
215	0	0
466	0	0
0	0	0

WESTBOUND APPROACH LANES

AM	Midday	PM
0	0	48
0	0	209
0	0	0

NORTHBOUND APPROACH LANES

AM	0	0	0
Midday	0	0	0
PM	0	0	0

TURNING MOVEMENT COUNT

Prairie City / White Rock Rd
(Intersection Name)

THURSDAY
Day

4/4/13
Date

COUNT PERIODS

am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	2:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

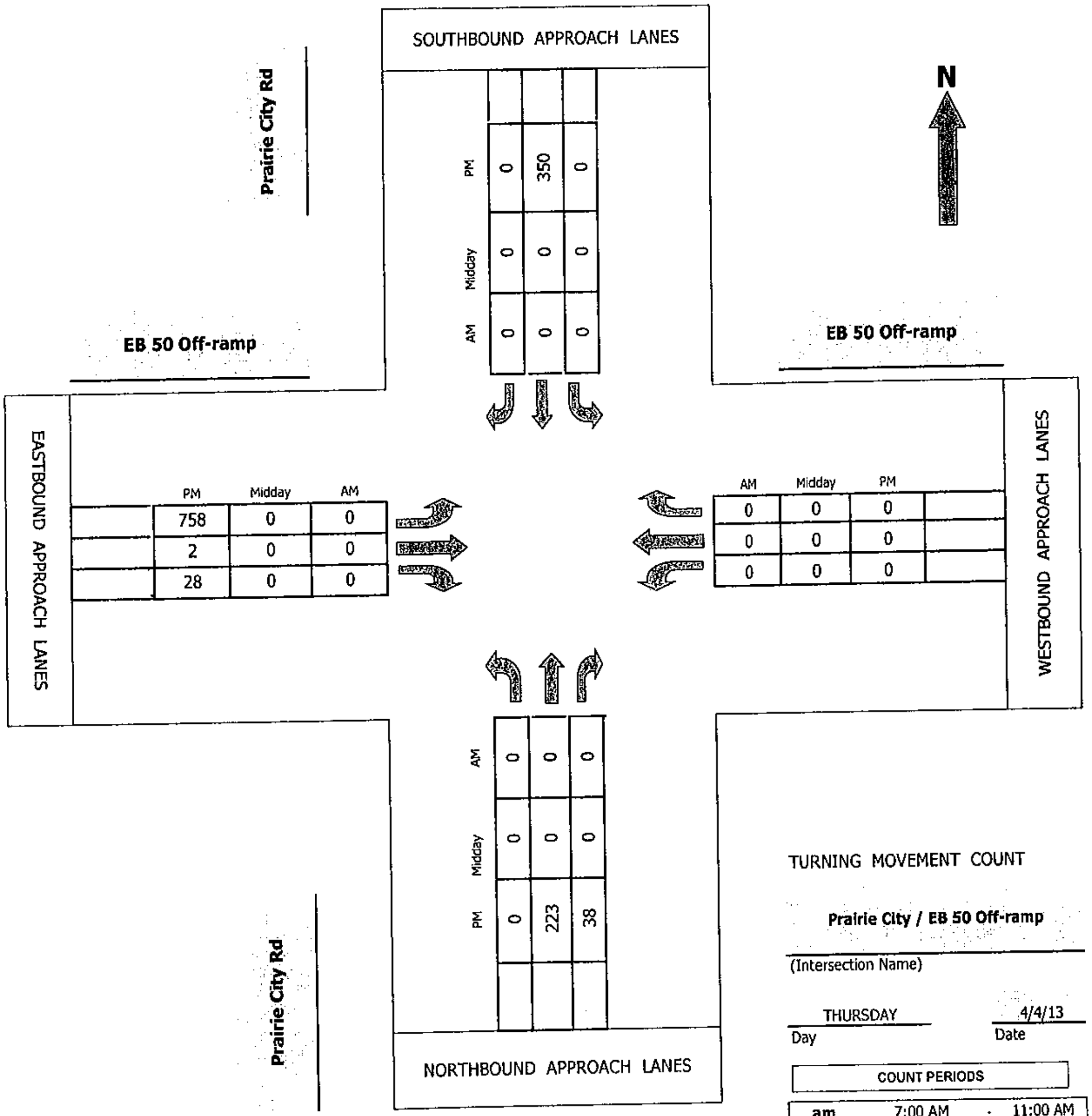
PM PEAK HOUR 445 PM

Intersection Turning Movement

Prepared by:
KD Anderson Associates, Inc.

