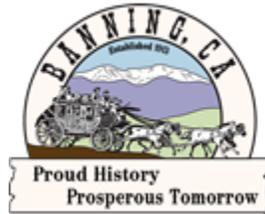


Initial Study Checklist/ Mitigated Negative Declaration

City of Banning:

*Tentative Tract Map 36939
for*

Property Located Between Sunset Avenue and Sunrise Avenue north of Wilson Street



City Banning
99 East Ramsey Street
Banning, CA 92220

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**Public Review
December 17, 2015**

TABLE OF CONTENTS

1.0 INTRODUCTION	5
1.1 Purpose of the Initial Study Checklist.....	5
1.2 Purpose of a Mitigated Negative Declaration	5
1.3 Initial Study Checklist/Mitigated Negative Declaration Document.....	5
1.4 Public Review and Processing of the Document.....	5
1.5 Initial Study Checklist/Mitigated Negative Declaration Findings and Conclusions.....	6
2.0 PROJECT BACKGROUND	8
2.1 Project Location.....	8
2.2 Existing Site Conditions/Environmental Setting	8
2.3 Existing General Plan/Zoning Designations	9
2.4 Project Description.....	10
3.0 INITIAL STUDY CHECKLIST	15
3.1 AESTHETICS.....	20
3.2 AGRICULTURE AND FORESTRY RESOURCES	25
3.3 AIR QUALITY.....	29
3.4 BIOLOGICAL RESOURCES.....	41
3.5 CULTURAL RESOURCES.....	47
3.6 GEOLOGY AND SOILS	52
3.7 GREENHOUSE GAS EMISSIONS.....	59
3.8 HAZARDS AND HAZARDOUS MATERIALS	63
3.9 HYDROLOGY AND WATER QUALITY.....	68
3.10 LAND USE AND PLANNING	78
3.11 MINERAL RESOURCES	81
3.12 NOISE.....	83
3.13 POPULATION AND HOUSING	91
3.14 PUBLIC SERVICES.....	93
3.15 RECREATION.....	97
3.16 TRANSPORTATION/TRAFFIC.....	99
3.17 UTILITIES AND SERVICE SYSTEMS	104
3.18 MANDATORY FINDINGS OF SIGNIFICANCE	112
4.0 REFERENCES	116
5.0 REPORT PREPARATION PERSONNEL	117

LIST OF EXHIBITS

Exhibit 1: Project Location Map/Aerial Photo..... 13
Exhibit 2: Illustrative Lot Layout 14

LIST OF TABLES

Table 1: Existing Land Uses..... 9
Table 2: Existing General Plan and Zoning Designations..... 10
Table 3: Attainment Status of Criteria Pollutants in the South Coast Air Basin31
Table 4: SCAQMD Air Quality Regional Significance Thresholds33
Table 5: SCAQMD Emissions Thresholds34
Table 6: Short-Term Regional Construction Emissions.....35
Table 7: Construction Localized Impacts Analysis.....35
Table 8: Opening Year Regional Operational Emissions.....36
Table 9: Long-Term Operational Localized Impact Analysis.....37
Table 10: Long-Term Operational Localized Impacts.....60
Table 11: Long Term Operational Greenhouse Gas Emissions61
Table 12: Typical Construction Equipment Noise Levels.....85
Table 13: Trip Generation Rates100

APPLICATIONS

A. Tentative Tract Map No. 15-4501 (TTM 36939)

TTM 36939 proposes to subdivide a vacant 34.6 acre lot for purposes of creating 98 numbered lots for single-family Residential development and three (3) lettered lots for hydrology purposes, including roadways and supporting infrastructure.

B. Zone Change No. 15-3501

Rezone to amend the zoning map to eliminate the RL-10,000 Overlay affecting the western portion of the site to Low Density Residential (LDR, 0 to 5 units per acre).

1.0. INTRODUCTION

1.1 Purpose of an Initial Study Checklist

The California Environmental Quality Act (CEQA) requires that before a public agency makes a decision to approve a project that could have one or more adverse effects on the physical environment, the agency must inform itself about the project's potential environmental impacts, give the public an opportunity to comment on the environmental issues, and take feasible measures to avoid or reduce potential harm to the physical environment.

The purpose of an Initial Study Checklist is to provide a preliminary analysis of a proposed action to determine whether a Negative Declaration, Mitigated Negative Declaration, or an Environmental Impact Report should be prepared for a project. An Initial Study Checklist also enables an applicant or the City of Banning to modify a project, mitigating adverse impacts in lieu of preparing an Environmental Impact Report, thereby potentially enabling the project to qualify for a Negative Declaration or a Mitigated Negative Declaration.

The Initial Checklist Study provides a factual basis for a Negative Declaration, Mitigated Negative Declaration, or serves to focus an Environmental Impact Report on the significant effects of a project.

1.2 Purpose of a Negative Declaration

A Mitigated Negative Declaration is a written statement by the City of Banning that the Initial Study Checklist identified potentially significant environmental effects of the project but the project is revised or mitigated measures are required to eliminate or mitigate impacts to less than significant levels.

1.3 Initial Study Checklist/ Negative Declaration Document

This document in its entirety is an Initial Study Checklist/Mitigated Negative Declaration prepared in accordance with the California Environmental Quality Act (CEQA), including all criteria, standards, and procedures of CEQA (California Public Resource Code Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.).

1.4 Public Review and Processing of the Initial Study Checklist/ Negative Declaration

This Initial Study Checklist/Mitigated Negative Declaration and a *Notice of Intent* to adopt the Mitigated Negative Declaration was distributed to the following entities for a 20-day public review period:

- 1) Organizations and individuals who have previously requested such notice in writing to the City of Banning;
- 2) Responsible and trustee agencies (public agencies that have a level of discretionary approval over some component of the proposed Project); and
- 3) The Riverside County Clerk.

The Notice of Intent also will be noticed to the general public in the *Record Gazette*, which is a primary newspaper of circulation in the areas affected by the Project.

The *Notice of Intent* identifies the location(s) where the Initial Study Checklist/Mitigated Negative Declaration and its associated technical reports are available for public review. During the 20-day public review period, comments on the adequacy of the Initial Study Checklist/Mitigated Negative Declaration document may be submitted to the City of Banning Community Development Department, Planning Division.

Following the 20-day public review period, the City of Banning Planning Division will review any comment letters received during the review period to determine whether any substantive comments were provided that may warrant revisions or recirculation to the Initial Study Checklist/Mitigated Negative Declaration document. If recirculation is not required (as defined by CEQA Guidelines §15073.5(b)), written and/or oral responses will be provided to the City of Banning Planning Commission for review as part of their deliberations concerning the Project.

For this Project, the Banning Planning Commission's role is advisory and will recommend that the Banning City Council approve, conditionally approve, or deny the Project. Accordingly, a public hearing will be held before the Banning City Council to consider the proposed Project, any comments received and make a determination on the adequacy of this Initial Study Checklist/Mitigated Negative Declaration.

At the conclusion of the public hearing process, the City Council will take action to approve, conditionally approve, or deny the proposed Project. If approved, the City Council will adopt findings relative to the Project's environmental effects as disclosed in the Initial Study Checklist/Mitigated Negative Declaration and a *Notice of Determination* will be filed with the Riverside County Clerk.

1.5 Initial Study Checklist/Mitigated Negative Declaration Findings and Conclusions

Section 3.0 of this document contains the Environmental Checklist/Initial Study that was prepared for the proposed Project pursuant to CEQA and City of Banning requirements.

The Initial Study Checklist determined that implementation of the proposed Project would result in **no impacts** to the environment under the following issue areas:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Geology and Soils
- Greenhouse Gas Emission
- Hydrology and Water Quality
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems, and,

- Land Use Planning

The Initial Study Checklist determined that the proposed Project would result in **potentially significant effects** to the following issue areas, but the Project Applicant will incorporate mitigation measures that would avoid or mitigate effects to a point where clearly no significant environmental impacts on the environment would occur:

- Biological Resources
- Cultural Resources
- Geological Resources
- Hazards and Hazardous Materials

The Initial Study Checklist determined that, with the incorporation of mitigation measures, there is no substantial evidence, in light of the whole record before the Lead Agency (City of Banning), that the Project as revised may have a significant effect on the environment. Therefore, based on the findings of the Initial Study Checklist, the City of Banning determined that a Mitigated Negative Declaration is the appropriate CEQA determination for the Project pursuant to CEQA Guidelines § 15070(b).

2.0 PROJECT BACKGROUND

2.1 Project Location

The City of Banning covers approximately 23.2 square miles within the County of Riverside. The City is bordered by the City of Beaumont to the west, Morongo Band of Mission Indians to the east and County of Riverside to the east and south. Specifically, the property is located on vacant land northeast of the intersection of Wilson Avenue and Sunset Avenue, as depicted on the U.S. Geological Survey(USGS) 7.5 MINUTE Beaumont, California quadrangle in projected Section 5, Township 3 South, Range 1 East. Refer to Exhibit 1, *Location Map/Aerial Photo*).

The Project site includes the following Assessor Parcel Numbers:

- 535-430-001 through 535-430-021
- 535-431-001 through 535-431-015
- 535-432-001 through 535-432-017
- 535-070-004
- 535-070-006

2.2 Existing Site Conditions/Environmental Setting

CEQA Guidelines §15125 establishes requirements for defining the environmental setting to which the environmental effects of a proposed project must be compared. The environmental setting is defined as “the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Intent/Notice of Availability is published, or at the time the environmental analysis is commenced...” (CEQA Guidelines §15125[a]).

In the case of the proposed Project, the Initial Study Checklist determined that a Mitigated Negative Declaration is the appropriate form of CEQA compliance document, which does not require a Notice of Preparation. Thus, the environmental setting for the proposed Project is the approximate date that the Project’s Notice of Intent/Notice of Availability is published. The Initial Study Checklist commenced the twenty (20) day circulation on December 11, 2015.

The Project site consists of approximately 34.6 gross acres. The site is undeveloped, but the eastern half of the Project site had previously been graded for home sites in 2009. The site is bordered on the west and north by undeveloped open space, and to the east and south by single-family homes and residences. The site’s topography is relatively flat with slight, hilly undulations and slopes gently to the south. The general elevation of the site ranges from approximately 2,550 to 2,650 feet above mean sea level. Primary access to the site is provided from Sunset Avenue, Sunrise Avenue and Wilson Street. Surrounding land uses are shown on Table 1.

The Gas Company provides natural gas services and facilities to the City of Banning and will be available to the Project site. Natural gas supply to the City originates from Texas, transported by two major east-west trending gas lines. These high pressure gas lines of varying sizes up to 36 inches in diameter, traverse through the eastern desert areas to the western end of Riverside County. In addition to the major east-west trending high-pressure transmission gas lines, other natural gas high pressure lines are located underground in Wilson and Lincoln Streets. A pipeline designed to carry liquid fuels runs east-west through the City. Though not currently in use, this pipeline has been used to transport crude oil, diesel fuel, and gasoline.

Table 1. Existing Land Uses

Location	Existing Use
Site	Vacant
North	Vacant
South	Single-Family Residential
East	Single-Family Residential
West	Vacant

Source: LSA Field Inspection, May 2015

2.3 Existing General Plan Land Use and Zoning Designations

The City of Banning is an incorporated general law city of Riverside County, California. Prior to its incorporation, the area was governed by Riverside County. The City, incorporated in 1913, has a rich and colorful history. Banning served as a stagecoach and railroad stop between the Arizona territories and Los Angeles. The City is named in honor of General Phineas T. Banning, who freighted over the Mormon trail from Salt Lake to San Bernardino and Los Angeles.

Development activities that occur in the City of Banning are regulated by the City of Banning General Plan, adopted January 31, 2006, and the Zoning Code, referenced as Title 17 of the City of Banning Municipal Code. The General Plan is divided into a number of Area Plans that provide additional guidance for development and more specific land use designations under each category. Each property has a land use designation and a more descriptive Area Plan designation. The designation for the Project site is Low Density Residential and is within the Zoning Overlay RL-10,000 (Residential Low-10,000 square foot lots). The Applicant proposes to rezone the site to LDR (0 to 5 units per acre) by removing the RL-10,000 overlay.

Policy Areas

Policy Areas apply to portions of the General Plan that contain special or unique characteristics that merit detailed attention and focused planning policies. The Project site is not located within Policy Area.

A summary of the existing General Plan land use and Zoning Designations for the Project site and surrounding properties is provided in Table 2.

Table 2. Existing General Plan and Zoning Designations

Location	General Plan Designation	Zoning Designation
Site	Low-Density Residential (0-5 DU/Acre)	RL-10,000
North	Open Space/Specific Plan Area	Open Space (Resources)
South	Ranch/Agriculture (10 Acre Min.)/LDR (0-5 DU/Acre)	RL-10,000
East	Low-Density Residential (0-5 DU/Acre)	Low Density Residential (0-5 DU/Acre)
West	Low Density Residential (0-5 DU/Acre)	RL-10,000
<i>Source: City of Banning General Plan Land Use Map, City of Banning-Existing Zoning Map</i>		

2.4 Project Description

The Project Applicant, Peter J. Pitassi, submitted the following applications to the City of Banning which comprise the proposed Project: Tentative Tract Map (TTM 36939). The City of Banning refers to the application as Tentative Tract Map No. 15-4501 (TTM 36939).

The Project’s application materials are on file with the City of Banning Planning Department 99 East Ramsey Street, Banning, CA 92220) and are hereby incorporated by reference.

A. Tentative Tract Map (TTM 36939)

TTM 36939 proposes to subdivide the 34.6 acre site into 98 single-family residential lots with a minimum lot size of 7,000 square feet, three (3) lettered lots for open spaces purposes, roadways and other supporting infrastructure.

The above land uses and other on-site improvements are further described as follows:

Single-Family Residential

Residential lot sizes range from 7,000 square feet to 19,239 square feet. However, the majority of the lot sizes are within the 7,000 to 8,200 square foot range. The Project proposes a density of 2.8 dwelling units per acre.

Water Quality Basin

Two lots, ‘B’ (29,028 sq.ft.) and ‘C’ (23,195 sq.ft.) will function as water quality basins. The basins will serve to retain developed condition runoff and mitigate developed condition flows as required by City Ordinance. City of Banning Ordinance #1415&6 requires that “all development will make provisions to store runoff from rainfall events up to and including the 100 years, three-hour duration event onsite via storage or infiltration basins for new development and redevelopment.

The basins will both be located adjacent to Wilson Street. The basin is for water quality purposes only and does not provide for dual use such as recreation. The basin shall be designed in accordance with the City of Banning Engineering requirements.

On-Site Street Improvements

Access to the Project site is from Sunset Avenue and Sunrise Avenue and Wilson Street. The corridors are existing improved two (2) lane roadway within the Public right-of-way. Curb, gutter, and sidewalk have been partially installed. Wilson Street will parallel lots B and C. All street improvements along Wilson Street, Sunset and Sunrise Avenue will be subject to the City of Banning Engineering and Public Works requirements.

Internal neighborhood streets servicing the tract with curb and gutter within 60 foot two lane travel lanes include Eclipse Drive, and Dawn Lane. Eclipse and Dawn Streets will connect to Sunset and Sunrise Avenues.

On-Site Utility and Drainage Improvements

Water, sewer and electrical service will be provided by the City of Banning Public Works Department and Electrical Division. Sewer and water systems shall be designed in accordance with the City of Banning Engineering and Public Works requirements.

Water and sewer service to the Project site will be provided by the City of Banning. The Project is required to connect to the existing 8-inch water mains on Sunrise and extend an 8-inch diameter water main in Dawn Lane, within the tract boundary to the existing 18-inch diameter water main in Sunset Avenue.

B. Zone Change

The existing site will be rezoned from Low Density Residential with RL-10,000 Overlay (West Half) to Low Density Residential (0-5 units per acre).

C. Construction Schedule

Houses will be constructed based on market demand and absorption. Construction is expected to commence sometime in 2015 and would occur in several general phases. The Project Applicant expects the following time durations for the construction process, which would be somewhat sequential but overlap in some cases:

- Site Preparation 20 Days
- Grading 40 - days
- 1st Phase of Home Construction 60- days
- Architectural Coating 38 - days
- Paving 55 - days

Earthwork and Grading

The earthwork and grading details are based on proposed Tentative Tract Map 36939. The Project proposes 30,000 cubic yards (c.y.) of cut and 39,000 cubic yards of fill. The site is sloping southeasterly at an average rate of 5%, and so to grade building pads and slopes to approximately 5% slope and to match adjacent streets for access, the import of approximately 9,000 cubic yards is anticipated. The eastern half of the site was previously graded to pad and street configuration and will be re-compacted and re-certified.

D. Operational Characteristics

The proposed Project would be operated as a residential community. Typical operational characteristics include residents and visitors traveling to and from the site, leisure and maintenance activities occurring on individual residential lots and in the on-site recreational facilities and general maintenance of common areas. Low levels of noise and a moderate level of artificial exterior lighting typical of a residential community is expected.

Future Population

The Project would be developed with 98 single-family detached residential homes. Pursuant to City of Banning's General Plan, the median household size is currently 2.9 persons per dwelling unit. Using population generation estimates, the proposed Project could increase the City of Banning's population by up to 284 new residents if all the new residents currently reside outside the City limits. The City of Banning's 2003 population estimates (city limits only) as determined by the California Department of Finance is 25,600 residents. The City's population would increase by one (1) percent or 25,884 residents. The Project is consistent with the Southern California Association of Governments (SCAG) population growth estimates in that the City's population is projected to reach 34,658 in 2010 and 42,027 in 2020. According to the City's Housing Element Regional Housing Needs Assessment (RHNA), the City of Banning has a total housing construction need of 1,780 units and an annual need of 237 units. The Project is consistent with the RHNA housing construction forecast efforts to meet the City's housing needs.

The *General Plan* land use designation currently assigned to the Project site is Low Density Residential (East Half) with a RL-10,000 residential overlay (West Half). The Project as proposed has a density of 2.8 dwelling units per acre.

If the Project site were built out in accordance with its existing *General Plan* land use designation, a maximum of 173 residential dwelling units could be constructed on the property. (Low Density Residential x 5 units per acre x 34.6 acres = 173 units). With the existing RL-10,000, minimum lot size overlay, a total of 150 units could be constructed. The Project proposes 98 residential dwelling units which is below the maximum permitted under the *General Plan* and current Zoning District.

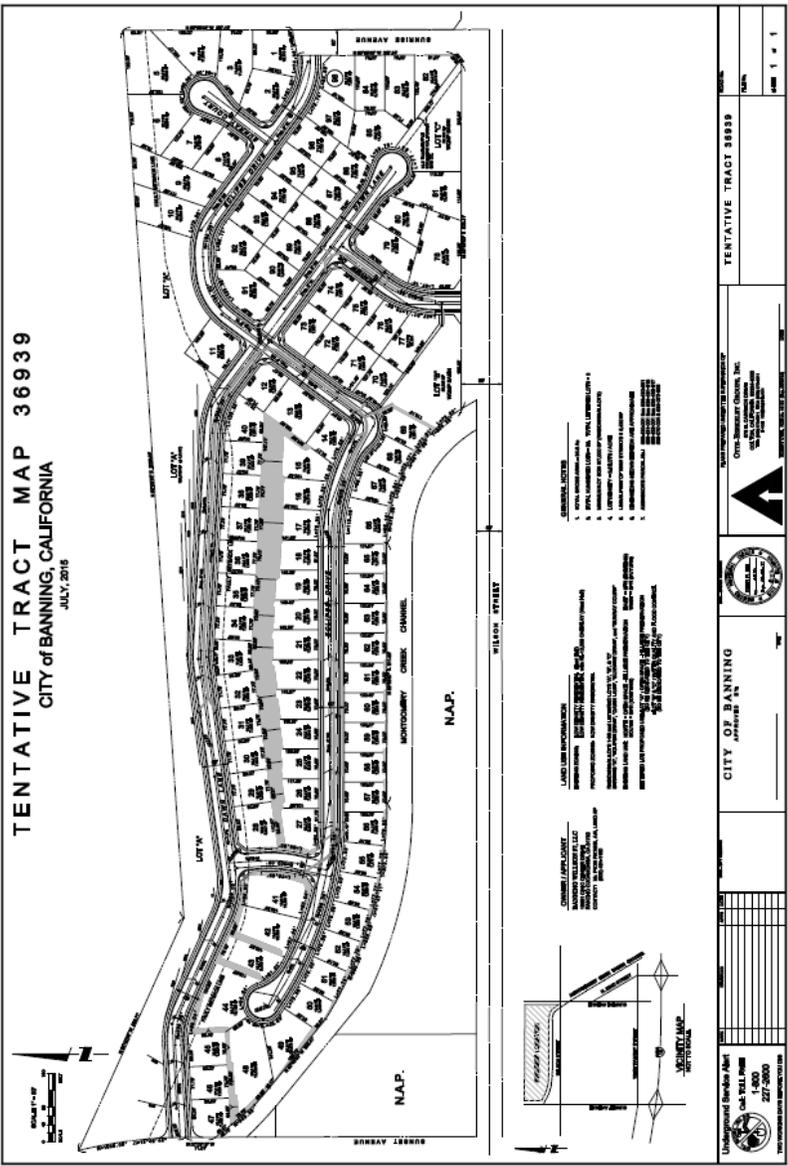


**Charlie Kien
MA 14112**

**Location Map/Aerial Photo
APN 182-361-009**

Exhibit 1

TENTATIVE TRACT MAP 36939
 CITY OF BANNING, CALIFORNIA
 JULY, 2016



Peter Pitassi
Project No. 15-4501

Illustrative Lot Layout
TTM 36939

Exhibit 2

3.0 INITIAL STUDY/ENVIRONMENTAL CHECKLIST

Evaluation Format

This Initial Study Checklist has been prepared in compliance with the California Environmental Quality Act (CEQA) Guidelines. The Project is evaluated based on its potential effect on seventeen (17) environmental factors categorized as follows, as well as Mandatory Findings of Significance:

- | | |
|-------------------------------------|----------------------------------------|
| 1. Aesthetics | 10. Land Use & Planning |
| 2. Agriculture & Forestry Resources | 11. Mineral Resources |
| 3. Air Quality | 12. Noise |
| 4. Biological Resources | 13. Population & Housing |
| 5. Cultural Resources | 14. Public Services |
| 6. Geology & Soils | 15. Recreation |
| 7. Greenhouse Gas Emissions | 16. Transportation & Traffic |
| 8. Hazards & Hazardous Materials | 17. Utilities & Service Systems |
| 9. Hydrology & Water Quality | 18. Mandatory Findings of Significance |

Each factor is analyzed by responding to a series of questions pertaining to the impact of the Project on the particular factor in the form of a checklist. This Initial Study Checklist provides a manner to analyze the impacts of the Project on each factor in order to determine the severity of the impact and determine if mitigation measures can be implemented to reduce the impact to less than significant without having to prepare an Environmental Impact Report.