TMC Summary of Prairie City Rd/EB 50 Off-ramp

Project #: 0090-04



TURNING MOVEMENT COUNT

Prairie City / EB 50 Off-ramp
(Intersection Name)

THURSDAY
Day

4/4/13
Date

COUNT PERIODS

am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	2:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 445 PM

TRAFFIC COUNTS

MAY 2013

KDA

Prepared by NDS/ATD

Volumes for: Saturday, May 18, 2013 City: Sacramento County Project #: 13-7315-001

Location: White Rock Road west of the main entrance into Prarie City.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	118			6	33				
12:15	4	94			3	29				
12:30	3	83			5	48				
12:45	2	87	12	382	11	34	25	144	37	526
1:00	5	94			7	63				
1:15	3	58			5	55				
1:30	3	57			5	42				
1:45	2	84	13	293	3	45	20	205	33	498
2:00	1	56			5	39				
2:15	1	56			9	63				
2:30	2	48			4	51				
2:45	1	44	5	204	6	47	24	200	29	404
3:00	2	59			1	69				
3:15	1	49			4	66				
3:30	2	42			0	57				
3:45	2	59	7	209	2	55	7	247	14	456
4:00	1	58			2	84				
4:15	2	52			2	48				
4:30	6	44			3	47				
4:45	2	44	11	198	6	101	13	280	24	478
5:00	3	18			3	248				
5:15	9	0			7	234				
5:30	39	0			12	220				
5:45	24	5	75	23	14	214	36	916	111	939
6:00	29	0			20	256				
6:15	37	4			15	243				
6:30	70	0			20	193				
6:45	75	3	211	7	20	199	75	891	286	898
7:00	87	21			24	155				
7:15	82	29			9	77				
7:30	91	25			21	61				
7:45	81	32	341	107	30	56	84	349	425	456
8:00	82	19			21	52				
8:15	96	34			23	38				
8:30	106	30			29	24				
8:45	95	19	379	102	23	37	96	151	475	253
9:00	107	25			22	28				
9:15	104	19			24	20				
9:30	136	22			21	23				
9:45	126	20	473	86	20	24	87	95	560	181
10:00	144	16			16	27				
10:15	131	9			27	17				
10:30	128	15			26	21				
10:45	109	17	512	57	25	14	94	79	606	136
11:00	106	7			15	9				
11:15	121	10			10	13				
11:30	122	10			1	12				
11:45	101	5	450	32	7	14	33	48	483	80
Total	2489	1700	2489	1700	594	3605	594	3605	3083	5305
Combined Total	4189		4189		4199		4199		8388	
AM Peak	9:30 AM				11:45 AM					
Vol.	537				117					
P.H.F.	0.932				0.609					
PM Peak		12:00 PM				5:30 PM				
Vol.		382				933				
P.H.F.		0.809				0.911				
Percentage	59.4%	40.6%			14.1%	85.9%				

Prepared by NDS/ATD

Volumes for: Saturday, May 18, 2013 City: Sacramento County Project #: 13-7315-002
Location: White Rock Road east of the entrance.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	67			6	46				
12:15	4	55			3	59				
12:30	3	58			2	81				
12:45	2	57	14	237	11	72	22	258	36	495
1:00	6	69			8	82				
1:15	2	41			4	52				
1:30	4	60			8	76				
1:45	4	93	16	263	2	56	22	266	38	529
2:00	1	72			5	43				
2:15	2	62			9	72				
2:30	1	74			4	60				
2:45	1	58	5	266	7	47	25	222	30	488
3:00	2	92			2	53				
3:15	1	80			4	47				
3:30	2	72			0	53				
3:45	2	87	7	331	3	49	9	202	16	533
4:00	1	74			2	63				
4:15	2	72			3	39				
4:30	5	69			3	34				
4:45	4	89	12	304	5	27	13	163	25	467
5:00	3	2			3	45				
5:15	8	0			7	11				
5:30	40	1			19	12				
5:45	20	0	71	3	15	8	44	76	115	79
6:00	24	0			27	8				
6:15	38	2			22	9				
6:30	58	0			30	13				
6:45	52	0	172	2	36	28	115	58	287	60
7:00	69	33			43	46				
7:15	63	67			24	40				
7:30	53	57			43	52				
7:45	56	50	241	207	54	46	164	184	405	391
8:00	46	38			40	47				
8:15	45	42			72	29				
8:30	48	44			99	20				
8:45	62	31	201	155	71	33	282	129	483	284
9:00	48	32			83	25				
9:15	49	33			69	17				
9:30	77	34			84	19				
9:45	56	30	230	129	71	22	307	83	537	212
10:00	62	19			52	26				
10:15	70	13			90	18				
10:30	72	16			82	24				
10:45	48	20	252	68	55	15	279	83	531	151
11:00	54	7			119	8				
11:15	64	12			30	15				
11:30	74	9			7	11				
11:45	55	5	247	33	1	13	157	47	404	80
Total	1468	1998	1468	1998	1439	1771	1439	1771	2907	3769
Combined Total	3466		3466		3210		3210		6676	
AM Peak	9:30 AM				10:15 AM					
Vol.	265				346					
P.H.F.	0.860				0.727					
PM Peak		3:00 PM				12:15 PM				
Vol.		331				294				
P.H.F.		0.899				0.896				
Percentage	42.4%	57.6%			44.8%	55.2%				

Prepared by NDS/ATD

Volumes for: Saturday, May 18, 2013 City: Sacramento County Project #: 13-7315-003
Location: Prarie City Road north of White Rock Road.

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	50			2	155				
12:15	4	44			2	158				
12:30	2	45			1	126				
12:45	0	34	12	173	5	149	10	588	22	761
1:00	2	50			0	71				
1:15	1	36			0	56				
1:30	2	40			6	65				
1:45	2	73	7	199	0	54	6	246	13	445
2:00	1	93			2	53				
2:15	2	70			3	47				
2:30	0	82			2	40				
2:45	1	84	4	329	0	30	7	170	11	499
3:00	1	141			0	41				
3:15	1	121			3	46				
3:30	0	93			1	30				
3:45	2	113	4	468	2	46	6	163	10	631
4:00	1	115			1	47				
4:15	0	89			1	36				
4:30	2	114			2	30				
4:45	1	262	4	580	2	29	6	142	10	722
5:00	2	245			6	32				
5:15	3	215			27	16				
5:30	13	212			27	15				
5:45	7	183	25	855	52	15	112	78	137	933
6:00	11	222			57	8				
6:15	15	215			78	14				
6:30	8	202			102	8				
6:45	13	192	47	831	127	17	364	47	411	878
7:00	17	154			120	12				
7:15	16	133			132	23				
7:30	24	123			158	24				
7:45	25	72	82	482	150	8	560	67	642	549
8:00	21	98			153	25				
8:15	25	46			138	16				
8:30	24	68			148	17				
8:45	26	53	96	265	124	13	563	71	659	336
9:00	25	30			122	17				
9:15	29	34			119	13				
9:30	42	33			117	10	0			
9:45	40	35	136	132	110	14	468	54	604	186
10:00	39	19			85	19				
10:15	24	22			130	11				
10:30	34	14			107	15				
10:45	28	15	125	70	147	5	469	50	594	120
11:00	32	4			136	3				
11:15	40	9			131	6				
11:30	63	4			119	4				
11:45	62	2	197	19	79	6	465	19	662	38
Total	739	4403	739	4403	3036	1695	3036	1695	3775	6098
Combined Total	5142		5142		4731		4731		9873	
AM Peak	11:30 AM				7:30 AM					
Vol.	219				599					
P.H.F.	0.869				0.948					
PM Peak		4:45 PM				12:00 PM				
Vol.		934				588				
P.H.F.		0.894				0.930				
Percentage	14.4%	85.6%			64.2%	35.8%				

Prepared by NDS/ATD

Volumes for: Saturday, May 18, 2013 City: Sacramento County Project #: 13-7315-004

Location: Main Access around 1000 feet south of White Rock Road.

Start Time	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00	2	9			0	75				
12:15	0	6			0	78				
12:30	3	8			1	71				
12:45	0	12	5	35	0	81	1	305	6	340
1:00	1	10			0	56				
1:15	1	12			0	34				
1:30	1	17			3	46				
1:45	2	21	5	60	0	24	3	160	8	220
2:00	0	33			0	24				
2:15	3	29			2	29				
2:30	0	36			1	24				
2:45	1	32	4	130	2	14	5	91	9	221
3:00	0	55			1	16				
3:15	0	65			0	13				
3:30	0	50			0	19				
3:45	0	44	0	214	1	12	2	60	2	274
4:00	0	46			0	11				
4:15	0	40			1	13				
4:30	0	48			0	6				
4:45	0	115	0	249	0	4	1	34	1	283
5:00	0	185			0	16				
5:15	0	214			0	10				
5:30	0	207			6	9				
5:45	4	209	4	815	10	7	16	42	20	857
6:00	5	242			16	6				
6:15	8	225			16	5				
6:30	3	176			21	8				
6:45	5	165	21	808	45	10	98	29	119	837
7:00	6	104			59	8				
7:15	6	74			42	2				
7:30	9	45			69	5				
7:45	11	30	32	253	68	1	238	16	270	269
8:00	6	28			62	4				
8:15	5	20			104	2				
8:30	9	22			130	3				
8:45	8	20	28	90	96	3	392	12	420	102
9:00	4	11			124	2				
9:15	6	18			116	1				
9:30	9	18			127	2	0			
9:45	7	14	26	61	126	2	493	7	519	68
10:00	7	4			138	0				
10:15	6	2			124	1				
10:30	7	1			125	2				
10:45	4	3	24	10	100	0	487	3	511	13
11:00	6	4			165	0				
11:15	8	1			83	0				
11:30	9	1			66	1				
11:45	11	1	34	7	53	0	367	1	401	8
Total	183	2732	183	2732	2103	760	2103	760	2286	3492
Combined Total	2915		2915		2863		2863		5778	
AM Peak	11:15 AM				9:30 AM					
Vol.	37				515					
P.H.F.	0.841				0.933					
PM Peak		5:30 PM				12:00 PM				
Vol.		883				305				
P.H.F.		0.930				0.941				
Percentage	6.3%	93.7%			73.5%	26.5%				