CEQA also requires Lead Agencies to evaluate potential environmental effects based to the fullest extent possible on scientific and factual data (CEQA Guidelines §15064[b]). A determination of whether or not a particular environmental impact will be significant must be based on substantial evidence, which includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines §15064f[5]).

The effects of the Project are then placed in the following four categories, which are each followed by a summary to substantiate why the Project does not impact the particular factor with or without mitigation. If “Potentially Significant Impacts” that cannot be mitigated are determined, then the Project does not qualify for a Mitigated Negative Declaration and an Environmental Impact Report must be prepared:

<i>Potentially Significant Impact</i>	<i>Less Than Significant Impact with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Potentially significant impact(s) have been identified or anticipated that cannot be mitigated to a level of insignificance. An Environmental Impact Report must therefore be prepared.	Potentially significant impact(s) have been identified or anticipated, but mitigation is possible to reduce impact(s) to a less than significant category. Mitigation measures must then be identified.	No “significant” impact(s) identified or anticipated. Therefore, no mitigation is necessary.	No impact(s) identified or anticipated. Therefore, no mitigation is necessary.

Throughout the impact analysis in this Initial Study Checklist, reference is made to the following:

- **Plans, Policies, Programs (PPP)** – These include existing regulatory requirements such as plans, policies, or programs applied to the Project based on the basis of federal, state, or local law currently in place which effectively reduce environmental impacts.
- **Project Design Features (PDF)** – These measures include features proposed by the Project that are already incorporated into the Project’s design and are specifically intended to reduce or avoid impacts (e.g., water quality treatment basins).
- **Mitigation Measures (MM)** – These measures include requirements that are imposed where the impact analysis determines that implementation of the proposed Project would result in significant impacts. Mitigation measures are proposed to reduce impacts to less than significant levels. In accordance with the requirements of *CEQA*.

Plans, Policies, or Programs (PPP) and the Project Design Features (PDF) were assumed and accounted for in the assessment of impacts for each issue area.

Mitigation Measures (MM) were formulated only for those issue areas where the results of the impact analysis identified significant impacts that could to be reduced to less than significant levels.

All three types of measures described above will be required to be implemented as part of the Project, and will be included in the Mitigation Monitoring and Reporting Program for the Project.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

	Aesthetics		Land Use and Planning
	Agriculture and Forest Resources		Mineral Resources
	Air Quality		Noise
	Biological Resources		Population and Housing
	Cultural Resources		Public Services
	Geology and Soils		Recreation
	Greenhouse Gas Emissions		Transportation/Traffic
	Hazards and Hazardous Materials		Utilities and Service Systems
	Hydrology and Water Quality		Mandatory Findings of Significance

Because none of the environmental factors above are “checked”, the Project does not require the preparation of an Environmental Impact Report.

Determination

On the basis of this initial evaluation:

I find that the proposed use COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be recommended for adoption.

I find that although the proposal could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project Applicant. A MITIGATED NEGATIVE DECLARATION will be recommended for adoption.

I find that the proposal MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the proposal MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effect (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION, pursuant to all applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures are imposed upon the proposed Project, nothing further is required.



Signature

City of Banning

Agency

Brian Guillot
Acting Community Development Director

Printed Name/Title

December 11, 2015

Date

Appendices (On Compact Disk)

Appendix A. Multiple Species Habitat Conservation Plan

Appendix B. Cultural Resources Assessment

Appendix C. Focused Traffic Impact Study

Appendix D. Jurisdictional Delineation Report

Appendix E. Air Quality/Green House Gases Report

Appendix F. Water Quality Management Plan (WQMP)

3.1 Aesthetics

<i>Would the Project:</i>	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?			■	
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				■
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			■	
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			■	

3.1 (a.) Have a substantial adverse effect on a scenic vista?

Determination: Less than Significant Impact.

Sources: General Plan, City of Banning, Google Earth, Project Application Materials.

Plans, Policies or Programs (PPP)

The following applies to the Project and would reduce impacts related to scenic vistas.

PPP 3.1-1 Banning Zoning Code: As required by the City of Banning Zoning Regulations, Table 17.08.030, residential building heights shall not exceed thirty-five (35) feet in height.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The site is a 34.6 acres vacant lot and is currently zoned Low Density Residential (0-5 du/ac) and RL-10,000 Overlay. The site slopes downward from the northwest to the southeast with elevations from 2,640 above sea level at the northwest corner of the project site to 2,593 above sea level at the north east corner. The elevation differential from the site's north edge to Wilson Street is approximately eight (8) feet.

The Project butts against the San Bernardino National Forest. The San Bernardino National Forest lands are interspersed throughout the north central and northwesterly portions of the City's planning area. There are no existing authorized or mapped trails on Forest lands in the planning area, nor trails proposed by the U.S. Forest Service. The Scenic Easement Deed Act (Government Code Sections 6950-6954) authorizes local governments to purchase fee land or scenic easements.

No scenic easements of record however lie adjacent to the Project area that will be affected by the future residential development. However, approximately 4.6 acres, referenced as Lot A on the Tract Map will remain as Open Space and function as a land buffer between the mountain foothills and the Project site. The 4.6 acres extends the length of the Project site.

As required by PPP 3.1-1 above, the residential structures proposed of the property are restricted to 35 feet in height and would not block or completely obstruct views from surrounding public roadways to the hills and mountains visible in the horizon under existing conditions.

The Project proposes to subdivide the site into 98 single-family residential lots and provide neighborhoods roadways and other supporting infrastructure. Views from the residences to the east and south will be affected by the construction of the proposed Project, insofar as the existing homes to the south are located at a lower elevation than those of the proposed Project. However the homes to the south are separated by Wilson Street, the Montgomery Creek Channel and the Creek's spreading basin area. Homes to the east are partially separated by Sunrise Avenue with existing homes further north along Sunrise Avenue lying adjacent to the Project site. Double row lots between Dawn Lane and Eclipse Drive separated by manufactured slopes between housing lots will be buttressed by retaining walls and slopes ranging from 8 to 30 feet. Residents on the low side of the slope will have back yards in accordance with the Zoning requirements for Low Density Residential districts. All views, particularly those to the north, south, and south easterly and northeasterly areas will not be affected by significant slope gradients.

With the implementation of PPP 3.1-1 the proposed Project impacts on aesthetics and scenic resources are expected to be less than significant.

3.1 (b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Determination: No Impact.

Sources: California Department of Transportation "Scenic Highway Program Eligible and Officially Designated Routes," Banning General Plan Figure - Google Earth.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

According to the California Department of Transportation, the Project site is not located within a State Scenic Highway neither is the Project site adjacent to a County Scenic Highway. Therefore, construction and the long-term operation of the Project would have no impact on scenic resources within a scenic highway and no mitigation measures are required.

3.1 (c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Determination: Less Than Significant Impact.

Sources: Project Application Materials, Google Earth.

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts related to the visual character and quality of the site and its surroundings. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.1-2 The Project shall comply with the *City of Banning Grading, Erosion and Sediment Control, Title 18 of the City of Banning Municipal Code* for residential development.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

Construction Impacts

During the Project's temporary construction period, construction equipment, supplies, and activities would be visible on the subject property from immediately surrounding areas. Construction activities are a common occurrence in the developing Inland Empire region of Southern California and are not considered to substantially degrade the area's visual quality. All construction equipment would be removed from the Project site following completion of the Project's construction activities. For these reasons, the temporary visibility of construction equipment and activities at the Project site would not substantially degrade the visual character of the surrounding area.

Operational Impacts

Development of the Project site would introduce residential development onto the site. The residential development will consist of single-family detached homes, with related improvements such as roadways, landscaping, walls, and street lights. These improvements would be implemented in accordance with the design standards contained in the *City of Banning Zoning Code*. Although the existing visual character of the site will change, it will not substantially change the character of the Project site such that it becomes visually incompatible or visually unexpected when viewed in the context of its residential surroundings.

Based on the analysis above, with implementation of PPP 3.1-2, impacts would be less than significant and no mitigation measures are required.

3.1 (d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Determination: Less Than Significant Impact.

Sources: City of Banning Zoning Standards, Project Application Materials

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts related to light and glare. This measure would be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.1-3 As required by the City of Banning outdoor lighting, other than street lighting, shall be low to the ground or shielded and hooded to avoid shining onto adjacent properties and streets.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The proposed Project would increase the amount of light in the area above what is being generated by the vacant site by directly adding new sources of illumination including security and decorative lighting for the proposed houses.

PPP 3.1-3 requires that outdoor lighting, other than street lighting, shall be low to the ground or shielded and hooded to avoid shining onto adjacent properties and streets.

Based on the analysis above, with implementation of PPP 3.1-1, 3.1-2, and PPP 3.1-3 impacts would be less than significant and no mitigation measures are required.

3.2 AGRICULTURE AND FORESTRY RESOURCES

<p><i>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:</i></p>	<p>Potentially Significant Impact</p>	<p>Less Than Significant Impact With Mitigation Incorporated</p>	<p>Less Than Significant Impact</p>	<p>No Impact</p>
<p>a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?</p>				<p>■</p>
<p>b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?</p>				<p>■</p>
<p>c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?</p>				<p>■</p>
<p>d. Result in the loss of forest land or conversion of forest land to non-forest use?</p>				<p>■</p>
<p>e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?</p>				<p>■</p>

3.2 (a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? .

Determination: No Impact

Sources: Banning General Plan Land Use Map, Zoning Map

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as mapped by the State Department of Conservation Farmland Mapping and Monitoring Program. As such, the Project has no potential to convert such lands to a non-agricultural use and no impact would occur. No mitigation measures are required.

3.2 (b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Determination: No Impact.

Sources: Banning General Plan Land Use Map, Zoning Map

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The Project site is zoned RL-10,000. As such, it will not conflict with existing zoning for agricultural use. Pursuant to the California Land Conservation Act of 1965, a Williamson Act Contract enables private landowners to voluntarily enter into contracts with local governments for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive lower property tax assessments based upon farming and open space uses as opposed to full market value. The site is not under a Williamson Act Contract. As such, there is no impact. No mitigation measures are required.

3.2 (c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Determination: No Impact.

Sources: Banning General Plan Land Use Map, Zoning Map.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The Project site is zoned RL 10,000. No forest land, timberland, or timberland production occurs on the site so zoning for such uses or activities will not be impacted. Therefore, no impacts would occur and no mitigation measures are required.

3.2 (d) Result in the loss of forest land or conversion of forest land to non-forest use?

Determination: No Impact.

Source: Field Survey.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The Project site consists of vacant land and does not contain forest land. Therefore, no impacts would occur and no mitigation measures are required.

3.2 (e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

Determination: No Impact.

Sources: Banning General Plan Land Use Map, Field Survey

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The Project site is approximately 34.6 gross acres in size and is situated by residential development and located in an area largely characterized by residential single family development. There is no land being used primarily for agricultural purposes in the vicinity of the site. As such, the Project would not result in conversion of Farmland to non-agricultural use and no impacts would occur. No mitigation measures are required.

3.3 AIR QUALITY

<i>Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:</i>	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?			■	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			■	
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			■	
d. Expose sensitive receptors to substantial pollutant concentrations?			■	
e. Create objectionable odors affecting a substantial number of people?			■	

3.3 (a) Conflict with or obstruct implementation of the applicable air quality plan (South Coast Air Quality Management District)?

Determination: Less Than Significant Impact.

Sources: LSA Associates, Air Quality and Climate change Study for Banning TTM 36939, September 24, 2015.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

Federal Air Quality Standards

Under the Federal Clean Air Act, the Federal Environmental Protection Agency establishes health-based air quality standards that California must achieve. These are called “national ambient air quality standards” and they apply to what are called “criteria pollutants.” Ambient (i.e. surrounding) air quality standard establish a concentration above which a criteria pollutant is known to cause adverse health effects to people. The national ambient air quality standards apply to the following criteria pollutants:

- Ozone (8-hour standard)

- Respirable Particulate Matter (PM₁₀)
- Fine Particulate Matter (PM_{2.5})
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_x)
- Sulphur Dioxide (SO₂), and
- Lead.

State Air Quality Standards

Under the California Clean Air Act, the California Air Resources Board also establishes health-based air quality standards that cities and counties (including Jurupa Valley) must meet. These are called “state ambient air quality standards” and they apply to the following criteria pollutants:

- Ozone (1-hour standard)
- Ozone (8-hour standard)
- Respirable Particulate Matter (PM₁₀)
- Fine Particulate Matter (PM_{2.5})
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_x)
- Sulphur Dioxide (SO₂), and
- Lead

Regional Air Quality Standards

The City of Banning is located within the South Coast Air Basin which is under the jurisdiction of the South Coast Air Quality Management District. The District develops plans and regulations designed to achieve these both the national and state ambient air quality standards described above.

Attainment Designation

An “attainment” designation for an area signifies that criteria pollutant concentrations did not exceed the established standard. In contrast to attainment, a “nonattainment” designation indicates that a criteria pollutant concentration has exceeded the established standard.

Table 3 shows the attainment status of criteria pollutants in the South Coast Air Basin.

Table 3. Attainment Status of Criteria Pollutants in the South Coast Air Basin.

Criteria Pollutant	State Designation	Federal Designation
Ozone – 1 hour standard	Nonattainment	No Standard
Ozone – 8 hour standard	Nonattainment	Nonattainment
Respirable Particulate Matter (PM ₁₀)	Nonattainment	Nonattainment
Fine Particulate Matter (PM _{2.5})	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO _x)	Nonattainment	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Lead	Attainment	Attainment
<i>Source: South Coast Air Quality Management District, 2014</i>		

Air Quality Management Plan

The South Coast Air Quality Management District is required to produce air quality management plans directing how the South Coast Air Basin’s air quality will be brought into attainment with the national and state ambient air quality standards. The most recent air quality management plan is 2012 Air Quality Management Plan *and* it is applicable to City of Banning. The purpose of the 2012 Air Quality Management Plan is to achieve and maintain both the national and state ambient air quality standards described above.

In order to determine if a project is consistent with the 2012 Air Quality Management Plan, the South Coast Air Quality Management District has established consistency criterion which are defined in Chapter 12, Sections 12.2 and 12.3 of the South Coast Air Quality Management District’s CEQA Air Quality Handbook and are discussed below.

Consistency Criterion No. 1: *The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the 2012 Air Quality Management Plan.*

Consistency Criterion No. 1 refers to violations of the California Ambient Air Quality Standards and National Ambient Air Quality Standards. As evaluated under Issues 3.3 (b), (c), and (d), below, the Project would not exceed regional or localized significance thresholds for any criteria pollutant during construction or during long-term operation. Accordingly, the Project’s regional and localized emissions would not contribute substantially to an existing or potential future air quality violation or delay the attainment of air quality standards.

Consistency Criterion No. 2: *The proposed project will not exceed the assumptions in the 2012 Air Quality Management Plan.*

The growth forecasts used in the 2012 Air Quality Management Plan to project future emissions levels are based on the projections of the Regional Transportation Model utilized by the Southern

California Association of Governments, which incorporates land use data provided by city and county General Plans, as well as assumptions regarding population number, location of population growth, and a regional housing needs assessment.

The Banning General Plan land use designations currently assigned to the Project site is Low Density Residential (0 to 5 du/ac). If the Project site were built out in accordance with its existing *General Plan* land use designation, a maximum of 173 residential dwelling units could be constructed on the property. (Low Density Residential @ 5 units per acre x 34.6 acres = 173 units. The Project proposes only 98 single family residential dwelling units, which, constitutes only 57 percent of the development potential of the site. The housing density proposed is significantly below the build-out permitted under the current land use designation.

The 2012 Air Quality Management Plan relied in part upon the City's General Plan for the growth forecast estimates used in the 2012 Air Quality Management Plan. As such, the Project would not exceed the assumptions in the 2012 Air Quality Management Plan because it does not exceed the growth forecasts contained in the Plan.

For the reasons stated above, the Project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, delay the timely attainment of air quality standards or the interim emissions reductions specified in the 2012 Air Quality Management Plan. In addition, the Project would not exceed the growth assumptions in the 2012 Air Quality Management Plan. As such, the Project would be consistent with the 2012 Air Quality Management Plan and impacts would be less than significant and no mitigation measures are required.

3.3(b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Determination: Less Than Significant Impact.

Sources: California Emissions Estimator Model, South Coast Air Quality Management District, Air Quality Management Plan, CEQA Air Quality Handbook, Project Application Materials

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts related to air quality violations. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.3-1 The Project is required to comply with the provisions of South Coast Air Quality Management District Rule 402, A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

PPP 3.3-2 The Project is required to comply with Rule 403 "Fugitive Dust." Rule 403 requires implementation of best available dust control measures during construction activities that generate fugitive dust, such as earth moving and stockpiling activities, grading, and equipment travel on unpaved roads.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The South Coast Air Quality Management District has developed regional and localized significance thresholds for regulated pollutants. Any project in the South Coast Air Basin with daily emissions that exceed any of the indicated regional or localized significance thresholds would be considered to contribute to a projected air quality violation. The Proposed Project's regional and localized air quality impacts are discussed below as shown in Table 4.

Regional Impact Analysis

As with any new development project, the Proposed Project has the potential to generate pollutant concentrations during both construction activities and long-term operation. The following provides an analysis based on the applicable regional significance thresholds established by the South Coast Air Quality Management District in order to meet Federal and State air quality standards.

Table 4. South Coast Air Quality Management District Air Quality Regional Significance Thresholds

Pollutant	Emissions (Construction) (pounds/day)	Emissions (Operational) (pounds/day)
NO _x	100	55
VOC	75	55
PM ₁₀	150	150
PM _{2.5}	55	55
SO _x	150	150
CO	550	550
Lead	3	3

Source: South Coast Air Quality Management District CEQA Air Quality Significance Thresholds (2009)

Both construction and operational emissions for the Project were estimated by using the California Emissions Estimator Model which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as California Environmental Quality Act (CEQA) documents and is authorized for use by the South Coast Air Quality Management District.

Construction Related Impacts

Construction activities associated with the proposed Project will result in emissions of CO, VOCs, NO_x, SO_x, PM₁₀, and PM_{2.5}. Construction related emissions are expected from the following onsite and offsite construction activities and time duration:

- Site Preparation 20 Days
- Grading 40 Days
- 1st Phase of Home Construction 60 Days
- Architectural Coating 38 Days
- Paving 55 Days

Table 5 shows the South Coast Air Quality Management District daily criteria pollutant emissions thresholds for construction and operation of the proposed project in the Basin using the CalEEMod Model

Table 5. SCAQMD Emissions Thresholds

Emissions Source	Pollutant Thresholds (pounds per day)					
	ROC	NOX	CO	SO2	PM10	PM2.5
Construction	41	75	50	.064	10	6.6
Operational	55	100	550	150	150	55
	No	No	No	No	No	No

Source: LSA Associates Air Quality and Climate Change Study, September 24, 2015

As shown in Table 5 above, construction related emissions would not exceed South Coast Air Quality Management District regional construction criteria thresholds without mitigation. With implementation of PPP 3.3-1 above (includes increasing wetting disturbed areas to 3-times per day, reduce speed to 25 mph on unpaved areas of project, and cleaning paved access roads daily) PM10 emissions are reduced.

Fugitive Dust

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, including cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations and weather conditions at the time of construction. The proposed project will be required to comply with SCAQMD Rules 402 and 403 to control fugitive dust. Table 5 lists total construction emissions (i.e., fugitive-dust emission and construction-equipment exhausts) that have incorporated a number of feasible control measures that can be reasonably implemented to significantly reduce PM10 emissions from construction.

Table 6: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)								
	VOC	NO _x	CO	SO _x	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}	CO _{2e}
Site Preparation	5.1	55	42	0.042	7.2	2.9	3.9	2.7	4,300
Grading	6.6	75	50	0.064	3.6	3.6	1.5	3.3	6,700
Building Construction	3.6	30	21	0.034	0.45	2	0.12	1.9	3,300
Architectural Coating	37	2.4	2.3	0.0039	0.078	0.2	0.021	0.2	360
Paving	2.1	22	16	0.024	0.17	1.3	0.045	1.2	2,500
Peak Daily	41	75	50	0.064	10		6.6		6,700
SCAQMD Thresholds	75	100	550	150	150		55		No
Significant Emissions?	No	No	No	No	No		No		Threshold

Architectural Coatings

Architectural coatings contain VOCs and are part of the O3 precursors. Based on the proposed project, it is estimated that application of the architectural coatings for the proposed peak construction day will result in a combined peak of 44lbs/day of VOC. Therefore, this VOC emission will not exceed the SCAQMD VOC Threshold of 75lbs/day.

Localized Impacts Analysis as described in the SCAQMD guidance on applying CalEEMod modeling results to localized impacts analysis, the equipment planned to be used on a peak day during site preparation and grading operations would disturb no more than 5 acres in a day¹. Thus the 5-acre LST thresholds are appropriate for this project. Table 7 shows that the emissions of pollutants on the peak day of construction would all be less than the SCQAMD LST thresholds, which means that the resulting concentrations at the church and nearest residences would be below the NAAQS and CAAQS concentrations.

Table 7. Construction Localized Impacts Analysis

Emissions Sources	NOx	CO	PM10	PM2.5
	On-Site Emission s	75	49	10
LST Thresholds	259	3,423	58	13
Significant Emissions?	NO	NO	NO	NO

1. South Coast Air Quality Management District (SCAQMD). Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. Website: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/cal-eemod-guidance.pdf>, accessed September, 2015

Based on the above, the Project would not emit substantial concentrations of these pollutants during construction and would not contribute to an existing or projected air quality violation, on a direct or cumulative basis.