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

City of Sacramento County
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

File Name : 13-7314-001 Prairie City Road-WB Hwy 50 Ramps.ppd
Date : 5/18/2013

Unshifted Count = All Vehicles

	Prairie City Road Southbound					WB Hwy 50 Ramps Westbound					Prairie City Road Northbound					WB Hwy 50 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
09:30	0	54	0	0	54	16	0	46	0	62	0	85	0	0	85	0	0	0	0	0	201	0
09:45	0	36	0	0	36	18	0	59	0	77	0	121	0	0	121	0	0	0	0	0	234	0
10:00	0	49	0	0	49	13	0	57	0	70	0	95	0	0	95	0	0	0	0	0	214	0
10:15	0	44	0	0	44	9	0	49	0	58	0	53	0	0	53	0	0	0	0	0	155	0
Total	0	183	0	0	183	56	0	211	0	267	0	354	0	0	354	0	0	0	0	0	804	0
10:30	0	65	0	0	65	15	0	55	0	70	0	66	0	0	66	0	0	0	0	0	201	0
10:45	0	27	0	0	27	16	0	60	0	76	0	45	0	0	45	0	0	0	0	0	148	0
11:00	0	28	0	0	28	15	0	60	0	75	0	69	0	0	69	0	0	0	0	0	172	0
11:15	0	45	0	0	45	16	0	58	0	74	0	106	0	0	106	0	0	0	0	0	225	0
Total	0	165	0	0	165	62	0	233	0	295	0	286	0	0	286	0	0	0	0	0	746	0
16:00	0	21	0	0	21	5	0	43	0	48	0	127	0	0	127	0	0	0	0	0	196	0
16:15	0	22	0	0	22	11	0	43	0	54	0	128	0	0	128	0	0	0	0	0	204	0
16:30	0	16	0	0	16	4	0	49	0	53	0	90	0	0	90	0	0	0	0	0	159	0
16:45	0	26	0	0	26	4	0	59	0	63	0	125	0	0	125	0	0	0	0	0	214	0
Total	0	85	0	0	85	24	0	194	0	218	0	470	0	0	470	0	0	0	0	0	773	0
17:00	0	9	0	0	9	3	0	37	0	40	0	155	0	0	155	0	0	0	0	0	204	0
17:15	0	20	0	0	20	6	0	67	0	73	0	111	0	0	111	0	0	0	0	0	204	0
17:30	0	10	0	0	10	4	0	51	0	55	0	120	0	0	120	0	0	0	0	0	185	0
17:45	0	11	0	0	11	4	0	57	0	61	0	96	0	0	96	0	0	0	0	0	168	0
Total	0	50	0	0	50	17	0	212	0	229	0	482	0	0	482	0	0	0	0	0	761	0
Grand Total	0	483	0	0	483	159	0	850	0	1009	0	1592	0	0	1592	0	0	0	0	0	3084	0
Apprch %	0.0%	100.0%	0.0%			15.8%	0.0%	84.2%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	15.7%	0.0%		15.7%	5.2%	0.0%	27.6%		32.7%	0.0%	51.6%	0.0%		51.6%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Prairie City Road Southbound					WB Hwy 50 Ramps Westbound					Prairie City Road Northbound					WB Hwy 50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 09:30 to 10:30																					
Peak Hour For Entire Intersection Begins at 09:30																					
09:30	0	54	0		54	16	0	46		62	0	85	0		85	0	0	0		0	201
09:45	0	36	0		36	18	0	59		77	0	121	0		121	0	0	0		0	234
10:00	0	49	0		49	13	0	57		70	0	95	0		95	0	0	0		0	214
10:15	0	44	0		44	9	0	49		58	0	53	0		53	0	0	0		0	155
Total Volume	0	183	0		183	56	0	211		267	0	354	0		354	0	0	0		0	804
% App Total	0.0%	100.0%	0.0%			21.0%	0.0%	79.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.847	.000		.847	.778	.000	.894		.867	.000	.731	.000		.731	.000	.000	.000		.000	.859

PM PEAK HOUR	Prairie City Road Southbound					WB Hwy 50 Ramps Westbound					Prairie City Road Northbound					WB Hwy 50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	26	0		26	4	0	59		63	0	125	0		125	0	0	0		0	214
17:00	0	9	0		9	3	0	37		40	0	155	0		155	0	0	0		0	204
17:15	0	20	0		20	6	0	67		73	0	111	0		111	0	0	0		0	204
17:30	0	10	0		10	4	0	51		55	0	120	0		120	0	0	0		0	185
Total Volume	0	65	0		65	17	0	214		231	0	511	0		511	0	0	0		0	807
% App Total	0.0%	100.0%	0.0%			7.4%	0.0%	92.6%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.625	.000		.625	.708	.000	.799		.791	.000	.824	.000		.824	.000	.000	.000		.000	.943