Odors

Heavy-duty equipment in the project area during construction would emit odors, primarily from the equipment exhaust. SCAQMD Rule 402 regarding nuisance states: “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which

cause, or have a natural tendency to cause, injury or damage to business or property.” The proposed uses are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed project, and no mitigation measures are required.

Naturally Occurring Asbestos

The proposed project is located in Riverside County, which is not among the counties that are found to have serpentine and ultramafic rock in their soils. Therefore, the potential risk for NOA during project construction is small and less than significant.

Table 6 and 7 show that daily regional construction emissions would not exceed the daily thresholds of any criteria pollutant emission thresholds established by the SCAQMD, and during construction, there will be no locally significant impacts, thus, no mitigation is required during project construction.

Long-Term Air Emission Impacts

Long-term air emission impacts are those associated with stationary sources and mobile sources involving any project-related change. The proposed project would result in both stationary and mobile source emissions. The stationary source emissions would come from natural gas consumption, landscape maintenance, and off-site electric power generation. Mobile sources from vehicular trips associated with the proposed uses emit pollutants.

The CalMEEMod Model was used to calculate the operational emissions. Mobile sources emissions were calculated based on the trip generation factors described in the Focused Traffic Impact Study (LSA Associates, Inc., September 2015). Other emissions sources were calculated using the defaults in the CalEEMod mode for the project land use.

Long-term operational emission associated with the full proposed project of 98 homes are shown in Table 8. Table 7 shows that the peak daily emissions of all criterial pollutants as a result of the proposed project would not exceed the corresponding SCAQMD daily emission thresholds. Therefore, project-related long-term air quality impacts would be less than significant.

Table 8: Opening Year Regional Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Sources	4.3	0.096	8.2	0.00043	0.18	0.17
Energy Sources	0.098	0.84	0.36	0.0053	0.068	0.068
Mobile Sources	3.6	12	41	0.099	6.9	2.0
Total Project Emissions	8.0	13	50	0.10	7.1	2.2
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No

Based on the analysis above, regional air quality impacts would be less than significant and no mitigation measures are required. With implementation of PPP 3.3-1 impacts would be further reduced to the maximum extent feasible.

Localized Impact Analysis

The localized impacts analysis by design only includes on-site sources; however, the CalEEMod model outputs for operations do not separate on-site and off-site emissions. The emissions shown in Table 9 below for area sources are assumed to all occur on site and for energy sources entirely off site. While some of the mobile-source emission will occur from vehicles driving on site, most of the mobile-source emissions calculated by the CalEEMod model would occur while the vehicles are driving off site. It is unlikely that the average on-site distance driven by vehicles will be 2,000 ft, which is approximately 4 percent of the total miles traveled. For a worst-case scenario assessment, the emissions shown in Table 9 include all on-site project-related area sources and 5 percent of the project-related new mobile sources

Table 9: Long-Term Operational Localized Impact Analysis (lbs/day)

Emissions Sources	NO_x	CO	PM₁₀	PM_{2.5}
On-site emissions	0.70	10	0.53	0.27
LST Thresholds	259	3,423	14	3.8
Significant Emissions?	No	No	No	No

Table 9 shows that the emissions of pollutants during project operations would all be less than the SCAQMD LST thresholds, which means that the resulting concentrations at the church and nearest residences would be all below the NAAQS and CAAQS. Therefore, the proposed operational activity would not result in a locally significant air quality impact.

3.3(c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Determination: Less Than Significant Impact.

Sources: California Emissions Estimator Model, South Coast Air Quality Management District, Air Quality Management Plan, CEQA Air Quality Handbook, Project Application Materials.

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts related to a cumulatively considerable net increase of any criteria pollutant. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.3-1 The Project is required to comply with the provisions of South Coast Air Quality Management District Rule 402 (Nuisance), "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

PPP 3.3-2 The Project is required to comply with Rule 403 "Fugitive Dust." Rule 403 requires implementation of best available dust control measures during construction

activities that generate fugitive dust, such as earth moving and stockpiling activities, grading, and equipment travel on unpaved roads.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

As discussed in Issue 3.3(b) above, the Project would not exceed the regional or localized significance thresholds for construction or operational activities. The Project would comply with South Coast Air Quality Management District Rule 402 (Nuisance) and Rule 403 (fugitive dust control) during construction, as well as all other adopted Air Quality Management Plan emissions control measures. Per South Coast Air Quality Management District rules and mandates, as well the California Environmental Quality Act requirement that impacts be mitigated to the maximum extent feasible, these same requirements would also be imposed on all projects within the South Coast Air Basin area, which would include all related projects.

Based on the analysis above impacts would be less than significant and no mitigation measures are required. With implementation of PPP 3.3-1 through PPP 3.3-2, impacts would be further reduced to the maximum extent feasible.

3.3(d) Expose sensitive receptors to substantial pollutant concentrations?

Determination: Less Than Significant Impact.

Sources, South Coast Air Quality Management District, CALFEEMod.

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts related to substantial pollutant concentrations to sensitive receptors. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.3-1 The Project is required to comply with the provisions of South Coast Air Quality Management District Rule 402, "Nuisance". A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

PPP 3.3-2 The Project is required to comply with Rule 403 "Fugitive Dust." Rule 403 requires implementation of best available dust control measures during construction activities that generate fugitive dust, such as earth moving and stockpiling activities, grading, and equipment travel on unpaved roads.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

Sensitive receptors (i.e., children, senior citizens, and acutely or chronically ill people) are more susceptible to the effects of air pollution than the general population. Land uses that are considered sensitive receptors typically include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. The residential uses adjacent to the site are considered sensitive receptors.

As indicated above under the discussion of Issue 3.3 (b), the Project would not exceed any of the South Coast Air Quality Management District's Localized Significance Thresholds during near-term construction or long-term operation. In addition, the Project would not create a CO Hot Spot. Accordingly, Project-related localized emissions would not expose sensitive receptors to substantial pollutant concentrations during construction or long-term operation, and impacts would be less than significant. With implementation of PPP 3.3-1 through PPP 3.3-2, impacts would be further reduced to the maximum extent feasible.

3.3 (e) Create objectionable odors affecting a substantial number of people?

Determination: Less Than Significant Impact.

Source: CEQA Air Quality Handbook, Project Application Materials.

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts related to objectionable odors. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.3-1 The Project is required to comply with the provisions of South Coast Air Quality Management District Rule 402 "Nuisance." Adherence to Rule 402 reduces the release of odorous emissions into the atmosphere.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

According to the South Coast Air Quality Management District CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project does not include any the above identified uses and therefore would not produce objectionable odors during operation.

Construction activities both onsite and offsite could produce odors from equipment exhaust, application of asphalt, and/or the application of architectural coatings. However, any odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon completion of construction activities.

Based on the analysis above impacts would be less than significant and no mitigation measures are required. With implementation of PPP 3.3-1, impacts would be further reduced to the maximum extent feasible.

3.4 BIOLOGICAL RESOURCES

<i>Would the Project:</i>	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		■		
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				■
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				■
d. 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?				■
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		■		
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				■

3.4(a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Determination: Less Than Significant with Mitigation Incorporated.

Source: MSHCP Consistency Analysis and Habitat Assessment, LSA, May 2015

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts related to impacts to candidate, sensitive, or special status species. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.4-1 The Project is required to pay Fish and Wildlife fees to California Department of Fish and Wildlife.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The project site is highly disturbed due to past and current land use practices. The resulting disturbance caused the vegetation on the project site to be dominated by ruderal vegetation. The east side of the project site consists solely of Russian thistle (*Salsola tragus*) and the west side of the project consists primarily of non-native grasslands where red brome (*Bromus madritensis*), ripgut brome (*Bromus diandrus*) and wild oat (*Avena fatua*) are dominant.

The project is located within the Pass Area Plan of the Multiple Species Habitat Conservation Plan (MSHCP), but is not located within a Criteria Area or adjacent to a Criteria Area or Conservation Area. However, as the subject site not within or adjacent to a Criteria Area, the project is not subject to the Urban/Wildlife Interface Guidelines. Riverine resources are present. The project site is within the MSHCP survey area for Narrow and Endemic Plant Species Habitat Assessment (NEPSSA) and burrowing owl. A survey for burrowing owl was conducted on May 5 and 6, 2015. Suitable habitat for burrowing owl is present on site, specifically within the open areas surrounded by low-lying ruderal vegetation. No burrowing owls or burrowing owl sign (e.g., whitewash, pellets, scat, tracks, and/or feathers) were observed during the survey, and no burrows that could have been occupied by burrowing owl were found. Mitigation is required.

Mitigation Measure (MM)

MM BIO-1: Pre-Construction Burrowing Owl Survey. Per the Multiple Species Habitat Conservation Plan, an additional pre-construction Burrowing Owl survey will be required within 30 days prior to beginning of site grading.

- a. *In the event that the pre-construction survey identifies the presence of at least one individual but less than three (3) mating pairs of burrowing owl, then prior to the issuance of a grading permit and prior to the commencement of ground-disturbing activities on the property, the qualified biologist shall passively or actively relocate any burrowing owls. Passive relocation, including the required use of one-way doors to exclude owls from the site and the collapsing of burrows, will occur if the biologist determines that the proximity and availability of alternate habitat is suitable for successful passive relocation. Passive relocation shall follow California Department of Fish and Wildlife relocation protocol. If proximate alternate habitat is not present as determined by the biologist, active relocation shall follow California Department of Fish and Wildlife relocation protocol. The biologist shall confirm in writing to the Planning Department that the species has fledged or been relocated prior to the issuance of a grading permit.*

With implementation of Mitigation Measure BIO-1, impacts related to candidate, sensitive, or special status species are less than significant.

3.4(b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

Determination: No Impact.

Source: MSHCP Consistency Analysis and Habitat Assessment, LSA, May 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The Project site is almost entirely covered by disturbed, ruderal vegetation. Sporadic ornamental plant and tree species were also found on site, with small isolated polygons of California buckwheat, California sage brush and three Mexican elderberry trees located along the southwestern area. No indication of riparian habitat, wetland waters of the U.S. were found or other sensitive natural communities was noted due to the highly disturbed nature of the site. As such, there is no impact and no mitigation measures are required.

3.4(c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Determination: No Impact.

Source: MSHCP Consistency Analysis and Habitat Assessment, LSA, May 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

Based on a field survey, the Project site does not contain any wetlands. Three drainage courses were identified by fieldwork investigation of the site. The entire site was surveyed on foot for potential wetlands and non-wetland jurisdictional waters as well as streambed and riparian

resources. Drainages D1 and D2 drain southeast through the project site. Both convey flows through the site into Montgomery Creek Channel which borders the southern boundary of the site. The third drainage course appears to be an erosional feature associated with water towers north of the project site and not a relatively permanent water course that the Army Corp. of Engineers, (ACOE) would typically regulate. The Montgomery Creek Channel conveys flows under Interstate 10 to Smith Creek. Smith Creek flows into the San Geronio River, to the Whitewater River, which is a direct tributary to the Salton Sea. The drainage feature do not qualify as wetlands.. As such, there are no impacts and no mitigation measures are required.

3.4(d) *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?*

Determination: No Impact.

Source: MSHCP Consistency Analysis and Habitat Assessment, LSA, May 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project related to this issue.

Impact Analysis

The Project site consists of approximately 34.6 gross acres and lies adjacent to sites zoned for Low Density Residential to the east, west and south, and Open Space Parks to the north. The Project site is almost entirely covered by disturbed, ruderal vegetation. Sporadic ornamental plant and tree species were also found on site. No indication of wildlife was noted due to the highly disturbed nature of the site. As such, there are no impacts and no mitigation measures are required.

3.4(e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Determination: Less Than Significant Impact With Mitigation Incorporated.

Source: MSHCP Consistency Analysis and Habitat Assessment, LSA, May 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is almost entirely covered by disturbed, ruderal vegetation. Sporadic ornamental plant and tree species were also found on site, with small isolated polygons of California buckwheat, California sage brush and three Mexican elderberry trees located along the southwestern area.

The City of Banning's General Plan Biological Resources Element includes provisions to provide for the preservation and protection of the natural environment and many biological resources. Biological resources represent the plants and wildlife species and ecosystems and habitats that contribute to the area's natural setting. As set forth in Government Code Section 65302(d), the City is required to include an element that provides for the conservation and preservation of wildlife resources. Wildlife common to suburban areas was observed using the site in the field survey investigation conducted on May 5, 2015. The project's Multiple Species Habitat Conservation Plan (MSHCP) cites that the project is not located within a Criteria Area or adjacent to a Criteria Area or Conservation Area. Thus the project is not subject to the Urban/Wildlands Interface Guidelines. Based on General Plan policies Policy 2 , Program 2.A, the following mitigation measure is intended to reduce impacts:

- *Biological Resource Policy 2, Program 2.A* The City shall evaluate projects based on their impact on existing habitat and wildlife, and for the land's value as viable open space.

Mitigation Measures (MM)

MM BIO-2. Native Plan Recovery: Developer shall recover native and drought tolerant plant materials, and incorporate them into project landscaping, to provide or enhance habitat for local species to the extent possible.

With implementation of Mitigation Measures BIO-1 and BIO-2, impacts will be less than significant.

3.4(f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Determination: No Impact

Source: MSHCP Consistency Analysis and Habitat Assessment, LSA, May 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP, a regional Habitat Conservation Plan was adopted on June 17, 2003. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. The MSHCP provides coverage (including take authorization for listed species) for special-status plant and animal species, as well as mitigation for impacts to sensitive species.

Based on the Biological Resources Walkover Review and a review of the MSHCP Consistency Analysis and Habitat Assessment Study prepared by LSA, May 2015:

- The Project site is not located within an MSHCP Criteria Area (area proposed for conservation).
- The Project site does not contain MSHCP riparian/riverine areas or vernal pools.
- The Project site does not impact any MSHCP Narrow Endemic Plant Species.
- The Project site is not required to comply with the Urban/Wildland Interface Guidelines.
- No large burrows were found in the area and the particularly dense ruderal vegetation suggest poor habitat for burrowing owl. However, their presence cannot be ruled out because burrowing owls have been known to occupy disturbed sites. Mitigation is required.

Mitigation Measures (MM)

Mitigation Measure BIO-1 under Issue 3.4(a) above shall apply.

With implementation of Mitigation Measure BIO-1, impacts related to conflicts with the provisions of the City's General Plan Biological Element are less than significant.

3.5 CULTURAL RESOURCES

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?				■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?		■		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		■		
d. Disturb any human remains, including those interred outside of formal cemeteries?			■	

3.5(a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines § 15064.5?

Determination: No Impact.

Source: Cultural Resources Assessment, Banning Tract 36939, LSA, May 2015, City of Banning General Plan

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Historic resources generally consist of buildings, structures, improvements, and remnants associated with a significant historic event or person(s) and/or have a historically significant style, design, or achievement. Damaging or demolition of historic resources is typically considered to be a significant impact. Impacts to historic resources can occur through direct impacts, such as destruction or removal, and indirect impacts, such as a change in the setting of a historic resource.

CEQA Guidelines §15064.5(a) clarifies that historical resources include the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.
2. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements [of] section 5024.1(g) of the Public Resources Code.

3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

The site is highly disturbed by activities involving the removal of the citrus grove. There is a corrugated metal shed structure that is in a dilapidated condition. The majority of the site is covered by disturbed, ruderal vegetation. Sporadic ornamental plant and tree species were also found on site. Given the current conditions of the site, it does not appear that any surface cultural resources are present on the site. In addition, the site also does not appear on the Riverside County Historic Resources Survey Architectural Survey Forms provided by the Riverside County Parks Department.

Therefore, there will be no impact to historical resources as a result of the Project and no mitigation measures are required.

3.5(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines § 15064.5?

Determination: Less Than Significant Impact with Mitigation Incorporated.

Source: Cultural Resources Assessment, Banning Tract 36939, LSA, May 2015, City of Banning General Plan

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Archaeological sites are locations that contain resources associated with former human activities, and may contain such resources as human skeletal remains, waste from tool manufacture, tool concentrations, and/or discoloration or accumulation of soil or food remains.

During grading activities, it is possible that subsurface archaeological resources may be uncovered. The following mitigation measure is required.

Mitigation Measures (MM)

MM CR-1: Archaeological Monitoring. Prior to the issuance of a grading permit, the Project Proponent shall implement the following program:

- a) *A qualified archaeological monitor shall be retained by the Project Proponent to conduct monitoring of all grading and trenching activities and has the authority to halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction.*

b) *During grading operations, a professional archaeological monitor shall observe the grading operation until such time as monitor determines that there is no longer any potential to uncover buried cultural deposits. If the monitor suspects that an archaeological resource may have been unearthed, the monitor shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. If the monitor determines that the suspected resource is potentially significant, the archaeologist shall notify the appropriate Native American Tribe(s) and invite a tribal representative to consult on the resource evaluation. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2. If the resource is significant, Mitigation Measure CR-2 shall apply.*

***MM CR-2: Treatment Plan.** If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and a representative of the appropriate Native American Tribe(s), the Project Proponent, and the City of Banning Community Development Department shall confer regarding mitigation of the discovered resource(s). A treatment plan shall be prepared and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The treatment plan shall contain a research design and data recovery program necessary document the size and content of the discovery such that the resource(s) can be evaluated for significance under CEQA criteria. The research design shall list the sampling procedures appropriate to exhaust the research potential of the archaeological resource(s) in accordance with current professional archaeology standards (typically this sampling level is two (2) to five (5) percent of the volume of the cultural deposit). The treatment plan shall require monitoring by the appropriate Native American Tribe(s) during data recovery excavations of archaeological resource(s) of prehistoric origin, and shall require that all recovered artifacts undergo laboratory analysis. At the completion of the laboratory analysis, any recovered archaeological resources shall be processed and curated according to current professional repository standards. The collections and associated records shall be donated to an appropriate curation facility, or, the artifacts may be delivered to the appropriate Native American Tribe(s) if that is recommended by the City of Banning. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City of Banning Community Development Department.*

With implementation of Mitigation Measures CR-1 and CR-2, impacts will be less than significant.

3.5(c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Determination: Less Than Significant Impact with Mitigation Incorporated.

Sources: Cultural Resources Assessment, Banning Tract 36939, LSA, May 2015, City of Banning General Plan

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Paleontological resources are the preserved fossilized remains of plants and animals. Fossils and traces of fossils are preserved in sedimentary rock units, particularly fine- to medium grained marine, lake, and stream deposits, such as limestone, siltstone, sandstone, or shale, and in ancient soils. They are also found in coarse-grained sediments, such as conglomerates or coarse alluvium sediments. Fossils are rarely preserved in igneous or metamorphic rock units. Fossils may occur throughout a sedimentary unit and, in fact, are more likely to be preserved subsurface, where they have not been damaged or destroyed by previous ground disturbance, amateur collecting, or natural causes such as erosion.

The Project site has been graded and the potential for paleontological resources to be present at the Project site is considered low. Regardless, there is a potential to uncover paleontological resources during additional excavation and/or grading activities on the Project site. Therefore, the following mitigation measure is required.

Mitigation Measures (MM)

MM CR-3: Paleontological Monitoring. Prior to the issuance of grading permits, the Project Proponent shall implement the following program:

- a) A qualified paleontologist shall be on-site at the pre-construction meeting to discuss monitoring protocols.*
- b) The qualified paleontologist shall be empowered to temporarily halt or redirect grading activities if/when paleontological resources are discovered.*
- c) In the event of a paleontological discovery the monitor shall flag the area and notify the construction crew immediately. No further disturbance in the flagged area shall occur until the qualified paleontologist has cleared the area.*
- d) The qualified paleontologist shall quickly assess the nature and significance of the find. If the specimen is not significant it shall be quickly removed and the area cleared.*
- e) If the discovery is significant the qualified paleontologist shall notify the Project Proponent and the City immediately.*
- f) In consultation with the Project Proponent and the City, the qualified paleontologist shall develop a plan of mitigation which shall include salvage excavation and removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation in the find, a local qualified repository, and preparation of a report summarizing the find.*

Based on the analysis above, with implementation of Mitigation Measure CR-3, impacts will be less than significant.

3.5(d) Disturb any human remains, including those interred outside of formal cemeteries?

Determination: Less Than Significant Impact.

Sources: California Health and Safety Code §7050.5, Public Resources Code §5097 et. seq.

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to disturbing human remains. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.5-1 The project is required to comply with the applicable provisions of California Health and Safety Code §7050.5, Public Resources Code §5097 et. seq., and provisions of AB 52 concerning consideration of Tribal Cultural Values in determination of project impacts and mitigation.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site does not contain a cemetery and no known formal cemeteries are located within the immediate site vicinity. As noted in the response to Issue 3.5 (a) above, the Project site has been graded and the potential for uncovering human remains at the Project site is considered low. Nevertheless, the remote potential exists that human remains may be unearthed during grading and excavation activities associated with Project construction.

In the event that human remains are discovered during Project grading or other ground disturbing activities, the Project would be required to comply with the applicable provisions of California Health and Safety Code §7050.5 as well as Public Resources Code §5097 et. seq. California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. Pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner.

If the Coroner determines the remains to be Native American, the California Native American Heritage Commission (NAHC) must be contacted and the NAHC must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.

Based on the analysis above, with implementation of PPP 3.5-1, impacts would be less than significant and no mitigation measures are required.

3.6 GEOLOGY AND SOILS

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1) 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? Refer to Division of Mines and Geology Special Publication 42.		■		
2) Strong seismic ground shaking?			■	
3) Seismic-related ground failure, including liquefaction?			■	
4) Landslides?			■	
b. Result in substantial soil erosion or the loss of topsoil?		■		
c. 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-site or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?		■		
d. Be located on expansive soil, as defined in the Uniform Building Code, creating substantial risks to life or property?		■		
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				■

3.6 (a) (1) Expose people or structures to potential substantial adverse effects, 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? Refer to Division of Mines and Geology Special Publication 42.

Determination: Less Than Significant Impact with Mitigation Incorporated

Source: RMA Group Geologic Fault Investigation of Alquist-Priolo Zone Report, April 8, 2014

Plans, Policies, or Programs (PPP)

PPP 3.6 -1 In accordance with state law, all development proposals within designated Alquist-Priolo Earthquake Fault Zones shall be accompanied by appropriate geotechnical analysis.