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

City of Sacramento County
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

File Name : 13-7314-002 Prairie City Road-EB Hwy 50 Ramps.ppd
Date : 5/18/2013

Unshifted Count = All Vehicles

	Prairie City Road Southbound					EB Hwy 50 Ramps Westbound					Prairie City Road Northbound					EB Hwy 50 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
09:30	4	70	0	0	74	0	0	0	0	0	0	39	16	0	55	65	1	117	0	183	312	0
09:45	0	54	0	0	54	0	0	0	0	0	0	48	31	0	79	91	4	122	0	217	350	0
10:00	10	39	0	0	49	0	0	0	0	0	0	26	11	0	37	79	25	71	0	175	261	0
10:15	4	44	0	0	48	0	0	0	0	0	0	30	7	0	37	25	5	55	0	85	170	0
Total	18	207	0	0	225	0	0	0	0	0	0	143	65	0	208	260	35	365	0	660	1093	0
10:30	13	62	0	0	75	0	0	0	0	0	0	35	10	0	45	43	9	89	0	141	261	0
10:45	8	30	0	0	38	0	0	0	0	0	0	20	12	0	32	36	7	69	0	112	182	0
11:00	2	35	0	0	37	0	0	0	0	0	0	29	11	0	40	54	6	116	0	176	253	0
11:15	8	48	0	0	56	0	0	0	0	0	0	43	12	0	55	87	10	98	0	195	306	0
Total	31	175	0	0	206	0	0	0	0	0	0	127	45	0	172	220	32	372	0	624	1002	0
16:00	0	25	0	0	25	0	0	0	0	0	0	110	13	0	123	86	1	11	0	98	246	0
16:15	0	29	0	0	29	0	0	0	0	0	0	82	13	0	95	82	2	11	0	95	219	0
16:30	0	24	0	0	24	0	0	0	0	0	0	83	12	0	95	78	0	6	0	84	203	0
16:45	3	22	0	0	25	0	0	0	0	0	0	200	41	0	241	89	2	8	0	99	365	0
Total	3	100	0	0	103	0	0	0	0	0	0	475	79	0	554	335	5	36	0	376	1033	0
17:00	2	15	0	0	17	0	0	0	0	0	0	190	52	0	242	82	0	7	0	89	348	0
17:15	3	18	0	0	21	0	0	0	0	0	0	207	40	0	247	70	1	8	0	79	347	0
17:30	1	16	0	0	17	0	0	0	0	0	0	192	29	0	221	74	2	1	0	77	315	0
17:45	0	15	0	0	15	0	0	0	0	0	0	162	28	0	190	76	1	13	0	90	295	0
Total	6	64	0	0	70	0	0	0	0	0	0	751	149	0	900	302	4	29	0	335	1305	0
Grand Total	58	546	0	0	604	0	0	0	0	0	0	1496	338	0	1834	1117	76	802	0	1995	4433	0
Apprch %	9.6%	90.4%	0.0%			0.0%	0.0%	0.0%			0.0%	81.6%	18.4%			56.0%	3.8%	40.2%				
Total %	1.3%	12.3%	0.0%		13.6%	0.0%	0.0%	0.0%		0.0%	0.0%	33.7%	7.6%		41.4%	25.2%	1.7%	18.1%		45.0%	100.0%	

AM PEAK HOUR	Prairie City Road Southbound					EB Hwy 50 Ramps Westbound					Prairie City Road Northbound					EB Hwy 50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 09:30 to 10:30																					
Peak Hour For Entire Intersection Begins at 09:30																					
09:30	4	70	0		74	0	0	0		0	0	39	16		55	65	1	117		183	312
09:45	0	54	0		54	0	0	0		0	0	48	31		79	91	4	122		217	350
10:00	10	39	0		49	0	0	0		0	0	26	11		37	79	25	71		175	261
10:15	4	44	0		48	0	0	0		0	0	30	7		37	25	5	55		85	170
Total Volume	18	207	0		225	0	0	0		0	0	143	65		208	260	35	365		660	1093
% App Total	8.0%	92.0%	0.0%			0.0%	0.0%	0.0%			0.0%	68.8%	31.3%			39.4%	5.3%	55.3%			
PHF	.450	.739	.000		.760	.000	.000	.000		.000	.000	.745	.524		.658	.714	.350	.748		.760	.781

PM PEAK HOUR	Prairie City Road Southbound					EB Hwy 50 Ramps Westbound					Prairie City Road Northbound					EB Hwy 50 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	3	22	0		25	0	0	0		0	0	200	41		241	89	2	8		99	365
17:00	2	15	0		17	0	0	0		0	0	190	52		242	82	0	7		89	348
17:15	3	18	0		21	0	0	0		0	0	207	40		247	70	1	8		79	347
17:30	1	16	0		17	0	0	0		0	0	192	29		221	74	2	1		77	315
Total Volume	9	71	0		80	0	0	0		0	0	789	162		951	315	5	24		344	1375
% App Total	11.3%	88.8%	0.0%			0.0%	0.0%	0.0%			0.0%	83.0%	17.0%			91.6%	1.5%	7.0%			
PHF	750	.807	.000		.800	.000	.000	.000		.000	.000	.953	.779		.963	.885	.625	.750		.869	.942