Project Design Features (PDF)

Fault Setback Zone. In accordance with the Alquist-Priolo Act, no structures shall be constructed upon or encroach over the Fault Setback Zone.

Impact Analysis

The Project site Geologic Fault Investigation Report prepared by RMA, dated April 2014, determined that a segment of the San Gorgonio Pass fault passes through the northern portion of the project site, northwest portion and northeastern part of the site and closely parallels the northern boundary of the tract. The San Gorgonio Pass Fault Zone is a series of north-dipping reverse and thrust faults connected by strike tear faults, resulting to a surface trace that appears like an irregular, saw tooth. This east-west trending fault zone contains faults that were formed during the Pleistocene Epoch, of which some have been active in the later Holocene Epoch.

The City of Banning's General Plan Geotechnical Element in compliance to Government Code Section 65302(g) addresses the need to protect the community from unreasonable risks that could result from seismically induced hazards, such as surface rupture, ground shaking, ground failure, and other known geologic risks. The State Geologist has issued Alquist-Priolo Earthquake Fault Zone mapping for the Banning General Plan planning area. The City implements and enforces the regulations and guidelines set forth in the Alquist-Priolo Earthquake Fault Zoning Act, CEQA Statutes and Guidelines, Uniform/International Building Code, zoning ordinance, and other applicable legislation to manage geotechnical hazards. In accordance with the Geotechnical Element of the Banning General Plan Goals, Policies and Programs, all development proposals within designated Alquist-Priolo Earthquake Fault Zones shall be accompanied by appropriate geotechnical analysis. Based on the geotechnical analysis prepared by the RMA Group in 2014, the following mitigate measure is recommended to reduce impacts:

Mitigation Measure (MM)

MM GEO-1 Fault Setback Zone. Fault Setback Zone. No human structures for human habitation can be built within this zone, however other land uses are permitted.

3.6 (a) (2) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?

Determination: Less Than Significant Impact with Mitigation

Source: RMA Group Geologic Fault Investigation of Alquist-Priolo Zone Report, April 8, 2014

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to seismic ground shaking. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.6-2 The project is required to comply with the California Building Standards Code and City Building Code to preclude significant adverse effects associated with seismic hazards and shall.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The site is expected to experience strong ground shaking from regional seismic activity. Ground shaking should be mitigated by implementation of building code standards and other site specific measures obtained from geotechnical studies of the site. Based on the mitigation pursuant to the RMA Group Study dated April 8, 2014, impacts resulting from seismic impacts to structure will be less than significant with mitigation.

MM GEO-2 Recommended Fault Setback Zone Boundaries. The Project shall adhere to the recommendations and requirements cited in the RMA Group Report dated April 8, 2014 with regard to Fault Setback Zone Boundaries.

3.6 (a) (3) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

Determination: Less Than Significant Impact.

Source: RMA Group Geologic Fault Investigation of Alquist-Priolo Zone Report, April 8, 2014

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to seismic ground shaking. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.6-2 The project is required to comply with the California Building Standards Code and City Building Code to preclude significant adverse effects associated with seismic hazards.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Liquefaction is a phenomenon in which loose, saturated, relatively cohesion-less soil deposits lose shear strength during strong ground motions. The factors controlling liquefaction are:

- Seismic ground shaking of relatively loose, granular soils that are saturated or submerged can cause soils to liquefy and temporarily behave as a dense fluid. For liquefaction to occur, the following conditions have to occur: Intense seismic shaking;
- Presence of loose granular soils prone to liquefaction; and

- Saturation of soils due to shallow groundwater.

According to the RMA Group Geologic Fault Investigation study dated April 2014, the project site is not situated within a known liquefaction hazard area and borings drilled to a maximum depth of 41.5 feet during the preparation of the RMA Study did not encounter groundwater. Consequently, the potential for soil liquefaction at the site appears unlikely.

3.6 (a) (4) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides?

Determination: No Impact.

Source: RMA Group Geologic Fault Investigation of Alquist-Priolo Zone Report, April 8, 2014

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Generally, a landslide is defined as the downward and outward movement of loosened rock or earth down a hillside or slope. Landslides can occur either very suddenly or slowly, and frequently accompany other natural hazards such as earthquakes, floods, or wildfires. Landslides can also be induced by the undercutting of slopes during construction, improper artificial compaction, or saturation from sprinkler systems or broken water pipes.

Due to the relatively low gradient of the site, the massive nature of subsurface soils, the strength of these soils and the absence of known landslides within or immediately adjacent to the site, the potential for land sliding at the site was judged to be low. Based on the RMA Group Geologic Fault Investigation Report dated April 2014, with implementation of PPP 3.6-1, impacts would be less than significant and no mitigation measures are required.

3.6(b) Result in substantial soil erosion or the loss of topsoil?

Determination: Less Than Significant Impact with Mitigation Incorporated.

Sources: Project Application Materials.

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts related to soil erosion. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.6-3 Prior to grading permit issuance, the Project Proponent shall prepare a *Storm water Pollution Prevention Plan*. Project contractors shall be required to ensure

compliance with the Storm water Pollution Prevention Plan and permit periodic inspection of the construction site by City of Banning staff and the State Water Resources Control Board staff.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Soils in the project area have already been disturbed by previous activities. Therefore, the loss of topsoil is not a potential impact.

The eastern third of the project site was previously graded in preparation for construction of a residential subdivision that was not completed. Lots were never finish graded, structures were not built and streets not paved. Several canyons drain off the Banning Bench into the site. The RMA Group Geologic Fault Investigation Study, dated April 2014 cites that debris basins or catchment areas should be evaluated during planning and implemented during development of the tracts as needed. With the following mitigation, impacts should be less than significant.

MM GEO-3. Debris and Catch basins. The Project shall adhere to the recommendations and requirements cited in the RMA Group Report dated April 8, 2014 with regard to the design of catch and debris basins for Lot “B” and “C” and design requirements of the City of Banning Engineering and Public Works Department and WQMP report.

3.6(c) *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 offsite landslide, lateral spreading, subsidence, liquefaction or collapse?*

Determination: Less Than Significant Impact.

Source: RMA Group Geologic Fault Investigation of Alquist-Priolo Zone Report, April 8, 2014, Banning General Plan, Application Materials.

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to an unstable geologic unit. These measures will be included in the Project’s Mitigation Monitoring and Reporting Program:

PPP 3.6-1 The project is required to comply with the California Building Standards Code and City Building Code to preclude significant adverse effects associated with seismic hazards.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is flat and gently sloping and contains no substantial natural or man-made slopes. There is no evidence of on-site landslides on or near the Project site, nor are there any exposed boulders that could result in rock fall hazards. As such, there will be no impacts associated with landslides and rock fall hazards.

Based on the RMA GeoScience Geotechnical Investigation Report dated, June 19, 2015, Soil classification and expansion index indicates that near surface soils have a very low expansion potential. Expansion testing performed in accordance with ASTM D4829 indicates that earth materials underlying the site have an expansion classification of 0. Moreover, due to the relatively low gradient of the site, the dense nature of the older alluvium in the Banning Bench deposits, and absence of known landslides within or immediately adjacent to the site, the potential for land sliding at the site is judged to be low.

However, given the lack of geotechnical reports detailing the construction of the existing fill placed at the eastern half of the site the fill is considered undocumented. The following mitigation are recommended to reduce impacts to a level less than significant.

MM GEO-4. Fill in Graded Eastern Portion of Site. The existing undocumented fill is not adequate for purposes intended and will need to be removed and recompacted.

3.6(d) *Be located on expansive soil, as defined in the Uniform Building Code, creating substantial risks to life or property?*

Determination: Less than Significant Impact.

Source: RMA Group Geologic Fault Investigation of Alquist-Priolo Zone Report, April 8, 2014, Banning General Plan

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to expansive soils. These measures will be included in the Project's Mitigation, Monitoring, and Reporting Program:

PPP 3.6-1 The project is required to comply with the California Building Standards Code and City Building Code to preclude significant adverse effects associated with strong seismic ground shaking.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. The following mitigation will reduce impacts to less than significant.

With implementation of MM GEO-4, impacts associated with expansive soils will be less than significant.

MM GEO-5 General Earthwork and Grading. All Earthwork and grading to be performed in accordance with the 2013 California Building Code and all applicable governmental agency requirements.

3.6(e) *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?*

Determination: No Impact.

Source: RMA Group Geologic Fault Investigation of Alquist-Priolo Zone Report, April 8, 2014, Banning General Plan

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, Programs, or Standard Conditions applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project does not propose the use of septic tanks or alternative waste water disposal systems. The Project would install domestic sewer infrastructure and connect to the City of Banning Sewer District's existing sewer conveyance and treatment system. As such, there are no impacts and no mitigation measures are required.

3.7 GREENHOUSE GAS EMISSIONS

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			■	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			■	

3.7(a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Determination: Less Than Significant Impact.

Source: LSA Associates, Air Quality and Climate Change Study, TTM 36939, September 24, 2015

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to greenhouse gas emissions. These measures will be included in the Project’s Mitigation Monitoring and Reporting Program:

PPP 3.7-1 Prior to issuance of the first residential building permit, the Project Applicant shall submit energy usage calculations in the form of a Title 24 Compliance Report to the City of Banning Building & Safety Department showing that the Project will be constructed in compliance with the most recently adopted edition of the applicable California Building Code Title 24 requirements.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

An individual project cannot generate enough Green House Gases (GHG) emissions to influence global climate change. The Project participates in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of GHGs, which when taken together may have a significant impact on global climate change.

Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation GHG emissions:

- **Construction Activities:** During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment.
- **Gas, Electricity, and Water Use:** Natural gas use results in the emission of two GHGs: CH₄ (the major component of natural gas) and CO₂ (from the combustion of natural gas). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive.
- **Solid Waste Disposal:** Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH₄ from the anaerobic decomposition of organic materials. CH₄ is 25 times more potent a GHG than CO₂. However, landfill CH₄ can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use:** Transportation associated with the proposed project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.

Table 10 lists the annual GHG emissions for each of the planned construction phases and shows that the GHG emissions would be highest during the grading phase, at approximately 120 MT. Total construction GHG emissions thru phase 1 of the construction period are estimated to be 320 MT of CO₂e. Each additional phase would contribute additional GHG emissions, approximately the same as shown for Phase 1 or the sum of 89 MT of CO₂e for construction of the homes (6.0 +83) plus 5.6 MT of CO₂e for the architectural coating processes, or 95 MT of CO₂e.

Long-term operation of the proposed project would generate GHG emissions from area and mobile sources and indirect emissions from stationary sources associated with energy consumption. Mobile-source emissions of GHGs would include project-generated vehicle trips associated with on-site residences. Area-source emissions would be associated with activities such as landscaping and maintenance of proposed land uses, natural gas for heating, and other sources. Increases in stationary-source emissions would also occur at off-site utility providers as a result of demand for electricity, natural gas, and water by the proposed uses.

Table 10 Long-term Operational Localized Impact (lbs/day)

Construction Phase	Total Regional Pollutant Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Site Preparation	39	0.011	0	39
Grading	120	0.035	0	120
Phase 1 of Home Construction	88	0.019	0	89
Architectural Coating	6.1	0.00063	0	6.1
Paving	62	0.018	0	62
Total	320	0.084	0	320

The GHG emission estimates presented in Table 10 show the emissions associated with the level of development envisioned by the full proposed project of 98 homes at build out. It is not known how

many homes would be built in each phases (depend on market demand at the time), thus it is not known how many phases there will be. Assuming a conservative 20 homes per phase would result in five phases. Thus the amortized construction GHG emissions shown in Table 11 reflect this total. As shown in Table 11, the project will produce 2,000 MT/yr of CO₂e. which is 0.002 million metric tons per year (MMT/yr) of CO₂e. For comparison, the existing emissions from the entire SCAG region are estimated to be approximately 176.79 MMT/yr of CO₂e, and the existing emissions for the entire state are estimated at approximately 496.95 MMT/yr of CO₂e.

Table 11: Long-Term Operational Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/yr)					
	Bio-CO ₂	NBio-CO ₂	Total CO ₂	CH ₄	N ₂ O	CO ₂ e
Construction Emissions amortized over 30 Years	0	53	53	0.014	0	53
Operational Emissions						
Area Sources	0	25	25	0.0021	0.00043	25
Energy Sources	0	390	390	0.013	0.0053	390
Mobile Sources	0	1,400	1,400	0.047	0	1,400
Waste Sources	23	0	23	1.4	0	52
Water Usage	2.0	37	39	0.21	0.0053	45
Total Project Emissions	25	1,900	1,900	1.7	0.011	2,000

Because climate change impacts are cumulate in nature, no typical single project can result in emissions of such a magnitude that it, in and of itself, would be significant on a project basis. The project's operational emissions of 2,000 MT/yr of CO₂e are less than the SCAQMD-recommended interim threshold of 3,500 MT/yr of CO₂e for residential uses. Therefore, the proposed project would not result in a significant impact on GHG emissions.

CO Hot Spot Analysis

Given the relatively low level of CO concentrations in the project area, project-related vehicles are not expected to result in the CO concentrations exceeding the State or federal CO standards. Because no CO hot spot would occur, there would be no project-related impacts on CO concentrations.

3.7(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Determination: Less Than Significant Impact.

Source: Air Quality and Climate Change Study for Banning TTM 36939 (LSA Project No. DFD1505), September 24, 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs related to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project's is consistent with the Scoping Plan because its individual greenhouse gas emissions are below significance thresholds and the Project is required to implement such greenhouse as Title 24 Energy Efficiency Requirements. As such, impacts are less than significant and no mitigation measures are required.

Based on the analysis above, with implementation of PPP 3.7-1, impacts would be less than significant.

3.8 HAZARDS AND HAZARDOUS MATERIALS

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			■	
b. 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?			■	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				■
d. Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and, as a result, would it create a significant hazard to the public or the environment?				■
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?			■	
f. For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?				■
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			■	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?		■		

3.8(a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Determination: Less than Significant.

Source: City of Banning General Plan, Hazardous and Toxic Materials Element.

Plans, Policies, or Programs (PPP)

The transport, use, or disposal of hazardous materials in the unlikely event these materials are uncovered shall adhere to the regulations pertaining regulating the handling and transport of these items. The following PP applies to the Project and would reduce impacts relating to this issue. This measure will be included in the Project's Mitigation Monitoring and Reporting Program (MMRP).

PPP 3.8-1 The Project is subject to all applicable federal, state, and local laws and regulations regarding hazardous materials, including but not limited to requirements imposed by the Environmental Protection Agency, California Department of Toxic Substances Control, South Coast Air Quality Management District, and the Santa Ana Regional Water Quality Control Board.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Existing Site Conditions

The construction of single family homes on the proposed project site will not result in significant impacts associated with hazardous materials. The City implements the standards of the Household Hazardous Waste programs through its waste provider. These regulations and standards ensure that impacts to surrounding areas, or within the project itself, are less than significant. Not Mitigation Measures are proposed.

Operational Activities

The Project site would be developed with residential land uses which are land uses not typically associated with the transport, use, or disposal of hazardous materials. Although residential land uses may utilize household products that contain toxic substances, such as cleansers, paints, adhesives, and solvents, these products are usually in low concentration and small in amount and would not pose a significant risk to humans or the environment during transport to/from or use at the Project site.

3.8(b) 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?

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan, Hazardous and Toxic Materials Element.

Plans, Policies, or Programs (PPP)

There are numerous regulations pertaining to the accidental release of hazardous materials. The following PPP applies to the Project and would reduce impacts relating to this issue. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.8-1 The Project is subject to all applicable federal, state, and local laws and regulations regarding hazardous materials, including but not limited requirements imposed by

the Environmental Protection Agency, California Department of Toxic Substances Control, South Coast Air Quality Management District, and the Santa Ana Regional Water Quality Control Board.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Accidents involving hazardous materials that could pose a significant hazard to the public or the environment would be highly unlikely during the construction and long-term operation of the Project and are not reasonably foreseeable. The transport, use, and handling of hazardous materials on the Project site during construction is a standard risk on all construction sites, and there would be no greater risk for upset and accidents than would occur on any other similar construction site.

Upon build-out, the Project site would operate as a residential community, which is a land use type not typically associated with the transport, use, or disposal of hazardous materials that could be subject to upset or accident involving the release of hazardous materials into the environment.

Based on the analysis above, with implementation of PPP 3.8-1, impacts would be less than significant and no mitigation measures are required.

3.8(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Determination: Less Than Significant Impact.

Sources: Project Application Materials, Google Earth.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is located just over a half mile from Calvary Christian School. As noted in the responses to Issue 3.8 (b). The Project site would be developed with residential land uses which is a land use not typically associated with the transport, use, or disposal of hazardous materials nor does such use emit hazardous emissions or handle hazardous or acutely hazardous materials. Therefore, impacts are less than significant.

3.8(d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Determination: No Impact.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. No impact would occur and no mitigation measures are required.

3.8(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?

Determination: Less Than Significant Impact.

Plans, Policies, or Programs (PPP)

There are no Project Design Features applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

This property is not located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property will not be subject to some of the annoyances associated with proximity to airport operations (for example: noise, vibration, or odors).

3.8(f) For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?

Determination: No Impact.

Source: Google Earth. Site Reconnaissance.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is not located within the vicinity of a private airstrip. No impact would occur and no mitigation measures are required.

3.8(g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Determination: Less Than Significant Impact.

Sources: Banning General Plan, Public Services and Facilities, Chapter VI.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Access to the Project site is proposed from Wilson Street, and both Sunset and Sunrise Avenues Drive which will connect to proposed interior street. These three roadways are fully improved. The Project site does not contain any emergency facilities nor does it serve as an emergency evacuation route. During construction and long-term operation, the Project would be required to maintain adequate emergency access for emergency vehicles via Sunrise and Sunset Avenues, and Wilson Street connecting roadways as required by the City. Furthermore, the Project would not result in a substantial alteration to the design or capacity of any public road that would impair or interfere with the implementation of evacuation procedures. Because the Project would not interfere with an adopted emergency response or evacuation plan, impacts are less than significant and no mitigation measures are required.

3.8(h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Determination: Less than Significant with Mitigation

Source: Banning General Plan, Public Services and Facilities, Chapter VI.

Plans, Policies, or Programs (PPP)

PPP 3.8 -2 Residents are required to comply with fuel modification zone requirements adjacent to wildland areas. Fuel modification zones includes both the thinning of native combustible vegetation, as well as the removal and replacement of native vegetation with fire-resistant plant species. "A and B" Zones shall be irrigated and landscaped with fire-resistant drought tolerant plants affecting properties tangent to Lot "A". A mitigation measure will be included that requires that the home shall maintain a minimum 70 foot Fuel Modification Zone.

MM HAZ -1 Fuel Modification Zone: Parcels adjacent to Lot “A” shall maintain a Fuel Modification Zone of 70 feet.

MM HAZ -2 Hazard Plan: The Applicant shall submit a Hazard Analysis Prior to issuance of Building Permits

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The property is located in a fire hazard zone. The guidelines for vegetation management in defensible areas are designed to be a fire prevention partnership between property owners and the City and County to prevent fires. Space near structures that provide natural landscape compatibility with wildlife, water conservation and ecosystem health, defined as a Fuel Modification Zone provides immediate benefits to protect structures and property from wildfires. With implementation of MM HAZ-1, I and MM HAZ -2, impacts should be less than significant.

3.9 HYDROLOGY AND WATER QUALITY

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?			■	
b. 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 level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			■	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite?			■	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or offsite?			■	
e. Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems or provide substantial			■	

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
additional sources of polluted runoff?				
f. Otherwise substantially degrade water quality?			■	
g. Place housing within a 100-year flood hazard as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				■
h. Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				■
i. 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?				■
j. Inundation by seiche, tsunami, or mudflow?				■

3.9(a) Violate any water quality standards or waste discharge requirements?

Determination: Less Than Significant Impact.

Source: Tentative Tract Map 36939, Drainage Study, WQMP

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to water quality and waste discharge requirements. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

- PPP 3.9-1. Prior to grading permit issuance, the Project Proponent shall obtain a National Pollutant Discharge Elimination System permit from the State Resources Control Board. Evidence that a National Pollutant Discharge Elimination System permit has been issued shall be provided to the City of Banning prior to issuance of the first grading permit.
- PPP 3.9-2 Prior to grading permit issuance, the Project Proponent shall prepare a Storm water Pollution Prevention Plan. Project contractors shall be required to ensure compliance with the Storm water Pollution Prevention Plan and permit periodic inspection of the construction site by City of Jurupa Valley staff or its designee to confirm compliance.
- PPP 3.9-3 During construction, Project contractors shall be required to ensure compliance with the Project's Water Quality Management Plan associated with the Project and permit periodic inspection of the construction site by City of Banning staff or its designee to confirm compliance.
- PPP 3.9-4 The Project shall be in compliance with Chapter 13.24, Storm Water Management System, City of Banning Municipal Code.

Project Design Features (PDF)

The following is incorporated into the Project by the applicant, and would reduce impacts related to water quality and discharge requirements. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

- PDF 3.9-1 Tentative Tract Map No. 36939 provides for 53,146 square feet for water quality basin and infiltration. These areas shall be designed to manage water quality runoff to the satisfaction of the City Engineer.

Impact Analysis

Construction

Construction of the Project would involve clearing, grading, paving, utility installation, building construction, and the installation of landscaping, which would result in the generation of potential water quality pollutants such as silt, debris, chemicals, paints, and other solvents with the potential to adversely affect water quality. As such, short-term water quality impacts have the potential to occur during construction of the Project in the absence of any protective or avoidance measures.

Pursuant to the requirements Chapter 13.24 of the City of Banning Municipal Code, the Project would be required to obtain a National Pollutant Discharge Elimination System Municipal Stormwater Permit for construction activities. The National Pollutant Discharge Elimination System permit is required for all Projects that include construction activities, such as clearing, grading, and/or excavation that disturb at least one acre of total land area.