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

City of Sacramento County
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

File Name : 13-7314-003 Prairie City Road-White Rock Road.ppd
Date : 5/18/2013

Unshifted Count = All Vehicles

	Prairie City Road Southbound					White Rock Road Westbound					Northbound					White Rock Road Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
09:30	24	0	94	0	118	0	36	15	0	51	0	0	0	0	0	23	33	0	0	56	225	0
09:45	19	0	69	0	88	0	46	12	0	58	0	0	0	0	0	34	27	0	0	61	207	0
10:00	30	0	69	0	99	0	40	11	0	51	0	0	0	0	0	16	26	0	0	42	192	0
10:15	62	0	75	0	137	0	51	6	0	57	0	0	0	0	0	18	35	0	0	53	247	0
Total	135	0	307	0	442	0	173	44	0	217	0	0	0	0	0	91	121	0	0	212	871	0
10:30	32	0	67	0	99	0	71	12	0	83	0	0	0	0	0	19	31	0	0	50	232	0
10:45	15	0	121	0	136	0	33	9	0	42	0	0	0	0	0	18	30	0	0	48	226	0
11:00	12	0	126	0	138	0	62	12	0	74	0	0	0	0	0	16	28	0	0	44	256	0
11:15	122	0	23	0	145	0	16	41	0	57	0	0	0	0	0	13	38	0	0	51	253	0
Total	181	0	337	0	518	0	182	74	0	256	0	0	0	0	0	66	127	0	0	193	967	0
16:00	17	0	36	0	53	0	35	22	0	57	0	0	0	0	0	90	42	0	0	132	242	0
16:15	6	0	26	0	32	0	18	13	0	31	0	0	0	0	0	78	35	0	0	113	176	0
16:30	13	0	20	0	33	0	16	17	0	33	0	0	0	0	0	95	33	0	0	128	194	0
16:45	1	0	30	0	31	0	1	41	0	42	0	0	0	0	0	220	0	0	0	220	293	0
Total	37	0	112	0	149	0	70	93	0	163	0	0	0	0	0	483	110	0	0	593	905	0
17:00	0	0	36	0	36	0	0	26	0	26	0	0	0	0	0	227	0	0	0	227	289	0
17:15	0	0	11	0	11	0	0	24	0	24	0	0	0	0	0	198	0	0	0	198	233	0
17:30	0	0	18	0	18	0	1	29	0	30	0	0	0	0	0	178	0	0	0	178	226	0
17:45	0	0	13	0	13	0	3	26	0	29	0	0	0	0	0	165	2	0	0	167	209	0
Total	0	0	78	0	78	0	4	105	0	109	0	0	0	0	0	768	2	0	0	770	957	0
Grand Total	353	0	834	0	1187	0	429	316	0	745	0	0	0	0	0	1408	360	0	0	1768	3700	0
Apprch %	29.7%	0.0%	70.3%			0.0%	57.6%	42.4%			0.0%	0.0%	0.0%			79.6%	20.4%	0.0%				
Total %	9.5%	0.0%	22.5%		32.1%	0.0%	11.6%	8.5%		20.1%	0.0%	0.0%	0.0%		0.0%	38.1%	9.7%	0.0%		47.8%	100.0%	

AM PEAK HOUR	Prairie City Road Southbound				White Rock Road Westbound				Northbound				White Rock Road Eastbound				
START TIME	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	Total
Peak Hour Analysis From 10:30 to 11:30																	
Peak Hour For Entire Intersection Begins at 10:30																	
10:30	32	0	67	99	0	71	12	83	0	0	0	0	19	31	0	50	232
10:45	15	0	121	136	0	33	9	42	0	0	0	0	18	30	0	48	226
11:00	12	0	126	138	0	62	12	74	0	0	0	0	16	28	0	44	256
11:15	122	0	23	145	0	16	41	57	0	0	0	0	13	38	0	51	253
Total Volume	181	0	337	518	0	182	74	256	0	0	0	0	66	127	0	193	967
% App Total	34.9%	0.0%	65.1%		0.0%	71.1%	28.9%		0.0%	0.0%	0.0%		34.2%	65.8%	0.0%		
PHF	.371	.000	.669	.893	.000	.641	.451	.771	.000	.000	.000	.000	.868	.836	.000	.946	.944

PM PEAK HOUR	Prairie City Road Southbound				White Rock Road Westbound				Northbound				White Rock Road Eastbound				
START TIME	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																	
Peak Hour For Entire Intersection Begins at 16:45																	
16:45	1	0	30	31	0	1	41	42	0	0	0	0	220	0	0	220	293
17:00	0	0	36	36	0	0	26	26	0	0	0	0	227	0	0	227	289
17:15	0	0	11	11	0	0	24	24	0	0	0	0	198	0	0	198	233
17:30	0	0	18	18	0	1	29	30	0	0	0	0	178	0	0	178	226
Total Volume	1	0	95	96	0	2	120	122	0	0	0	0	823	0	0	823	1041
% App Total	1.0%	0.0%	99.0%		0.0%	1.6%	98.4%		0.0%	0.0%	0.0%		100.0%	0.0%	0.0%		
PHF	.250	.000	.660	.667	.000	.500	.732	.726	.000	.000	.000	.000	.906	.000	.000	.906	.888