In addition, the Project would be required to comply with the Santa Ana Regional Water Quality Control Board's Santa Ana River Basin Water Quality Control Program. Compliance with the National Pollutant Discharge Elimination System permit and the Santa Ana River Basin Water Quality Control Program involves the preparation and implementation of a Storm Water Pollution Prevention Plan for construction-related activities, including grading. The Storm Water Pollution Prevention Plan would specify the Best Management Practices that the Project would be required to implement during construction activities to ensure that all potential pollutants of concern are prevented, minimized, and/or otherwise appropriately treated prior to being discharged from the subject property.

Operation

Storm water pollutants commonly associated with the land uses proposed by the Project (i.e., residential) include sediment/turbidity, nutrients, trash and debris, oxygen-demanding substances, organic compounds, bacteria and viruses, oil and grease, pesticides, and metals.

Pursuant to the requirements of the City's National Pollutant Discharge Elimination System permit, a Water Quality Management Plan is required for managing the quality of storm water or urban runoff that flows from a developed site after construction is completed and the facilities or structures are occupied and/or operational. A Water Quality Management Plan describes the Best Management Practices that will be implemented and maintained throughout the life of a project to prevent and minimize water pollution that can be caused by storm water or urban runoff.

Based on the analysis above, with implementation of PPP 3.9-1 through PPP 3.9-4 and PDF 3.9-1, impacts would be less than significant and no mitigation measures are required.

3.9(b) 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 level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Determination: Less Than Significant Impact.

Source: Tentative Tract Map 36939, Drainage Study, WQMP

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The sole source of potable water supply is provided by the City of Banning Water Utility Department. More than 30,000 residents in Banning, depend on the Water Utility Department to provide water service to their homes and businesses. By supplying local groundwater pumped from City owned wells the department is able to meet the daily demands of these customers. The department provides plan reviews, design and construction management, for Water Utility projects.

The City’s Water Utility Department does not have an immediate concern with water supply reliability. Because the District’s water supply is groundwater, which is not subject to seasonal or year-to-year climatic change, it is not subject to short-term water shortages resulting from temporary dry weather conditions. The Water Utility Department and other groundwater users in the White Water River have been implementing ongoing groundwater management practices to extend the useful life of the groundwater resource to meet current and future demands. In the foreseeable future, the Water Utility Department will continue to be reliant on local groundwater supplies. The Water Utility Department will develop additional groundwater extraction and groundwater treatment facilities as needed to ensure a continuous and adequate water supply for its service area.

Based on the above analysis, the Project’s demand for domestic water service would not 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 level.

3.9(c) 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, which would result in substantial erosion or siltation on- or offsite?

Determination: Less Than Significant Impact.

Source: Tentative Tract Map 36939, Drainage Study, WQMP

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to soil erosion. This measure will be included in the Project’s Mitigation Monitoring and Reporting Program:

- PPP 3.9-4 The Project shall be in compliance with Chapter 13.24 Storm Water Management System of the Banning Municipal Code.

Project Design Features (PDF)

The following is incorporated into the Project by the applicant, and would reduce impacts related to soil erosion. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PDF 3.9-1 Tentative Tract Map No. 36939 provides for 53,146 square feet for water quality basin and infiltration. These areas shall be designed to manage water quality runoff to the satisfaction of the City Engineer.

Impact Analysis

The Construction of single family homes on the Project site will result in an increase in impermeable surfaces, and therefore an increase in runoff. The proposed Project site is located immediately north of the Montgomery Creek Channel. In accordance with approval of the Banning City Engineer, it will be acceptable to drain to the street via an under sidewalk drain that has been appropriately sized. The WQMP basins must be designed to retain a 100 year, three (3) hour storm event.

Based on the analysis above, with implementation of PPP 3.9-4 and PDF 3.9-1, impacts would be less than significant and no mitigation measures are required.

3.9(d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on-or offsite?

Determination: Less Than Significant Impact.

Source: Tentative Tract Map 36939, Drainage Study, WQMP

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to flooding. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.9-4 The Project shall be in compliance with Chapter 13.24 Storm Water Management System.

Project Design Features (PDF)

The following is incorporated into the Project by the applicant, and would reduce impacts related to flooding. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PDF 3.9-1 Tentative Tract Map No. 36939 provides for 53,146 square feet for water quality basin and infiltration. These areas shall be designed to manage water quality runoff to the satisfaction of the City Engineer.

Impact Analysis

Based on the analysis above, with implementation of PPP 3.9-1 through PPP 3.9 -4 and PDF 3.9-1, impacts would be less than significant and no mitigation measures are required.

3.9(e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Determination: Less than Significant Impact.

Source: Tentative Tract Map 36939, Drainage Study, WQMP

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to drainage capacity and additional sources of polluted runoff. These measures would be included in the Project's Mitigation Monitoring and Reporting Program:

- PPP 3.9-1. Prior to grading permit issuance, the Project Proponent shall obtain a National Pollutant Discharge Elimination System permit from the State Water Resources Control Board. Evidence that a National Pollutant Discharge Elimination System permit has been issued shall be provided to the City of Banning prior to issuance of the first grading permit.
- PPP 3.9-2 Prior to grading permit issuance, the Project Proponent shall prepare a Storm Water Pollution Prevention Plan (SWPPP). Project contractors shall be required to ensure compliance with the SWPPP and permit periodic inspection of the construction site by City of Banning staff or its designee to confirm compliance.
- PPP 3.9-3 During construction, Project contractors shall be required to ensure compliance with Storm Water Pollution associated with the Project and permit periodic inspection of the construction site by City of Banning staff or its designee to confirm compliance.
- PPP 3.9-4 The Project shall be in compliance with Chapter 13.24 Storm Water Management System of the City of Banning Municipal Code.

Project Design Features (PDF)

The following is incorporated into the Project by the applicant, and would reduce impacts related to drainage capacity and additional sources of polluted runoff. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

- PDF 3.9-1 Tentative Tract Map No. 36939 provides for 53,146 square feet for water quality basin and infiltration. These areas shall be designed to manage water quality runoff to the satisfaction of the City Engineer.

Impact Analysis

Water runoff will be directed to the on-site water quality basin and an infiltration pit before discharging into the storm drain system.

Based on the analysis above, with implementation of PPP 3.9-1 through PPP 3.9-4 and PDF 3.9-1, impacts would be less than significant and no mitigation measures are required.

3.9(f) Otherwise substantially degrade water quality?

Determination: Less Than Significant Impact.

Sources: Project Application Materials.

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to water quality. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

- PPP 3.9-1. Prior to grading permit issuance, the Project Proponent shall obtain a National Pollutant Discharge Elimination System permit from the State Water Resources Control Board. Evidence that National Pollutant Discharge Elimination System permit has been issued shall be provided to the City of Banning prior to issuance of the first grading permit.
- PPP 3.9-2. Prior to grading permit issuance, the Project Proponent shall prepare a Storm Water Pollution Prevention Plan. Project contractors shall be required to ensure compliance with the Storm water Pollution Prevention Plan and permit periodic inspection of the construction site by City of Banning staff or its designee to confirm compliance.
- PPP 3.9-3. During construction, Project contractors shall be required to ensure compliance with the Project's SWPPP associated with the Project and permit periodic inspection of the construction site by City of Banning staff or its designee to confirm compliance.
- PPP 3.9-4. The Project shall be in compliance with Chapter 13.24 Storm Water Management System of the City of Banning Municipal Code.

Project Design Features (PDF)

The following is incorporated into the Project by the applicant, and would reduce impacts related to water quality. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

- PDF 3.9-1. Tentative Tract Map No. 36939 provides for 53,146 square feet for water quality basin and infiltration. These areas shall be designed to manage water quality runoff to the satisfaction of the City Engineer.

Impact Analysis

There are no conditions associated with the proposed Project that could result in the substantial degradation of water quality beyond what is described above in Responses 3.9 (a), 3.9(c), and 3.9 (e).

Based on the analysis above, with implementation of PPP 3.9-1 through PPP 3.9-4 and PDF 3.9-1, impacts would be less than significant and no mitigation measures are required.

3.9(g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Determination: No Impact.

Source: FEMA FIRM Panel No. 06065C0706G.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The site is not located in a flood zone as designated by FEMA

3.9(h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Source: FEMA FIRM Panel No. 06065C0706G.

Determination: No Impact.

Plans, Policies, Programs (PPP)

There are no Plans, Policies, Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Refer to Issue 3.9(g) above. The Project area is not within a 100-year flood hazard. No Impact would occur and no mitigation measures are required.

3.9(i) 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?

Source: FEMA FIRM Panel No. 06065C0706G, Banning General Plan

Determination: No Impact.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

As noted Issue 3.9(g), the Project site is not subject to flooding. No dams, levees or water bodies exist in the immediate vicinity of the Project site that could adversely affect the site should a structural failure occur. No impact would occur and no mitigation measures are required.

3.9(j) Inundation by seiche, tsunami, or mudflow?

Determination: No Impact.

Sources: Project Application Materials, Google Earth

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site would not be subject to inundation by a seiche, mudflow, and/or tsunami. No impact would occur and no mitigation measures are required.

3.10 LAND USE AND PLANNING

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?				■
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			■	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?		■		

3.10(a) *Physically divide an established community?*

Determination: No Impact.

Sources: Project Application Materials, Google Earth

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

An example of a Project that has the potential to divide an established community includes the construction of a new freeway or highway through an established neighborhood. The Project site is an in-fill development consisting of 34.6 acres and located within proximity of residential development. Therefore, no impacts would occur with respect to dividing an established community.

3.10(b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

Determination: Less Than Significant Impact.

Source: City of Banning General Plan, Zoning Code.

Plans, Policies, or Programs (PPP)

The applicable plans and policies relating to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the General Plan, Specific Plan, local coastal program, or the zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect are described in the analysis below.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

As demonstrated throughout this Initial Study Checklist/Mitigated Negative Declaration, the Project would otherwise not conflict with any applicable goals, objectives, and policies of the General Plan, or the City of Banning Zoning Ordinance. Additionally, with Mitigation Measure BIO-1, as set forth in this Initial Study/Mitigated Negative Declaration, the Project would not conflict with any applicable policy document, including, without limitation, the Western Riverside Multiple Species Habitat Conservation Plan, South Coast Air Quality Management District's Air Quality Management Plan, Southern California Association of Government's 2012, 2035 Regional Transportation Plan/Sustainable Communities Strategy, and Government's 2008 Regional Transportation Plan. The purposes of these plans are to avoid or mitigate an environmental effect.

In conclusion, the Project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating adverse environmental effects and impacts would be less than significant.

3.10(c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Determination: Less Than Significant With Mitigation Incorporated.

Source: MSHCP Consistency Analysis and Habitat Assessment, Tract 36939, LSA, May 2015.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies or Programs relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP, a regional Habitat Conservation Plan was adopted on June 17, 2003. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. The MSHCP provides

coverage (including take authorization for listed species) for special-status plant and animal species, as well as mitigation for impacts to sensitive species. According to the MSHCP:

- The Project site is not located within an MSHCP Criteria Area (area proposed for conservation).
- The Project site does not contain MSHCP riparian/riverine areas or vernal pools.
- The Project site will not impact any MSHCP Narrow Endemic Plant Species.
- The Project site is not required to comply with the MSHCP Urban/Wildland Interface Guidelines.
- No large burrows were found in the area and the particularly dense ruderal vegetation suggest poor habitat for burrowing owl. However, their presence cannot be ruled out because burrowing owls have been known to occupy disturbed sites. Mitigation is required.

Mitigation Measures (MM)

Mitigation Measure BIO-1 in Section 3.4, Biological Resources of this Initial Study/Mitigated Declaration shall apply.

With implementation of Mitigation Measure BIO-1, impacts will be less than significant.

3.11 MINERAL RESOURCES

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?				■
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				■

3.11(a) 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?

Determination: No Impact.

Sources: City of Banning General Plan, Environmental Resources, Chapter IV

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

No mineral resource extraction activity is known to have ever occurred on the property. According to mapping conducted by the California Geological Survey which maps areas known as Mineral Resources Zones (MRZs), the proposed Project site is mapped within MRZ-3, which is defined as “areas with no known significant mineral deposits.”

The Project site is not located within an area of known to be underlain by regionally- or locally important mineral resources, or within an area that has the potential to be underlain by regionally or locally-important mineral resources, as disclosed by the General Plan. Accordingly, implementation of the proposed Project would not result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the State of California. Accordingly, no impact would occur.

3.11(b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Determination: No Impact.

Sources: City of Banning General Plan, Environmental Resources, Chapter IV

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Refer to the Issue 3.11(a), above. The General Plan does not identify any locally important mineral resource recovery sites on-site or within close proximity to the Project site, nor are any mineral resource recovery operations located on-site or in the surrounding area.

3.12 NOISE

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			■	
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			■	
c. A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?			■	
d. A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?			■	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?				■
f. For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?				■

3.12(a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Determination: Less Than Significant Impact.

Sources: Project Application Materials, Noise Element of the Banning General Plan, Banning Zoning Code, Chapter 8.44, Noise Regulations of the Municipal Code.

Plans, Policies, or Programs (PPP)

The following project apply to the Project and would reduce impacts relating to noise. These measures will be included in the Project’s Mitigation Monitoring and Reporting Program:

PPP 3.12-1 In order to ensure compliance with the Banning Municipal Code Chapter 8.44 Noise Regulations, prior to the issuance of a grading permit, the developer is required to submit a construction-related noise mitigation plan to the City for review and approval. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project. In addition, the plan shall require that the following notes are included on grading plans and building plans. Project contractors shall be required to ensure compliance

with the notes and permit periodic inspection of the construction site by City of Banning staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

a) All construction activities shall comply with Chapter 8.44 (Noise Regulations) of the City of Banning Municipal Code, including but not limited to the requirement that haul truck deliveries shall be limited to between the hours of 6:00am to 6:00pm during the months of June through September and 7:00am to 6:00pm during the months of October through May.

b) Construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards.

c) All stationary construction equipment shall be placed in such a manner so that emitted noise is directed away from any sensitive receptors adjacent to the Project site.

d) Construction equipment staging areas shall be located the greatest distance between the staging area and the nearest sensitive receptors.

PPP 3.12-2 In order to ensure compliance with City of Banning's Noise Ordinance, prior to issuance of any residential building permit, an interior noise analysis shall be completed to the satisfaction of the City Building and Safety Department demonstrating that proposed building materials will achieve interior noise levels less than 45 dBA CNEL.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Development of the Project site as a residential community has the potential to expose persons to or result in elevated noise levels during both short-term construction activities and under long-term conditions. Short-term (i.e., construction) and long-term (i.e., operational) noise impacts associated with the Project are discussed below.

Short-term Construction Noise

The most significant source of short-term noise impact is related to noise generated during construction activities on the Project site which would result in potential noise impacts to nearby sensitive receptors. Construction is performed in discrete steps, each of which has its own mix of equipment and consequently its own noise characteristics. Thus noise levels will fluctuate depending upon construction phase, equipment type, duration of equipment use, distance between the noise source and receptor, and the presence or absence of noise attenuation structures.

As shown on Table 12 below; noise levels generated by heavy construction equipment can range from approximately 75 dBA to 99 dBA when measured at 50 feet.

Table 12. Typical Construction Equipment Noise Levels

Type of Equipment	Range of Sound Levels Measured (dBA at 50 feet)
Pile Drivers	81 to 96
Rock Drills	83 to 99
Jack Hammers	75 to 85
Pneumatic Tools	78 to 88
Pumps	68 to 80
Dozers	85 to 90
Tractors	77 to 82
Front-End Loaders	86 to 90
Graders	79 to 89
Air Compressors	76 to 86
Trucks	81 to 87
<i>Source: "Noise Control for Buildings and Manufacturing Plants", Bolt, Beranek & Newman, 1987, as cited in the General Plan EIR</i>	

However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 75 dBA for a jack hammer measured at 50 feet from the noise source to the receptor would be reduced to 69 dBA at 100 feet from the source to the receptor, and would be further reduced to 63 dBA at 200 feet from the source to the receptor.

Chapter 8.44 of the City of Banning Municipal Code (Noise Regulations) includes a provision that exempts construction activities from any maximum noise level standard, provided that construction activities occur between the hours of 7:00 A.M. and 6:00 P.M. The person engaged in such activity is hereby permitted to exceed sound levels otherwise set forth in this chapter for the duration of the activity during the above described hours for purposes of construction. However, nothing contained herein shall permit any person to cause sound levels to, at any time exceed fifty-five dBA for intervals of more than fifteen minutes per hour as measured in the interior of the nearest occupied residence or school. If the building official should determine that the public health and safety will not be impaired by the construction related noise, the building inspector may issue a permit for construction within the hours of 6:00 P.M. and 7:00 A.M., upon application being made at the time the permit for the work is awarded or during the progress of the work. The building official may place such conditions on the issuance of the permit as to him or her shall seem appropriate to maintain the public health and safety.

Noise Impacts to the Project

The Project is considered a “sensitive receptor” because it is a residential development. Impacts to the Project would be significant if the exterior area of the homes (i.e. yards) would be exposed to noise levels in excess of 55 dBA . For the interior area of the homes impacts would be significant if exposed to noise levels in excess of 45 dBA.

The Project site is located in an area largely characterized by urban development. Residential land uses surround the site on all sides. Noise producing land uses that impact residential uses include, but are not limited to, agriculture uses, industrial uses, commercial uses, and noise from major highways and roads.

The Project site is located adjacent to Golden West Avenue and Opal Street, which are both classified as “Local Streets” and are not considered a major highway or roadway that produces significant levels of traffic noise. As such, impacts are considered to be less than significant.

Noise Impacts Generated by the Project

As established by the General Plan performance standards, project-related noises, as projected to any portion of any surrounding property containing a habitable dwelling, hospital, school, library or nursing home, shall not exceed 55 equivalent level dBA (dBA Leq) between 7 a.m. and 10 p.m. or 45 dBA Leq between 10 p.m. and 7:00 a.m. for a cumulative period of more than fifteen (15) minutes per hour.

The primary source of noise generated by the Project will be from the vehicle traffic generated by the new homes to the nearby residential uses. The Project would generate an estimated additional 933 total trip-ends per day with 73 trips in the AM Peak Hour and 98 trips in the PM Peak Hour.

The City of Banning considers a project to result in a significant traffic-related noise impact if traffic generated by that project would cause or contribute to exterior noise levels at sensitive receptor locations in excess of 55 dBA CNEL and the project’s contribution to the noise environment equals 3.0 dBA CNEL or more. (A change of 3.0 dBA is considered “barely perceptible” by the human ear and changes of less than 3.0 dBA CNEL generally cannot be perceived except in carefully controlled laboratory environments). Due to the low traffic volume and speeds, traffic noise from the Project will not make a significant contribution to the noise environment.

Based on the analysis above, with implementation of PPP 3.12-1 and PPP 3.12-2 impacts would be less than significant.

3.12(b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Determination: Less Than Significant Impact.

Source: Project Application Materials, Noise Element of the Banning General Plan, Banning Zoning Code, Chapter 8.44, Noise Regulations of the Municipal Code.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Construction Vibration

Under existing conditions, there are no known sources of ground-borne vibration or noise that affect the Project site. The Project would not generate ground-borne vibration or ground-borne noise, except, potentially, during the construction phase from the use of heavy construction equipment. The Project will not employ any pile driving, rock blasting, or rock crushing equipment during construction activities, which are the primary sources of ground-borne noise and vibration during construction.

Operational Vibration

There are no conditions associated with the long-term operation of the proposed Project that would result in the exposure of on- or off-site residents to excessive ground-borne vibration or noise. The proposed Project would develop the subject property as a residential community and would not include nor require equipment, facilities, or activities that would generate ground-borne vibration or ground-borne noise. In addition, the Project site is not located in the vicinity of a railroad line or any other use associated with ground-borne vibration or ground-borne noise; therefore, the Project would not expose future on-site residents to substantial ground-borne vibration or noise.

Based on the above analysis, the Project would not expose on- or off-site sensitive receptors to substantial ground-borne vibration or ground-borne noise. Impacts are less than significant and no mitigation is required.

3.12(c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Determination: Less Than Significant Impact.

Source: Project Application Materials, Noise Element of the Banning General Plan, Banning Zoning Code, Chapter 8.44, Noise Regulations of the Municipal Code.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

As discussed above under Issue 3.12(a), the only potential for the Project to create a permanent increase in ambient noise levels is the result of future traffic generated by the proposed Project that has the potential to cause or contribute to elevated traffic-related noise volumes at offsite locations.

The analysis presented under Issue 3.12(a) concluded that the Project's incremental noise contributions to study area roadways would be considered "barely perceptible" (i.e., less than 3.0 dBA CNEL). As such, offsite transportation-related noise impacts would be less than significant and no mitigation is required.

3.12(d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Determination: Less Than Significant Impact.

Sources: Project Application Materials, Noise Element of the Banning General Plan, Banning Zoning Code, Chapter 8.44, Noise Regulations of the Municipal Code.

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to temporary periodic increases in noise. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.12-1 In order to ensure compliance with Municipal Code Chapter 8.44, Noise Regulations, prior to the issuance of a grading permit, the developer is required to submit a construction-related noise mitigation plan to the City for review and approval. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project. In addition, the plan shall require that the following notes are included on grading plans and building plans. Project contractors shall be required to ensure compliance with the notes and permit periodic inspection of the construction site by City of Banning staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

a) All construction activities shall comply with Chapter 8.44 (Noise Regulations) of the Municipal Code, including but not limited to the requirement that haul truck deliveries shall be limited to between the hours of 7:00am to 6:00pm during the months of June through September and 7:00am to 6:00pm during the months of October through May.

b) Construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards.

c) All stationary construction equipment shall be placed in such a manner so that emitted noise is directed away from any sensitive receptors adjacent to the Project site.

d) Construction equipment staging areas shall be located the greatest distance between the staging area and the nearest sensitive receptors.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

As discussed above under Issue 3.12(a), the only potential for the Project to create a substantial temporary or periodic increase in ambient noise levels is during its construction phase. The analysis presented under Issue 3.12(a) concluded that the Project would result in elevated noise levels during construction but were less than significant.

Based on the analysis above, with implementation of PPP 3.12-1, impacts would be less than significant and no mitigation measures are required.

3.12(e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?*

Determination: No Impact.

Source: Project Application Materials, Noise Element of the Banning General Plan, Banning Zoning Code, Chapter 8.44, Noise Regulations of the Municipal Code.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project is not located within an airport's sphere of influence or Avigation easement and there are no Project issues related to this matter.

3.12(f) *For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?*

Determination: No Impact.

Source: Google Earth.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

There are no private airfields or airstrips in the vicinity of the Project site. Accordingly, the Project would have no potential to expose future residents in the Project area to excessive noise levels associated with a private airstrip. No impact would occur and no mitigation measures are required.

3.13 POPULATION AND HOUSING

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			■	
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				■
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				■

3.13(a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Determination: Less than Significant Impact.

Sources: Project Application City of Banning General Plan, Housing Element.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project would be developed with 98 single-family detached residential homes. Pursuant to population estimates prepared by the State Department of Finance, single-family detached units within the City are occupied by an average of 2.9 persons per dwelling unit (*City of Banning General Plan, Housing Element, Page III-127*). Therefore, using population generation estimates provided by the State, the Project could increase the City of Banning’s population by up to 284 new residents if all the new residents currently reside outside the City limits.

Typically, population growth would be considered a significant impact pursuant to CEQA if it directly or indirectly affects the ability of agencies to provide needed public services and requires the expansion or new construction of public facilities and utilities.

Section 3.14, Public Services, of this Initial Study Checklist demonstrates that the impacts on public services is less than significant so the public service providers ability to provide services will not be reduced. As such, impacts are less than significant and no mitigation measures are required.

3.13(b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

Determination: No Impact.

Sources: Project Application City of Banning General Plan, Housing Element

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is vacant and contains no housing. As such, there are no impacts that would require the construction of replacement housing elsewhere. No mitigation measures are required.

3.13(c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

Determination: No Impact.

Sources: Project Application City of Banning General Plan, Housing Element

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, Programs, or Standard Conditions applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project site is vacant and contains no housing. As such, there are no impacts that would require the construction of replacement housing elsewhere.

3.14 PUBLIC SERVICES

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1) Fire protection?			■	
2) Police protection?			■	
3) Schools?			■	
4) Parks?			■	
5) Other public facilities?			■	

3.14(a) *Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

FIRE PROTECTION

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan, Police and Fire Protection Element

Plans, Policies, or Programs (PPP)

There are no Project Design Features applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Buildout of the site will have a less than significant impact on public services. The proposed Project will be served by the City Police Department and Riverside County Fire Department under contract. The project will be required to pay the mandates school fees, development impact fees and park in lieu fees in place at the time of issuance of building permits. Payment of these fees and future revenue stream from property tax will lower potential impacts associated with additional services less than significant impact.

POLICE PROTECTION

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan, Police and Fire Protection Element.

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to police protection. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.14-1 The Project shall comply with applicable City's Development Impact Fees which requires payment of a development mitigation fee to assist in providing funds to offset the incremental increase in the demand for public services, parks and open space that would be created by the Project. Prior to the issuance of building permits the Project Applicant shall pay fees in accordance with the City of Banning Municipal Code Requirements.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The City of Banning Police Department provides community policing to the Project area. The Banning Police Station is located at 125 East Ramsey, approximately two miles from the Project site. The Banning Police Department current level of law enforcement staffing is approximately 1.4 sworn officers for every 1,000 residents. Banning has historically maintained a goal of 1.8 police officers per 1,000 residents. The Banning Police Department has a total of 35 sworn positions, of which three are grant positions and 16 unsworn positions for a total of 51 positions. At full buildout, the Project would introduce approximately 284 new residents to the Project area. The Project's buildout would not affect or alter the current ratio of sworn officers per 1,000 residents. No additional police staffing or the construction of new or expanded police facilities is required.

The Project would be required to comply with the provisions of the City's Development Impact Fee Ordinance, which requires a fee payment to assist the City in providing for public services, including police protection services. Payment of the Development Impact Fee would ensure that the Project provides its fair share of funds for additional police protection services, which is intended, to offset the incremental increase in the demand that would be created by the Project.

Based on the above analysis, with implementation of PPP 3.14-2, impacts related to police protection would be less than significant and no mitigation measures are required.

SCHOOLS

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan, Police and Fire Protection Element

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to schools. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.14-2 Prior to the issuance of building permits, the Project Applicant shall pay required development impact fees to the Banning Unified School District following protocol for impact fee collection.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The construction of 98 residential homes as proposed by the Project would have an incremental increase in the population in the local area and would generate additional demands to the existing public school system by generating additional students to be served by the Banning Unified School District. The Project would be required to contribute fees to the Banning Unified School District in accordance with the Leroy F. Greene School Facilities Act of 1998 (Senate Bill 50). Pursuant to Senate Bill 50, payment of school impact fees constitutes complete mitigation for Project-related impacts to school services.

Based on the above analysis, with implementation of PPP 3.14-2, impacts related to schools would be less than significant and no mitigation measures are required.

PARKS

Determination: Less Than Significant Impact.

Source: City of Banning General Plan Parks and Recreation Element, Open Space and Conservation Element

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to parks. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.14-3 Prior to the issuance of a building permit, the Project Applicant shall pay required park development impact fees to the City of Banning Recreation and Park District.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project proposes the construction of 98 residential units. Based on population estimates prepared by the State Department of Finance, the Project is estimated to provide housing for up to 284 residents (2.9 persons per household x 98 = 284). The Project does not propose any park land so it will be subject to the park land impact fee.

Based on the above analysis, with implementation of PPP 3.14-3, impacts related to parks would be less than significant and no mitigation measures are required.

OTHER PUBLIC FACILITIES

Determination: Less Than Significant Impact.

Source: City of Banning General Plan, Public Building and Facilities Element

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to public services. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.14-2 above is applicable to the Project.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Development of the Project would result in an increase in the population of the Project area and would have an incremental increase the demand for public services, including public health services and library services. However, the population increase generated by the Project would not require the construction of new or expanded public facilities.

The Project would be required to comply with the provisions of the City's Development Impact Fee, which requires a fee payment to assist the City in providing public services. Payment of the Development Impact Fee would ensure that the Project provides fair share of funds for additional public services. These funds may be applied to the acquisition and/or construction of public services and/or equipment.

Based on the above analysis, with implementation of PPP 3.14-1 and 3.14-2, above, impacts related to public services would be less than significant and no mitigation measures are required.

3.15 RECREATION

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			■	
b. Does the Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?			■	

Impact Analysis

3.15(a) *Would the proposed Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

Determination: Less than Significant Impact.

Sources: City of Banning General Plan Parks and Recreation Element

Plans, Policies, or Programs (PPP)

There are no Project Design Features applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project’s 284 estimated residents would not substantially increase the use of existing public park facilities and would not require the modification of existing parks or modification of new park facilities.

With implementation of PDF 3.14-1, impacts related to recreational facilities would be less than significant and no mitigation measures are required.

3.15(b) *Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment?*

Determination: Less than Significant Impact.

Source: Project Application Materials, City of Banning Parks and Recreation Element

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project does not propose any on-site recreational facilities nor does it required the construction or expansion of recreational facilities given its limited population generation (284 residents).

Based on the above analysis, impacts related to parks and recreational facilities would be less than significant and no mitigation measures are required.

3.16 TRANSPORTATION/TRAFFIC

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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 non-motorized 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?			■	
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			■	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			■	
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			■	
e. Result in inadequate emergency access?			■	
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			■	

3.16(a) *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 non-motorized 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?*

Determination: Less Than Significant Impact.

Sources: Focused Traffic Impact for Banning TTM 36939 (LSA Project No. DFD1502), July 28, 2015.

Plans, Policies, or Programs (PPP)

The following apply to the Project and would reduce impacts relating to transportation and traffic. These measures will be included in the Project’s Mitigation Monitoring and Reporting Program:

PPP 3.16-1 Prior to the issuance of any building permits, the Project Proponent shall make pay the City’s Traffic Control Facility Fee per household unit constructed.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Motorized Vehicle Travel

Trips generated by the Project’s proposed land uses have been estimated based on trip generation rates identified in the Focused Traffic Impact Study prepared by LSA, July 28, 2015, shown in Table 12.

Table 12. Trip Generation Rates

Land Use Type	Units	AM Peak Hour			PM Peak Hour			Daily
		Total	In	Out	Total	In	Out	
Single-Family Detached Housing Trips/Unit Land Use Category: 210	98	0.75 73	0.19 18	0.56 55	1.00 98	0.63 62	0.37 36	9.52 933

Source: LSA Associates, Inc. Focused Traffic Impact Study, TTM 36939. July 28, 2015

The Project is estimated to generate the following number of trips:

Based on the Banning General Plan Amendment Change in Level of Service Policy, dated September 2012, the City of Banning establishes Level of Service (LOS) D as the minimum LOS to be maintained on all roadway segments and intersections. Trip generation for the proposed project was calculated using rates from the Institute of Transportation Engineers (ITE) Trip Generation (9th Edition) for Land Use 210 Single-Family Detached Housing. The project trip generation would generate 73 trips in the a.m. peak hour, 98 trips in the p.m. hour and 933 daily trips.

Based on the project’s trip generation, under existing and opening year conditions, the proposed intersection of Sunset Avenue/Dawn Lane and roadway segment on Sunset Avenue between Wilson Street and the proposed Dawn Lane operate at satisfactory LOS or better.

Mass Transit and Pedestrian Facilities

Transit Service

The Project area is currently served by the Banning Transit Services, which provides fixed route bus service along thee (3) routes. The Project is not proposing to construct any improvements and will not interfere with the existing bus service. As such, the Project as proposed will not conflict with an applicable plan, ordinance or policy applying to transit services.

Bicycle & Pedestrian Facilities

The Project is not proposing to construct any improvements that will interfere with bicycle and pedestrian use. The Project will not conflict with an applicable plan, ordinance or policy applying to non-motorized travel. Impacts are less than significant.

Based on the above analysis, with implementation of PPP 3.16-1 would be less than significant and no mitigation measures are required.

3.16(b) *Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

Determination: Less Than Significant Impact.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project proposes only 98 lots and would generate less than 933 daily trips on intersections in the vicinity of the Project site. As such, the Project is not forecast to deteriorate the minimum Level of Service in the Project area as required by the General Plan. Therefore, the Project will not be in conflict with the City of Banning's Congestion Management Program. Impacts are less than significant and no mitigation measures are required.

3.16(c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

Determination: Less Than Significant Impact.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project does not include any air travel component (e.g., runway, helipad, etc.) Accordingly, the Project would not have the potential to affect air traffic patterns, including an increase in traffic

levels or a change in flight path location that results in a substantial safety risk. Therefore, impacts are less than significant.

3.16(d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Determination: Less Than Significant Impact.

Source: Project Application Materials, Focused Traffic Impact for Banning TTM 36939 (LSA Project No. DFD1502), July 28, 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The residential land uses proposed Project would be compatible with existing development in the surrounding area; therefore, implementation of the Project would not create a transportation hazard as a result of an incompatible use.

The Project would provide adequate vehicular and pedestrian safety and ensure that no hazardous transportation design features would be introduced by the Project. Accordingly, the Project would not substantially increase hazards due to a design feature or incompatible use. Impacts would be less than significant.

3.16(e) Result in inadequate emergency access?

Determination: Less Than Significant Impact.

Source: Project Application Materials, Focused Traffic Impact for Banning TTM 36939 (LSA Project No. DFD1502), July 28, 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Project would result in a new residential community, which would increase the need for emergency access to-and-from the site. Adequate emergency access would be provided to the Project site via Wilson Street. During the course of the required review of the Project, the Project's transportation design was reviewed by the City's Public Works/Engineering Department, County Fire Department,

and City of Banning Police Department to ensure that adequate access to and from the site would be provided for emergency vehicles. With the City/County requirements for emergency vehicle access, impacts would be less than significant and no mitigation measures are required.

3.16(f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Determination: Less Than Significant Impact.

Source: General Plan Circulation Element, Project Application Materials, Focused Traffic Impact for Banning TTM 36939 (LSA Project No. DFD1502), July 28, 2015

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project as proposed will not conflict with an applicable plan, ordinance or policy applying to transit services. Impacts are less than significant.

3.17 UTILITIES AND SERVICE SYSTEMS

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			■	
b. 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?			■	
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			■	
d. Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?			■	
e. Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?			■	
f. Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?			■	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			■	

3.17(a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Determination: Less Than Significant Impact.

Source: City of Banning General Plan, Water, Wastewater and Utilities Element

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to wastewater treatment requirements. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

- PPP 3.17-1 As per Title 16 of the City of Banning Municipal Code Subdivision section, prior to recordation of a Final Map, improvement plans shall be submitted to the City Engineer that provide for sewage disposal by connection to an existing collection

system capable of accepting the waste load. The collection system shall meet the City of Banning Utility Department standards and requirements.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Wastewater treatment and collection services would be provided to the Project site by the City of Banning Public Works and Utilities Department. The Banning Public Works and Utilities Department is required to operate all of its treatment facilities in accordance with the waste treatment and discharge standards and requirements set forth by the Colorado River Regional Water Quality Control Board.

Wastewater generated by the Project will be treated at the Banning Waste Water Treatment Plant. The Project would not install or utilize septic systems or alternative wastewater treatment systems, therefore, the Project would have no potential to exceed the applicable wastewater treatment requirements established by the Colorado River Regional Water Quality Control Board or Banning Waste Water Treatment Plan specifications. Accordingly, impacts would be less than significant.

3.17(b) *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?*

Determination: Less Than Significant Impact.

Sources: Project Application Materials, Water & Sewer Letter-Rubidoux Community Services District.

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

The Project would construct an on-site network of water and sewer pipes which would connect to the existing 18 inch water line in Wilson Street and an 8-inch sewer line in Sunrise Avenue. An 18-inch water line exists on Sunset and 12-inch sewer line. The installation of water and sewer lines as proposed by the Project would result in physical impacts to the surface and subsurface of the Project site. These impacts are considered to be part of the Project's construction phase and are evaluated throughout this Initial Study Checklist. In instances where impacts have been identified for the Project's construction phase, Plans, Policies, Programs, or Standard Conditions (PPP), Project Design Features (PDF), or Mitigation Measures (MM) are required to reduce impacts to less-than-significant levels. Accordingly, additional measures beyond those identified throughout this Initial Study Checklist would not be required.

Based on the above analysis, impacts would be less than significant and no mitigation measures are required.

3.17(c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan, Water, Wastewater and Utilities Element

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, or Programs applicable to the Project relating to this issue

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Drainage patterns will generally follow the existing frontage Wilson Street public street gutter and remain as in the existing condition.

The construction of the on-site drainage facilities would result in physical impacts to the surface and subsurface of the Project site. The Project will provide for drainage to the street via an under sidewalk drain that has been appropriately sized. Project engineers shall be required to design the WQMP basins to retain the 100yr – 3 hour storm event provided on site. These impacts are part of the Project’s construction phase and are evaluated in the appropriate sections of this Initial Study/Mitigated Negative Declaration document. In instances where impacts have been identified for the Project’s construction phase, Plans, Policies, Programs, or Standard Conditions (PPP), Project Design Features (PDF), or Mitigation Measures are required to reduce impacts to less-than-significant levels. Accordingly, additional measures beyond those identified throughout this Initial Study Checklist would not be required.

Based on the above analysis, impacts would be less than significant and no mitigation measures are required.

3.17(d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan, Water, Wastewater and Utilities Element

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to water supply requirements. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.17-2 Prior to recordation of a Final Map, required improvement plans shall be submitted to the satisfaction of the City Engineer that provide for the installation of a domestic water supply and distribution system that meets the requirements per the City of Banning Public Services and Utility requirements.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Utilities are available at the project site. The service providers for water, sewer, electricity and other utilities have facilities in the immediate vicinity of the site, and will collect connection and usage fees to balance for the cost of providing services. The project will control on-site storm water to the satisfaction of the City Engineer (please see Hydrology, above). The City's solid waste hauler will continue to implement the requirements of AB 939, requiring the reduction of the solid waste stream. The construction of the proposed project is expected to have less than significant impacts on utility providers.

3.17(e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan, Water, Wastewater and Utilities Element

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to water supply requirements. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.17-3 Prior to the issuance of a grading permit, the Project Proponent shall be required to provide written verification to the City of Banning Public Works Department that adequate capacity exists at the City of Banning Water Control Plant to serve the Project. All water and sewer connection fees shall be paid prior to the issuance of a building permit.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Sanitary sewer service to the Project site would be provided by the Banning Waste Water Treatment Plant.

Based on the above analysis, with implementation of PPP 3.17-3, impacts would be less than significant and no mitigation measures are required.

3.17(f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?

Determination: Less Than Significant Impact.

Sources: (City of Banning General Plan)

Plans, Policies, or Programs (PPP)

There are no Plans, Policies, Programs, or Standard Conditions applicable to the Project relating to this issue

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Impact Analysis

Construction Related Impacts

Waste generated during the construction phase of the Project would primarily consist of discarded materials from the construction of streets, common areas, infrastructure installation, and other project-related construction activities. The City of Banning Contracts with Waste Management Inland Empire for solid waste and disposal services. Construction debris and waste is taken to the Lamb Canyon Sanitary Land fill, El Sobrante Landfill and the Badlands Landfill for disposal.

The California Integrated Waste Management Board (CIWMB) database cites that Lamb Canyon Sanitary Landfill occupies an area of 1,088 acres for all of its land fill operations and has a total permitted disposal volume of 23,601,596 cubic yards and permit to accept a maximum of 1,900 ton of solid waste per day. CIWMB estimates that that the Lamb Canyon Sanitary Landfill had a remaining capacity of 16,926,000 cubic yards in 1998. The El Sobrante Landfill operated by Waste Management encompasses a total of 1,322 acres and has a total permitted disposal volume of 184,930,000 cubic yards. On a daily basis, this landfill is permitted to accept a maximum of 10,000 tons of solid waste. CIWMB estimates that as of 2001, the El Sobrante Landfill has an estimated remaining capacity of 3,674,267 cubic yards.

Operational Related Impacts

Solid waste generated during long-term operation of the Project would be disposed at the Lamb Canyon Sanitary Landfill and/or the El Sobrante Landfill. During long-term operation, the Project's solid waste would be a minuscule amount of the daily permitted disposal capacity at the Lamb Canyon Sanitary Landfill and El Sobrante Landfill.

These landfills receive well below their maximum permitted daily disposal volume, and solid waste generated by the Project is not anticipated to cause these landfills to exceed their maximum permitted daily disposal volume. Because the proposed Project would generate a relatively small amount of solid waste per day, as compared to the permitted daily capacities for Lamb Canyon Sanitary Landfill and the El Sobrante Landfill, these regional landfill facilities would have sufficient daily capacity to accept solid waste generated by the Project.

Based on the above analysis, impacts would be less than significant and no mitigation measures are required.

3.17(g) Comply with federal, state, and local statutes and regulations related to solid waste?

Determination: Less Than Significant Impact.

Sources: City of Banning General Plan

Plans, Policies, or Programs (PPP)

The following applies to the Project and would reduce impacts relating to solid waste. This measure will be included in the Project's Mitigation Monitoring and Reporting Program:

PPP 3.17-4 The California Waste Management Act (AB 939) requires municipalities to reduce the amount of waste it sends to landfills by 50%. The Project shall participate in

established Citywide recycling programs in response to AB 92. Individuals may also participate through privately run recycling operators.

Impact Analysis

The California Integrated Waste Management Act established an integrated waste management system that focused on source reduction, recycling, composting, and land disposal of waste. In addition, the Act established a 50% waste reduction requirement for cities and counties by the year 2000, along with a process to ensure environmentally safe disposal of waste that could not be diverted.

The Project's Proponent would be required to coordinate with the waste hauler to develop collection of recyclable materials for the Project on a common schedule as set forth in applicable local, regional, and State programs. Recyclable materials that would be recycled by the Project include paper products, glass, aluminum, and plastic.

Additionally, the Project's waste hauler would be required to comply with all applicable local, State, and Federal solid waste disposal standards, thereby ensuring that the solid waste stream to the landfills that serve the Project are reduced in accordance with existing regulations.

Based on the above analysis, with implementation of PPP 3.17-4, impacts would be less than significant and no mitigation measures are required.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

<i>Would the Project:</i>	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		■		
b. Does the Project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a 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)?		■		
c. Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			■	

Impact Analysis

3.18(a) *Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

Determination: Less Than Significant Impact with Mitigation Incorporated.

Source: This Initial Study Checklist.

As noted in the analysis throughout this Initial Study Checklist/Mitigated Negative Declaration document, the following apply to the Project and would reduce impacts relating to this issue. These measures will be included in the Project’s Mitigation Monitoring and Reporting Program:

Plans, Policies, or Programs (PPP)

PPP 3.4-1, PPP 3.4-2, and PPP 3.5-1 shall apply.

Project Design Features (PDF)

There are no Project Design Features applicable to the Project relating to this issue.

Mitigation Measures (MM)

Mitigation Measures BIO-1 through BIO-3, CR-1, CR-2, and CR-3 shall apply.

Impact Analysis

All impacts to the environment, including impacts to habitat for fish and wildlife species, fish and wildlife populations, plant and animal communities, rare and endangered plants and animals, and historical and pre-historical resources were evaluated as part of this Initial Study Checklist.

In instances where impacts have been identified, the Plans, Policies, or Programs, Project Design Features, or Mitigation Measures listed above are required to reduce impacts to less than significant levels. Therefore, Project would not substantially degrade the quality of the environment.

3.18(b) *Does the Project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a 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)?*

Determination: Less Than Significant With Mitigation Incorporated.

Source: This Initial Study Checklist.

As noted in the analysis throughout this Initial Study Checklist/Mitigated Negative Declaration document, the following apply to the Project and would reduce impacts relating to this issue. These measures will be included in the Project’s Mitigation Monitoring and Reporting Program:

Plans, Policies, or Programs (PPP)

All Plans, Policies, or Programs (PPP) identified in this Initial Study Checklist/Mitigated Negative Declaration shall apply.

Project Design Features (PDF)

All Project Design Features (PDF) identified in this Initial Study Checklist/Mitigated Negative Declaration shall apply.

Mitigation Measures (MM)

All Mitigation Measures (MM) identified in this Initial Study Checklist/Mitigated Negative Declaration shall apply.