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

City of Sacramento County
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

File Name : 13-7314-004 Secondary Park Gate-White Rock Road.ppd
Date : 5/18/2013

Unshifted Count = All Vehicles

	Southbound					White Rock Road Westbound					Secondary Park Gate Northbound					White Rock Road Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
09:30	0	0	0	0	0	43	87	0	0	130	1	0	8	0	9	0	51	15	0	66	205	0
09:45	0	0	0	0	0	40	75	0	0	115	1	0	3	0	4	0	56	20	0	76	195	0
10:00	0	0	0	0	0	56	49	0	0	105	1	0	3	0	4	0	45	15	0	60	169	0
10:15	0	0	0	0	0	48	90	0	0	138	1	0	4	0	5	0	45	14	0	59	202	0
Total	0	0	0	0	0	187	301	0	0	488	4	0	18	0	22	0	197	64	0	261	771	0
10:30	0	0	0	0	0	49	80	0	0	129	0	0	5	0	5	0	46	21	0	67	201	0
10:45	0	0	0	0	0	94	61	0	0	155	2	0	5	0	7	0	46	18	0	64	226	0
11:00	0	0	0	0	0	72	118	0	0	190	0	0	11	0	11	0	34	16	0	50	251	0
11:15	0	0	0	0	0	28	19	0	0	47	3	0	7	0	10	0	46	29	0	75	132	0
Total	0	0	0	0	0	243	278	0	0	521	5	0	28	0	33	0	172	84	0	256	810	0
16:00	0	0	0	0	0	1	66	0	0	67	0	0	62	0	62	0	73	7	0	80	209	0
16:15	0	0	0	0	0	1	45	0	0	46	0	0	48	0	48	0	76	6	0	82	176	0
16:30	0	0	0	0	0	0	33	0	0	33	0	0	63	0	63	0	51	4	0	55	151	0
16:45	0	0	0	0	0	0	33	0	0	33	0	0	130	0	130	0	92	0	0	92	255	0
Total	0	0	0	0	0	2	177	0	0	179	0	0	303	0	303	0	292	17	0	309	791	0
17:00	0	0	0	0	0	0	41	0	0	41	0	0	244	0	244	0	2	0	0	2	287	0
17:15	0	0	0	0	0	0	11	0	0	11	0	0	185	0	185	0	1	1	0	2	198	0
17:30	0	0	0	0	0	6	15	0	0	21	0	0	178	0	178	0	2	0	0	2	201	0
17:45	0	0	0	0	0	5	12	0	0	17	0	0	173	0	173	0	1	1	0	2	192	0
Total	0	0	0	0	0	11	79	0	0	90	0	0	780	0	780	0	6	2	0	8	878	0
Grand Total	0	0	0	0	0	443	835	0	0	1278	9	0	1129	0	1138	0	667	167	0	834	3250	0
Apprch %	0.0%	0.0%	0.0%			34.7%	65.3%	0.0%			0.8%	0.0%	99.2%			0.0%	80.0%	20.0%				
Total %	0.0%	0.0%	0.0%		0.0%	13.6%	25.7%	0.0%		39.3%	0.3%	0.0%	34.7%		35.0%	0.0%	20.5%	5.1%		25.7%	100.0%	

AM PEAK HOUR	Southbound					White Rock Road Westbound					Secondary Park Gate Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 10:15 to 11:15																					
Peak Hour For Entire Intersection Begins at 10:15																					
10:15	0	0	0		0	48	90	0		138	1	0	4		5	0	45	14		59	202
10:30	0	0	0		0	49	80	0		129	0	0	5		5	0	46	21		67	201
10:45	0	0	0		0	94	61	0		155	2	0	5		7	0	46	18		64	226
11:00	0	0	0		0	72	118	0		190	0	0	11		11	0	34	16		50	251
Total Volume	0	0	0		0	263	349	0		612	3	0	25		28	0	171	69		240	880
% App Total	0.0%	0.0%	0.0%			43.0%	57.0%	0.0%			10.7%	0.0%	89.3%			0.0%	71.3%	28.8%			
PHF	.000	.000	.000		.000	.699	.739	.000		.805	.375	.000	.568		.636	.000	.929	.821		.896	.876

PM PEAK HOUR	Southbound					White Rock Road Westbound					Secondary Park Gate Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0		0	0	33	0		33	0	0	130		130	0	92	0		92	255
17:00	0	0	0		0	0	41	0		41	0	0	244		244	0	2	0		2	287
17:15	0	0	0		0	0	11	0		11	0	0	185		185	0	1	1		2	198
17:30	0	0	0		0	6	15	0		21	0	0	178		178	0	2	0		2	201
Total Volume	0	0	0		0	6	100	0		106	0	0	737		737	0	97	1		98	941
% App Total	0.0%	0.0%	0.0%			5.7%	94.3%	0.0%			0.0%	0.0%	100.0%			0.0%	99.0%	1.0%			
PHF	.000	.000	.000		.000	.250	.610	.000		.646	.000	.000	.755		.755	.000	.264	.250		.266	.820