Impact Analysis

As discussed throughout this Initial Study Checklist, implementation of the proposed Project has the potential to result in effects to the environment that are individually limited, but cumulatively considerable. In instances where impacts have been identified, the Plans, Policies, or Programs, Project Design Features, or Mitigation Measures, listed above are required to reduce impacts to less than significant levels. Therefore, the Project would not contribute to environmental effects that are individually limited, but cumulatively considerable.

3.18(c) *Does the Project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?*

Determination: Less Than Significant Impact.

As noted in the analysis throughout this Initial Study Checklist/Mitigated Negative Declaration document, the following apply to the Project and would reduce impacts relating to this issue. These measures will be included in the Project's Mitigation Monitoring and Reporting Program:

Plans, Policies, or Programs (PPP)

The following shall apply:

PPP 3.1-1 through 3.1.3
PPP 3.3-1 and 3.3-2
PPP 3.4-1
PPP 3.5-1
PPP 3.6-1 through 3.6-3
PPP 3.7-1
PPP 3.8-1 and 3.8-2
PPP 3.9-1 through 3.9-4
PPP 3.12-1 and 3.12-2
PPP 3.14-1 through 3.14-3
PPP 3.17-1 through 3.17-4

Project Design Features (PDF)

The following shall apply:

PDF 3.9-1

Mitigation Measures (MM)

The following shall apply:

MM-BIO -1 and MM BIO-2
MM CR-1, MM CR-2, AND MM CR-3
MM GEO-1 through MM GEO-5
MM HAZ-1 and MM HAZ -2

Impact Analysis

The Project's potential to result in environmental effects that could adversely affect human beings, either directly or indirectly, has been discussed throughout this Initial Study Checklist/Mitigated Negative Declaration.

In instances where impacts have been identified, the Plans, Policies, or Programs, Project Design Features are required to reduce impacts to less-than-significant levels. Therefore, the Project would not result in environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly.

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Banning, CA 92220

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Appendix A

**MSHCP CONSISTENCY ANALYSIS AND
HABITAT ASSESSMENT**

**BANNING TRACT 36939 PROJECT
CITY OF BANNING
RIVERSIDE COUNTY, CALIFORNIA**

LSA

May 2015

**MSHCP CONSISTENCY ANALYSIS AND
HABITAT ASSESSMENT**

**BANNING TRACT 32429 PROJECT
CITY OF BANNING
RIVERSIDE COUNTY, CALIFORNIA**

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LSA

May 2015

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 PROJECT LOCATION AND DESCRIPTION.....	1
3.0 BACKGROUND	1
3.1 Western Riverside County Multiple Species Habitat Conservation Plan.....	1
3.2 Jurisdictional Waters and Streambeds.....	4
3.3 Migratory/Nesting Birds.....	4
4.0 METHODS	4
4.1 Literature Review	4
4.2 Field Surveys.....	5
5.0 EXISTING SETTING	5
5.1 Existing and Adjacent Land Use.....	5
5.2 Topography and Soils.....	5
5.3 Vegetation	7
5.4 Wildlife.....	7
6.0 RESULTS AND RECOMMENDATIONS	7
6.1 MSHCP Consistency Analysis.....	7
6.2 Jurisdictional Waters and Streambeds.....	13
6.3 Migratory/Nesting Birds.....	14
6.4 Stephens' Kangaroo Rat.....	14
7.0 CONCLUSIONS	15
8.0 REFERENCES	16

FIGURES

Figure 1: Regional and Project Location.....	2
Figure 2: Site Plan	3
Figure 3: Soils	6
Figure 4: Vegetation, Land Use and Photograph Locations.....	8
Figure 5: Site Photographs	9
Figure 6: MSHCP Survey Areas	12

TABLES

Table A: MSHCP Consistency Checklist.....	13
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APPENDICES

- A: PLANT AND WILDLIFE SPECIES OBSERVED
- B: MSHCP NARROW ENDEMIC PLANT SURVEY SPECIES

1.0 INTRODUCTION

LSA Associates, Inc. (LSA) has conducted a Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) consistency analysis for the approximately 35-acre Banning Tract 36939 Project site located in the City of Banning, Riverside County California. This report includes a focused survey for burrowing owl (*Athene cunicularia hypugea*); a habitat assessment for MSHCP plants, specifically Narrow Endemic Plant Species Survey Area (NEPSSA) species; and analysis of other constraints, specifically with regard to nesting birds.

2.0 PROJECT LOCATION AND DESCRIPTION

The project site consists of the following Assessor's Parcel Numbers (APNs): 535-430-001 through 535-430-021, 535-431-001 through 535-431-015, 535-432-001 through 535-432-017, 535-070-004, and 535-070-006. It is located northeast of the intersection of Wilson Avenue and Sunset Avenue, as depicted on the U.S. Geological Survey (USGS) 7.5-minute *Beaumont, California* quadrangle in projected Section 5, Township 3 South, Range 1 East (Figure 1).

The project proposes to construct 98 single-family residential units. Figure 2 depicts the proposed project's site plan.

3.0 BACKGROUND

3.1 Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP provides for the assembly of a Conservation Area consisting of Core Areas and Linkages for the conservation of Covered Species (Riverside County 2003). Covered Species are 146 species of plants and animals of various federal and state listing statuses. The Conservation Area is to be assembled from portions of the MSHCP Criteria Area, which consists of quarter-section (i.e., 160-acre) Criteria Cells, each with specific criteria for species conservation within that cell. The MSHCP provides an incentive-based program, the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) for adding land to the MSHCP Conservation Area. If it is determined that all or a portion of the property is needed for inclusion in the MSHCP Conservation Area, then various incentives may be available to the property owner in exchange for the conveyance of a property interest.

The MSHCP requires focused surveys for certain plant and animal species for project sites located within designated plant and animal survey areas when potential suitable habitat is present. For instance, surveys for Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*) may be required in areas having Delhi soils. The MSHCP also requires that an assessment be completed to determine the effects of the project on riparian/riverine areas and vernal pools, and associated protected species in accordance with MSHCP Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools.

Projects located in proximity to an MSHCP Conservation Area may result in edge effects that could adversely affect biological resources within the MSHCP Conservation area. These edge effects must be addressed according to the Urban/Wildlands Interface Guidelines (MSHCP Section 6.1.4).

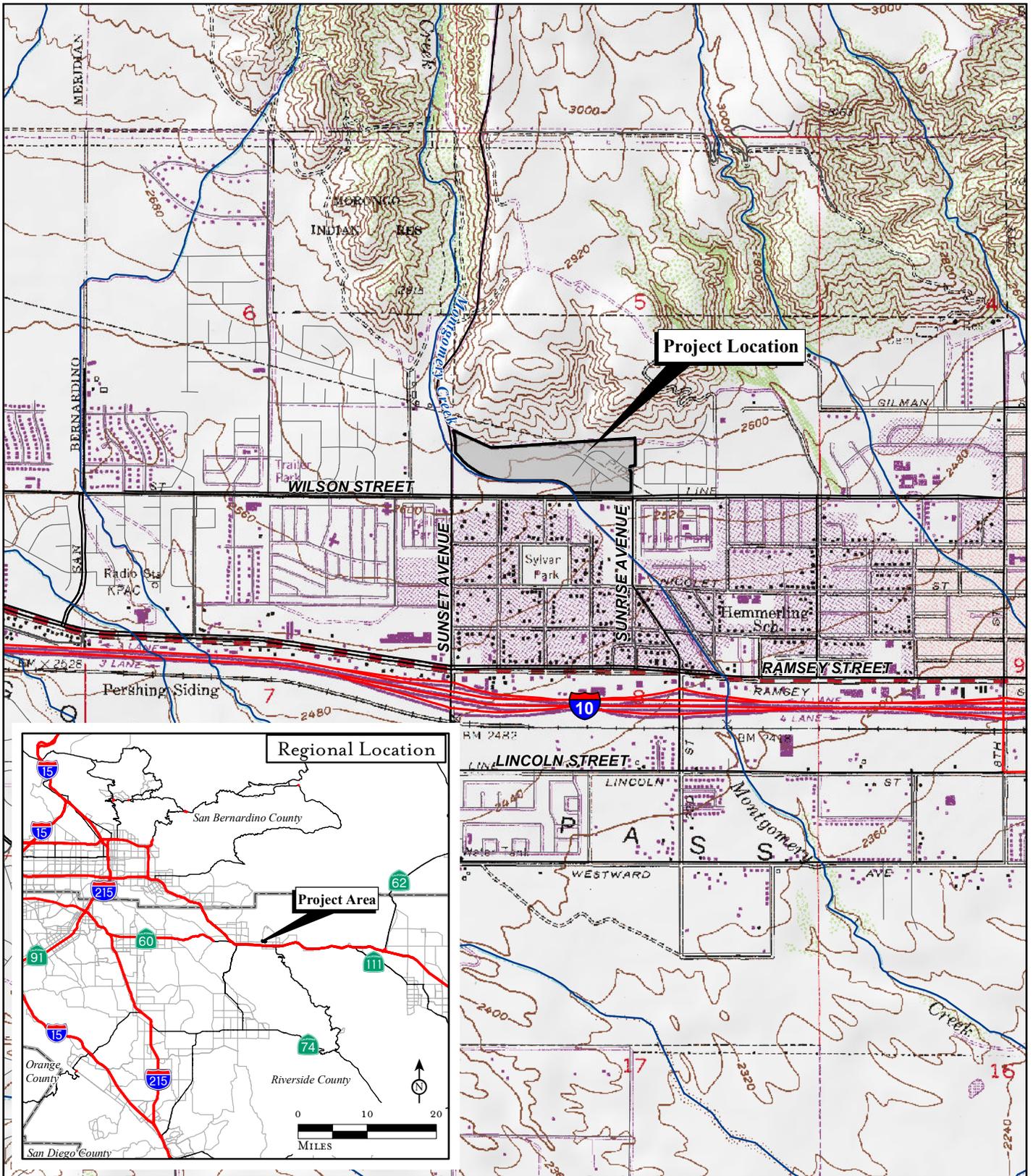
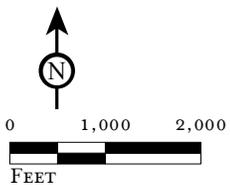


FIGURE 1

LSA



*Banning Tract 36939
Biological Resources Assessment*

Regional and Project Location

SOURCE: USGS 7.5' Quad: Beaumont, 1988, CA; County of Riverside, 2015; National Hydrography Dataset, 2010.

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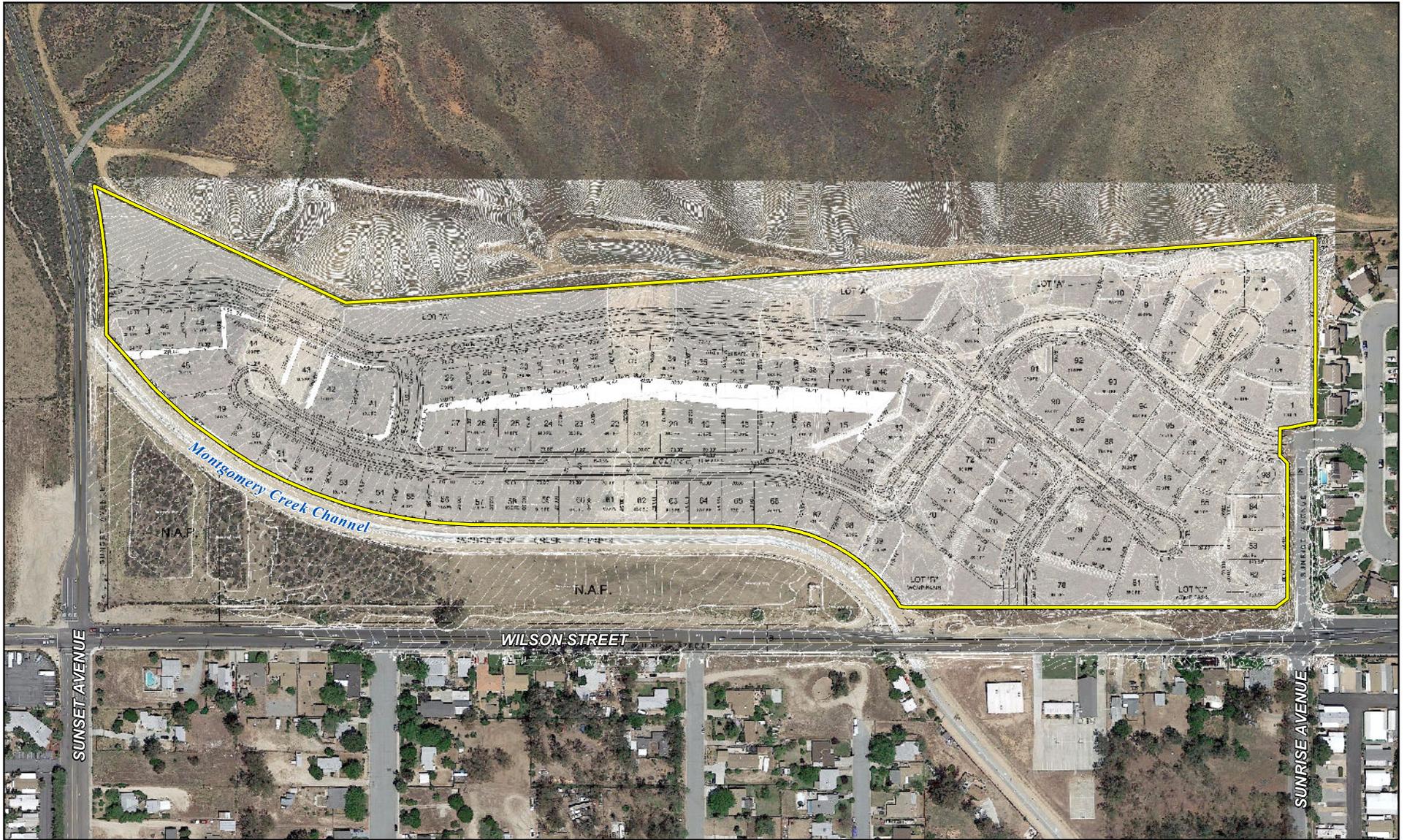
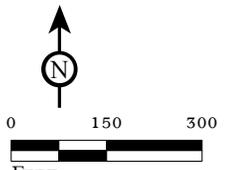


FIGURE 2

LSA



 Project Boundary

*Banning Tract 36939
MSHCP Consistency Report*

Site Plan

3.2 Jurisdictional Waters and Streambeds

The U.S. Army Corps of Engineers (USACE), under Section 404 of the Federal Clean Water Act (CWA), regulates discharges of dredged or fill material into “waters of the United States.” These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a connection to interstate or foreign commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or it may be indirect (through a connection identified in USACE regulations). The USACE typically regulates as non-wetland waters of the U.S. any body of water displaying an “ordinary high water mark” or OHWM. In order to be considered a jurisdictional wetland under Section 404, an area must possess hydrophytic vegetation, hydric soils, and wetland hydrology.

The California Department of Fish and Wildlife (CDFW), under Sections 1600 et seq. of the California Fish and Game Code, regulates alterations to lakes, rivers, and streams. A stream is defined by the presence of a channel bed and banks, and at least an occasional flow of water. The CDFW also regulates habitat associated with the streambed, such as wetland, riparian shrub, and woodlands.

The Regional Water Quality Control Board (RWQCB) is responsible for the administration of Section 401 of the CWA, through water quality certification of any activity that may result in a discharge to jurisdictional waters of the U.S. The RWQCB may also regulate discharges to “waters of the State,” including wetlands, under the California Porter-Cologne Water Quality Control Act.

3.3 Migratory/Nesting Birds

The burrowing owl and other nesting bird species are protected by California Fish and Game Code Sections 3503 and 3503.5 and by the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711), which make it unlawful to take, possess, or needlessly destroy the nest or eggs of any migratory bird or bird of prey.

4.0 METHODS

4.1 Literature Review

A literature review was conducted to determine the existence or potential occurrence of special-status plant and animal species on the project site and in the project vicinity. Database records for the *Beaumont, California* USGS 7.5-minute series quadrangle and surrounding quadrangles were searched on May 1, 2015, using the CDFW California Natural Diversity Data Base *Rarefind 5* online application (<https://map.dfg.ca.gov/rarefind/>) and the California Native Plant Society’s *Inventory of Rare and Endangered Plants* (<http://www.cnps.org/inventory>). The Riverside County Integrated Project (RCIP) Conservation Summary Report (http://onlineservices.rctlma.org/content/rcip_report_generator.aspx) was queried to determine habitat assessment and potential survey requirements for the site, as well as Volume 1, Parts 1 and 2 of the MSHCP (Riverside County Transportation and Land Management Agency 2003). Soil information was taken from electronic data provided by Soil Data Mart (Natural Resource Conservation Service 2003). Current and historical aerial photographs were also reviewed in Google Earth (Google Earth 2015).

4.2 Field Surveys

A general reconnaissance-level field survey was conducted on May 5, 2015, by LSA Senior Biologists Claudia Bauer and Sarah Barrera between the hours of 1115 and 1305. The weather during the survey was cool with clear skies with the exception of some scattered high clouds, temperature in the mid-60 degrees Fahrenheit, and mild winds (approximately 8 miles per hour). During the survey, the biologists assessed habitat for the burrowing owl, NEPSSA plants, and other special status species identified in the literature review. The site was also evaluated for the presence of nesting habitat for migratory birds. The survey area included the proposed project footprint as shown in previously referenced Figure 2.

The entire survey area was surveyed on foot. Notes were taken on general site conditions, vegetation, and suitability of habitat for various special-interest elements. All plant and animal species observed or otherwise detected during this field survey were noted and are listed in Appendix A.

MSHCP Plants Habitat Assessment. A habitat assessment for NEPSSA plants, specifically Area 8 species, was conducted during the May 5, 2015, field survey. Habitat requirements for these species were reviewed prior to the site visit. During the survey, the site was analyzed for the presence of suitable habitats and/or soils to support these species.

Burrowing Owl Survey. A survey was conducted for the burrowing owl in conjunction with the general biological field survey on May 5, 2015. The survey was conducted by walking over suitable habitat within the project site in transects spaced at approximately 50 feet, which allowed for 100 percent visual coverage. Any potential burrowing owl burrows encountered during the survey were examined for owl sign (e.g., feathers, pellets, whitewash, and prey remnants).

5.0 EXISTING SETTING

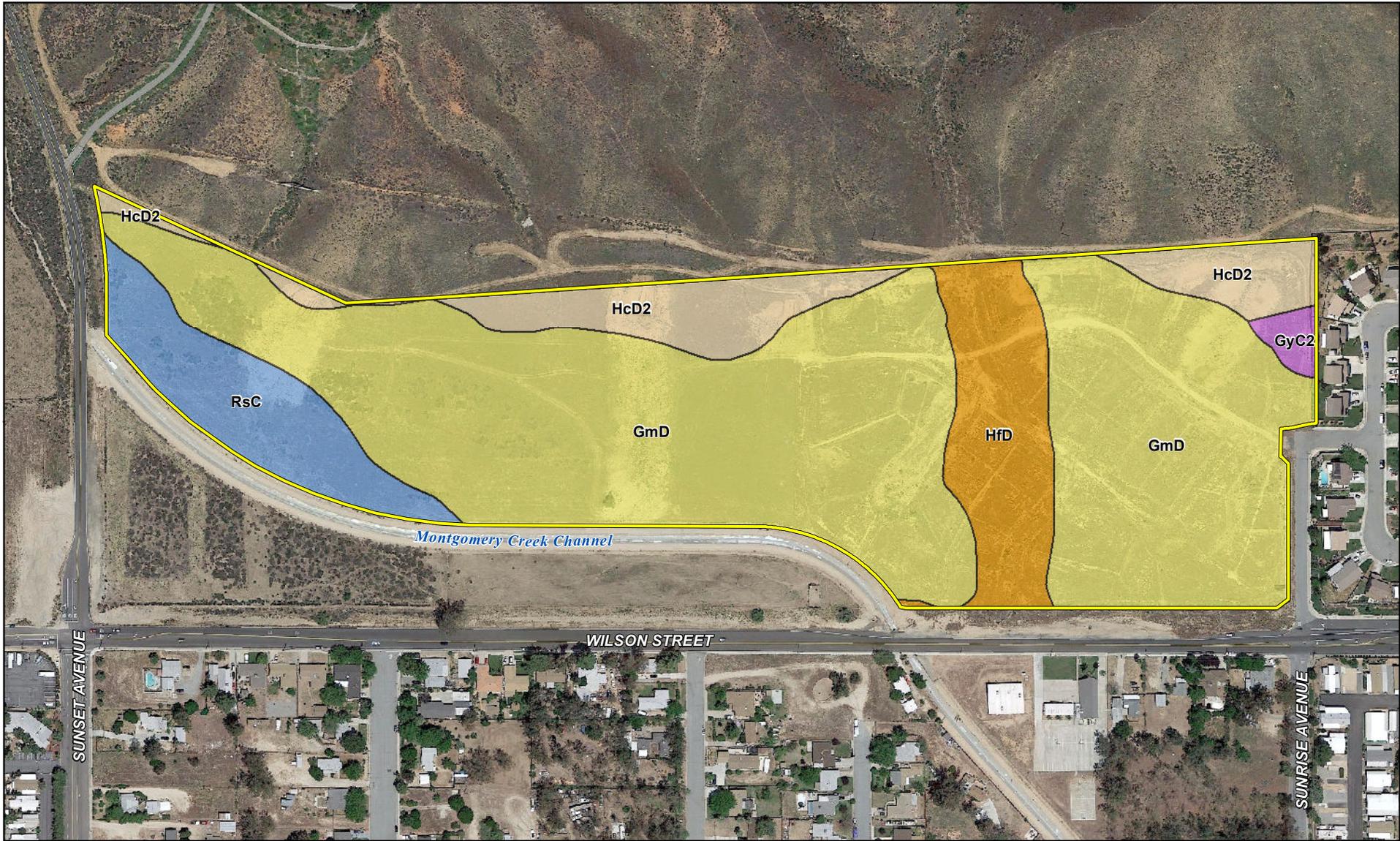
5.1 Existing and Adjacent Land Use

The project site is situated at the northeast corner of Wilson Avenue and Sunset Avenue in the City of Banning. The site is undeveloped, but the eastern half of the project site had previously been graded for home sites as late as 2009. The entire project site has been dormant since that time. The site is bordered on the west and north by undeveloped open space, and to the east and south by single-family homes and rural residences.