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

City of Sacramento County
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

File Name : 13-7314-006 Grant Line Road-White Rock Road.ppd
Date : 5/18/2013

Unshifted Count = All Vehicles

	Grant Line Road Southbound					Westbound					Grant Line Road Northbound					White Rock Road Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
09:30	0	25	3	0	28	0	0	0	0	0	1	97	0	0	98	44	0	1	0	45	171	0
09:45	0	16	4	0	20	0	0	0	0	0	3	98	0	0	101	55	0	3	0	58	179	0
10:00	0	12	0	0	12	0	0	0	0	0	0	66	0	0	66	59	0	3	0	62	140	0
10:15	0	27	4	0	31	0	0	0	0	0	2	62	0	0	64	54	0	2	0	56	151	0
Total	0	80	11	0	91	0	0	0	0	0	6	323	0	0	329	212	0	9	0	221	641	0
10:30	0	24	1	0	25	0	0	0	0	0	1	92	0	0	93	43	0	0	0	43	161	0
10:45	0	20	5	0	25	0	0	0	0	0	2	66	0	0	68	42	0	2	0	44	137	0
11:00	0	10	2	0	12	0	0	0	0	0	1	67	0	0	68	46	0	4	0	50	130	0
11:15	0	14	2	0	16	0	0	0	0	0	1	77	0	0	78	60	0	1	0	61	155	0
Total	0	68	10	0	78	0	0	0	0	0	5	302	0	0	307	191	0	7	0	198	583	0
16:00	0	63	21	0	84	0	0	0	0	0	3	54	0	0	57	5	0	1	0	6	147	0
16:15	0	40	12	0	52	0	0	0	0	0	1	38	0	0	39	17	0	2	0	19	110	0
16:30	0	41	8	0	49	0	0	0	0	0	2	43	0	0	45	3	0	4	0	7	101	0
16:45	0	50	32	0	82	0	0	0	0	0	1	40	0	0	41	4	0	3	0	7	130	0
Total	0	194	73	0	267	0	0	0	0	0	7	175	0	0	182	29	0	10	0	39	488	0
17:00	0	63	131	0	194	0	0	0	0	0	26	6	0	0	32	1	0	6	0	7	233	0
17:15	0	66	161	0	227	0	0	0	0	0	43	0	0	0	43	0	0	4	0	4	274	0
17:30	0	65	133	0	198	0	0	0	0	0	41	0	0	0	41	1	0	1	0	2	241	0
17:45	0	56	144	0	200	0	0	0	0	0	39	0	0	0	39	2	0	0	0	2	241	0
Total	0	250	569	0	819	0	0	0	0	0	149	6	0	0	155	4	0	11	0	15	969	0
Grand Total	0	592	663	0	1255	0	0	0	0	0	167	806	0	0	973	436	0	37	0	473	2701	0
Apprch %	0.0%	47.2%	52.8%			0.0%	0.0%	0.0%			17.2%	82.8%	0.0%			92.2%	0.0%	7.8%				
Total %	0.0%	21.9%	24.5%		46.5%	0.0%	0.0%	0.0%		0.0%	6.2%	29.8%	0.0%		36.0%	16.1%	0.0%	1.4%		17.5%	100.0%	

AM PEAK HOUR	Grant Line Road Southbound					Westbound					Grant Line Road Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 09:30 to 10:30																					
Peak Hour For Entire Intersection Begins at 09:30																					
09:30	0	25	3		28	0	0	0		0	1	97	0		98	44	0	1		45	171
09:45	0	16	4		20	0	0	0		0	3	98	0		101	55	0	3		58	179
10:00	0	12	0		12	0	0	0		0	0	66	0		66	59	0	3		62	140
10:15	0	27	4		31	0	0	0		0	2	62	0		64	54	0	2		56	151
Total Volume	0	80	11		91	0	0	0		0	6	323	0		329	212	0	9		221	641
% App Total	0.0%	87.9%	12.1%			0.0%	0.0%	0.0%			1.8%	98.2%	0.0%			95.9%	0.0%	4.1%			
PHF	.000	.741	.688		.734	.000	.000	.000		.000	.500	.824	.000		.814	.898	.000	.750		.891	.895

PM PEAK HOUR	Grant Line Road Southbound					Westbound					Grant Line Road Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	50	32		82	0	0	0		0	1	40	0		41	4	0	3		7	130
17:00	0	63	131		194	0	0	0		0	26	6	0		32	1	0	6		7	233
17:15	0	66	161		227	0	0	0		0	43	0	0		43	0	0	4		4	274
17:30	0	65	133		198	0	0	0		0	41	0	0		41	1	0	1		2	241
Total Volume	0	244	457		701	0	0	0		0	111	46	0		157	6	0	14		20	878
% App Total	0.0%	34.8%	65.2%			0.0%	0.0%	0.0%			70.7%	29.3%	0.0%			30.0%	0.0%	70.0%			
PHF	.000	.924	.710		.772	.000	.000	.000		.000	.645	.288	.000		.913	.375	.000	.583		.714	.801