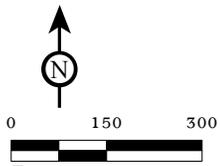
5.2 Topography and Soils

The historical topography of the project site is relatively flat with slight, hilly undulations. The site slopes gently to the south. This topography still exists at the west end of the project site; however, the east end of the project site has been graded for home sites and the topography has been altered to have elevated plateaus for tiered lots. The general elevation of the site ranges from approximately 2,550 to 2,650 feet above mean sea level.

The soils within the project site, as shown in Figure 3, include the following:



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SOURCE: Google Earth, 2014; Soil Data Mart, 2003.

Project Boundary

Soil Types

- GmD: Gorgonio gravelly loamy fine sand, 2 to 15 percent slopes
- GyC2: Greenfield sandy loam, 2 to 8 percent slopes, eroded
- HcD2: Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
- HfD: Hanford sandy loam, 2 to 15 percent slopes
- RsC: Riverwash

FIGURE 3

*Banning Tract 36939
MSHCP Consistency Report*

Soils

- Gorgonio gravelly loamy fine sand, 2 to 15 percent slopes;
- Greenfield sandy loam, 2 to 8 percent slopes, eroded;
- Hanford coarse sandy loam, 8 to 15 percent slopes, eroded;
- Hanford sandy loam, 2 to 15 percent slopes; and
- Riverwash.

5.3 Vegetation

The study area is highly disturbed due to past and current land use practices. As a result of the disturbance caused by these land use practices, the vegetation on the project site is dominated by ruderal vegetation. The east side of the project site consists almost solely of Russian thistle (*Salsola tragus*) and the west side of the project site consists primarily of non-native grasslands where red brome (*Bromus madritensis*), ripgut brome (*Bromus diandrus*), and wild oat (*Avena fatua*) are dominant. Small isolated polygons of California buckwheat (*Eriogonum fasciculatum*) and California sagebrush (*Artemisia californica*) are dispersed within the non-native grasses on the western half of the project site. Three Mexican elderberry (*Sambucus mexicana*) trees are located along the southwestern boundary of the site. A complete list of plant species observed on the site is included as Appendix A.

Figure 4 shows vegetation and land use. Site photographs are provided as Figure 5.

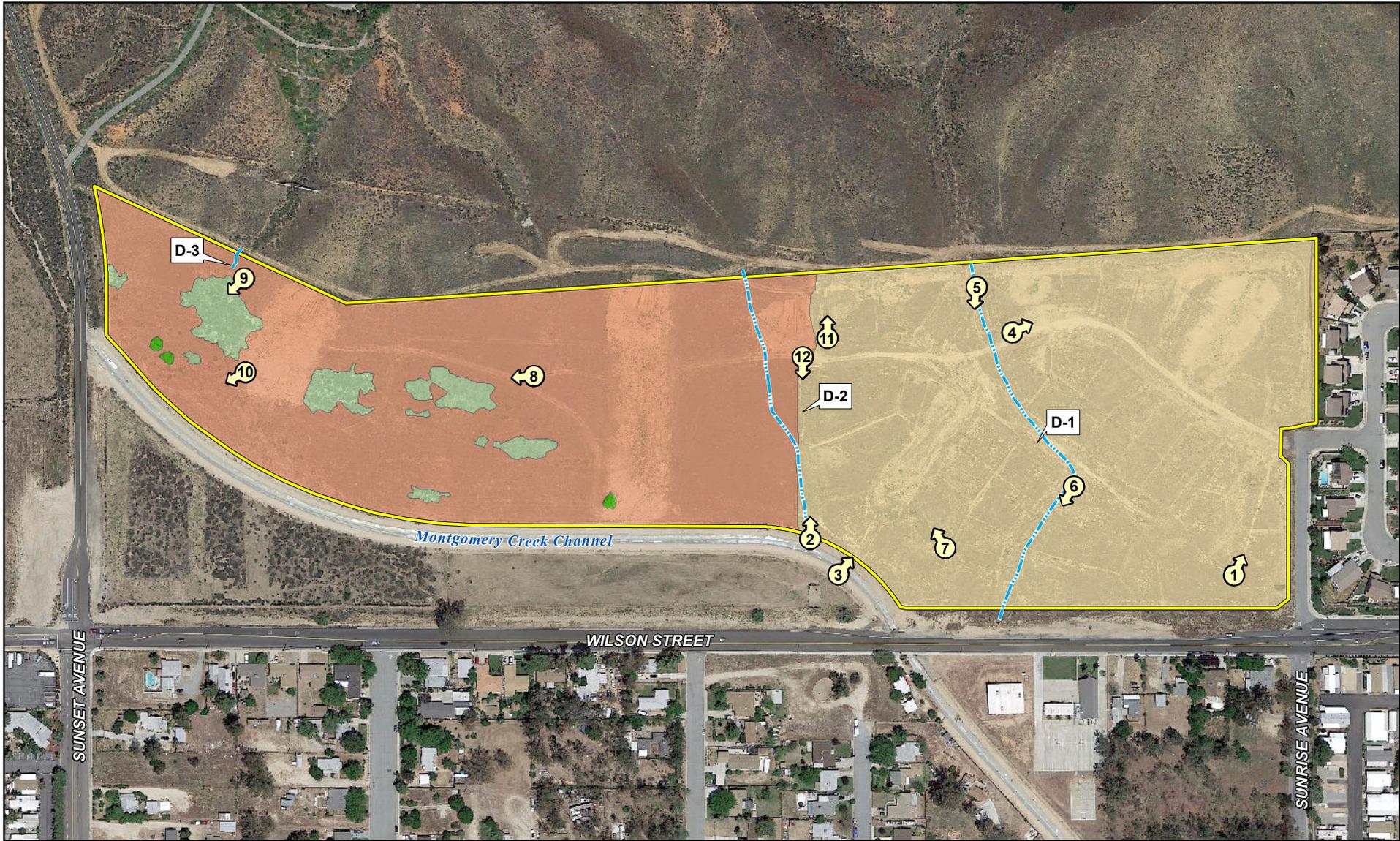
5.4 Wildlife

Wildlife common to suburban areas was observed using the site. Some species observed include red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), and California ground squirrel (*Spermophilus beecheyi*). A complete list of wildlife species observed on the site is included as Appendix A.

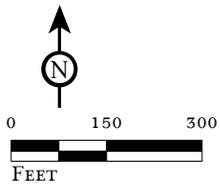
6.0 RESULTS AND RECOMMENDATIONS

6.1 MSHCP Consistency Analysis

The proposed project is located within the Pass Area Plan of the MSHCP, but is not located within a Criteria Area or adjacent to a Criteria Area or Conservation Area. Thus, the proposed project is not subject to the Urban/Wildlands Interface Guidelines. Riverine resources are present. The project site is within the MSHCP survey areas for NEPSSA plants and burrowing owl. Figure 6 shows the MSHCP survey areas and field survey area for the burrowing owl. Table A provides a summary of MSHCP consistency requirements as they apply to the project site. The riverine resources and the results of the MSHCP plants habitat assessment and burrowing owl survey are discussed in detail below.



LSA



SOURCE: Google Earth, 2014

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- Project Boundary
- - - Drainage Feature
- Vegetation and Land Use**
- California Buckwheat Scrub
- Mexican Elderberry Tree
- Ruderal/Disturbed
- Ruderal/Non-native Grassland
- ↩ Photo Location

FIGURE 4

*Banning Tract 36939
MSHCP Consistency Report*

Vegetation, Land Use and Photograph Locations



PHOTOGRAPH 1: *View facing northeast, along the eastern edge of the project site.*



PHOTOGRAPH 2: *View facing north where drainage feature D-2 leaves the site.*



PHOTOGRAPH 3: *View facing northeast of two culvert pipes. Channelized Montgomery Creek is in the foreground.*



PHOTOGRAPH 4: *View facing east along an access road.*

LSA

FIGURE 5A

*Banning Tract 36939
MSHCP Consistency Report*

Site Photographs



PHOTOGRAPH 5: *View facing south where the access road crosses drainage feature D-1.*



PHOTOGRAPH 6: *View facing southwest of two corrugated plastic culvert pipes in drainage feature D-1.*



PHOTOGRAPH 7: *View facing northwest from the southeastern part of the project site.*



PHOTOGRAPH 8: *View facing west from the central part of the project site.*

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FIGURE 5B

*Banning Tract 36939
MSHCP Consistency Report*

Site Photographs



PHOTOGRAPH 9: *View facing southwest from the northern edge of the project site.*



PHOTOGRAPH 10: *View facing southwest of ruderal grassland habitat. California buckwheat is also visible.*



PHOTOGRAPH 11: *View facing north along drainage feature D-2.*



PHOTOGRAPH 12: *View facing south along drainage feature D-2.*

LSA

FIGURE 5C

*Banning Tract 36939
MSHCP Consistency Report*

Site Photographs

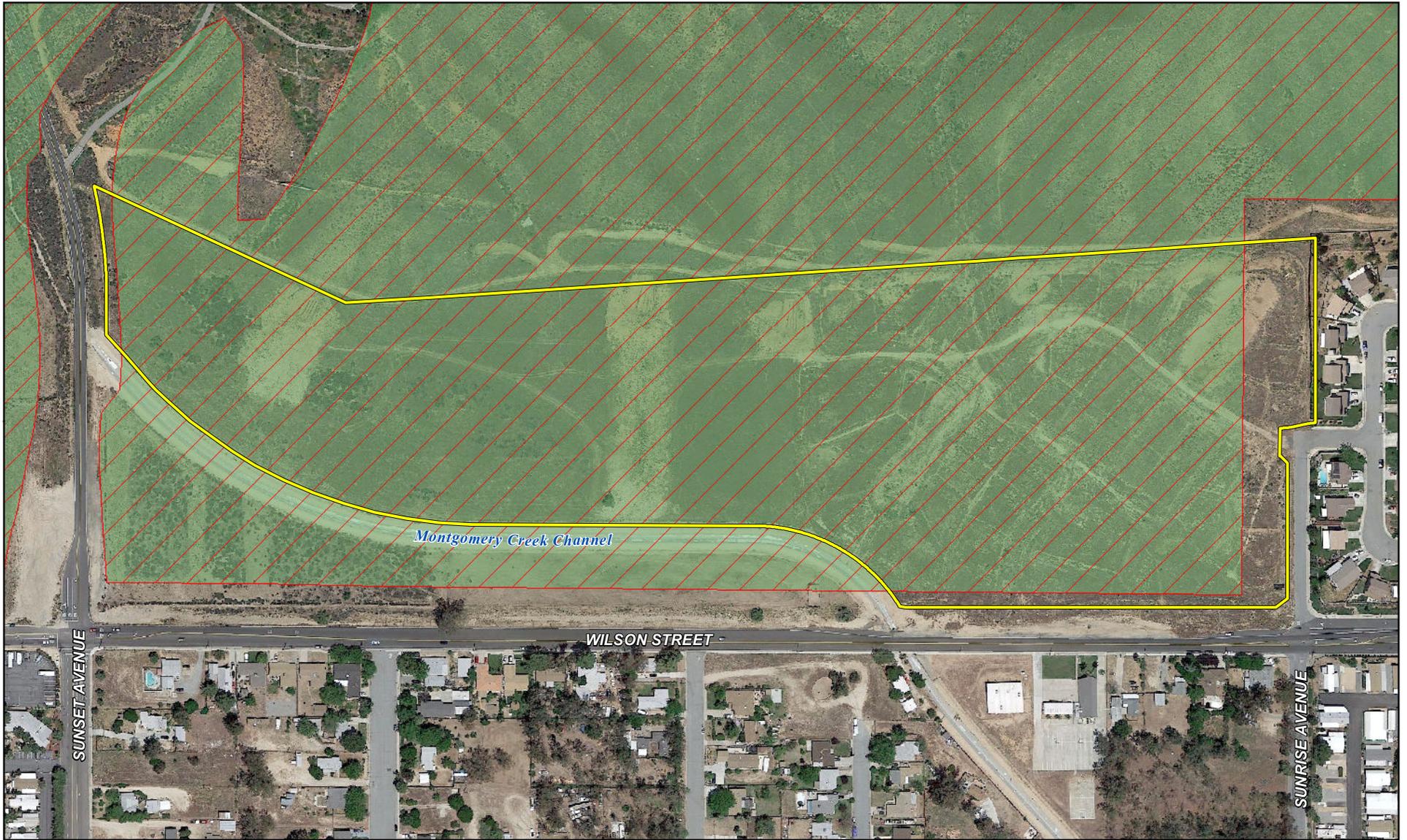
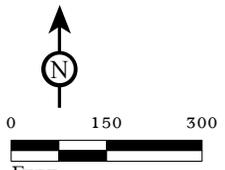


FIGURE 6

L S A



- Project Boundary
- Burrowing Owl Survey Area
- Narrow Endemic Plants Survey Area

*Banning Tract 36939
MSHCP Consistency Report*

MSHCP Survey Areas

Table A: MSHCP Consistency Checklist

MSHCP Compliance	Yes	No
Is project a covered activity?		✓
Is project located in a Criteria Area or Public/Quasi-Public Land?		✓
Located in Criteria Area Plant Survey Area?		✓
Located in Criteria Area Amphibian Survey Area?		✓
Located in Criteria Area Mammal Survey Area?		✓
Is the project located adjacent to MSHCP Conservation Areas?		✓
Is project located in Narrow Endemic Survey Area?	✓	
Are riverine/riparian/wetland habitats or vernal pools present?	✓	
Is the project located in Burrowing Owl Survey Area?	✓	

MSHCP Plant Species Survey Area. Suitable soils and/or habitat conditions for the two target Area 8 NEPSSA species—many-stemmed dudleya (*Dudleya multicaulis*) and Yucaipa onion (*Allium marvinii*)—do not occur on site; therefore, focused surveys are not required. In addition, neither of these species was observed during the May 2015 field survey. Appendix B details habitat suitability for both of these species within the study area.

Burrowing Owl. The project site falls within the MSHCP burrowing owl survey area. Burrowing owls are found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals. They can also inhabit grass, forb, and shrub stages of pinyon, and ponderosa pine habitats. They nest in abandoned burrows of ground squirrels or other animals, in pipes, under piles of rock or debris, and in other similar features.

A survey for burrowing owl was conducted on May 5 and 6, 2015. Suitable habitat for burrowing owl is present on site, specifically within the open areas surrounded by low-lying ruderal vegetation. However, no burrowing owls or burrowing owl sign (e.g., whitewash, pellets, scat, tracks, and/or feathers) were observed during the survey, and no burrows that could have been occupied by burrowing owl were found; therefore, no additional site visits were required for the survey.

Burrowing owls do not currently inhabit the site. Although there are mammal burrows on the site, none shows sign of occupation by burrowing owl. However, the site does provide suitable habitat for this species. Per the MSHCP 30-day Pre-construction Burrowing Owl Survey Guidelines (revised August 17, 2006), an additional pre-construction survey will be required within 30 days prior to beginning of site grading. If burrowing owls are found to be present, for compliance with the MSHCP, project-specific mitigation would be developed and authorized through consultation with the City of Banning and the CDFW.

6.2 Jurisdictional Waters and Streambeds

Three potentially jurisdictional drainages were identified on the proposed project site. The drainages are identified as D-1, D-2, and D-3 in previously referenced Figure 4. All three drainages enter the site at the northern boundary and travel south toward Montgomery Creek. At the time of the survey,

the drainages were dry; however, evidence of recent water flows was observed. D-1 and D-2 traverse the length of the site. D-1 exits the site through a concrete headwall along Wilson Street. D-2 exits the site and flows into Montgomery Creek. D-3 does not exit the site and dissipates into a stand of California buckwheat scrub.

These drainages are potential jurisdictional streambeds of the CDFW and may be jurisdictional waters of the U.S. regulated by the USACE and RWQCB. A formal jurisdictional delineation is needed to determine the extent of the potential streambed of CDFW and/or jurisdictional waters of the U.S., and to evaluate any potential impacts to streambed/jurisdictional waters as a result of the proposed project.

Any project-related effects to potentially jurisdictional streambeds will require the preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report for compliance with the MSHCP. In addition, permits would be required from the USACE, RWQCB, and CDFW. Any necessary mitigation would be determined through the DBESP and permitting process with the USACE and CDFW.

6.3 Migratory/Nesting Birds

Trees, shrubs, and other vegetation may provide nest sites for birds, and burrowing owls may nest in abandoned ground squirrel burrows, pipes, or similar features. To avoid any potential effects to nesting birds protected by the MBTA and the California Fish and Game Code, vegetation-clearing and preliminary ground-disturbance work should be completed outside of bird breeding season (typically February 15 through August 31). In the event that initial groundwork cannot be conducted outside the bird breeding season, pre-construction surveys would be required within 30 days prior to construction. Should nesting birds be found, an exclusionary buffer will be established by the biologist. The buffer may be up to 500 feet in diameter, depending on the species of nesting bird found. This buffer will be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.

6.4 Stephens' Kangaroo Rat

The project site is considered to have low quality habitat for the Stephens' kangaroo rat (SKR). SKR are found in transitional plant communities between grassland and coastal sage scrub, with perennial vegetation cover of less than 50 percent and well-drained soils with compaction characteristics suitable for burrow construction (neither sandy nor too hard). Potential SKR burrows were observed on site during the May 5 survey. Stephens' kangaroo rat is an MSHCP covered species. Because the site is outside the boundaries of the SKR Habitat Conservation Plan (HCP), but within the MSHCP Plan Area boundaries, the MSHCP will provide Take Authorization for SKR. Since the SKR is a Covered Species under the MSHCP, mitigation requirements will be met through compliance with the MSHCP. These requirements include payment of the MSHCP mitigation fee. Focused surveys are not required.

7.0 CONCLUSIONS

The project area is vegetated by highly disturbed, ruderal vegetation. Impacts to these plant communities are not considered significant. Indirect impacts to surrounding areas as a result of the project may include, but are not limited to, increased dust, storm water runoff, noise, and lighting. Because of the small scale of the project, the developed state of the project site and surrounding area, and with the application of standard best management practices, substantial indirect impacts are not anticipated.

The following will be required for compliance with the MSHCP and other regulatory agencies for any project effects to potential jurisdictional waters:

- The project is not anticipated to have any affects to MSHCP NEPPSA plants due to lack of suitable habitat. Thus, no further study for MSHCP NEPPSA plants is required.
- To avoid potential effects to the burrowing owl, the avoidance and minimization measures identified in Section 6.1 would need to be implemented.
- To avoid potential effects to nesting migratory birds and raptors protected by the MBTA and the California Fish and Game Code, vegetation-clearing and preliminary ground-disturbance work should be completed outside of bird breeding season (typically February 15 through August 31). In the event that initial groundwork cannot be conducted outside the bird breeding season, focused surveys would be required. Should nesting birds be found, an exclusionary buffer will be established by the project biologist.
- A formal jurisdictional delineation is needed to determine the extent of the potential streambed of CDFW and/or jurisdictional waters of the U.S., and to evaluate any potential impacts to streambed/jurisdictional waters as a result of the proposed project. For any project effects to potential jurisdictional waters, the preparation of a DBESP will be required for compliance with the MSHCP, as well as permits from the USACE, RWCQB, and CDFW. Any necessary mitigation would be determined through the DBESP and permitting process with the USACE and CDFW.

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APPENDIX A

LIST OF PLANT AND WILDLIFE SPECIES OBSERVED

Appendix A: List of Plant and Wildlife Species Observed

Scientific Name	Common Name
MAGNOLIOPHYTA: MAGNOLIOPSIDA	DICOT FLOWERING PLANTS
Adoxaceae	Moschatel family
<i>Sambucus mexicana</i>	Mexican elderberry
Asteraceae	Sunflower family
<i>Artemisia californica</i>	California sagebrush
<i>Baccharis salicifolia</i>	Mule fat
<i>Corethrogyne filaginifolia</i>	California aster
<i>Heterotheca grandiflora</i>	Telegraph weed
<i>Lepidospartum squamatum</i>	Scalebroom
<i>Oncosiphon piluliferum</i> (non-native species)	Stinknet
<i>Osteospermum</i> sp. (non-native species)	Daisybush
<i>Pluchea sericea</i>	Arrowweed
Brassicaceae	Mustard family
<i>Hirschfeldia incana</i> (non-native species)	Shortpod mustard
<i>Sisymbrium orientale</i> (non-native species)	Indian hedgemustard
Chenopodiaceae	Saltbush family
<i>Atriplex canescens</i>	Fourwing saltbush
<i>Atriplex suberecta</i> (non-native species)	Peregrine saltbush
<i>Salsola tragus</i> (non-native species)	Russian thistle
Cucurbitaceae	Gourd family
<i>Cucurbita palmata</i>	Coyote melon
Euphorbiaceae	Spurge family
<i>Croton setigerus</i>	Dove weed
Fabaceae	Pea family
<i>Acmispon glaber</i>	Deerweed
<i>Melilotus officinalis</i> (non-native species)	Yellow sweetclover
Geraniaceae	Geranium family
<i>Erodium cicutarium</i> (non-native species)	Redstem stork's bill
Lamiaceae	Mint family
<i>Salvia apiana</i>	White sage
Polygonaceae	Buckwheat family
<i>Eriogonum elongatum</i>	Long-stemmed eriogonum
<i>Eriogonum fasciculatum</i>	California buckwheat
Solanaceae	Potato family
<i>Datura stramonium</i> (non-native species)	Jimsonweed
<i>Nicotiana glauca</i> (non-native species)	Tree tobacco
MAGNOLIOPHYTA: LILIOPSIDA	MONOCOT FLOWERING PLANTS
Poaceae	Grass family
<i>Avena</i> sp. (non-native species)	Oat
<i>Bromus madritensis</i> ssp. <i>rubens</i> (non-native species)	Red brome
<i>Hordeum marinum</i> (non-native species)	Mediterranean barley

Appendix A: List of Plant and Wildlife Species Observed

Scientific Name	Common Name
<i>Schismus barbatus</i> (non-native species)	Common Mediterranean grass
AVES	BIRDS
Accipitridae	Kites, Hawks, and Eagles
<i>Buteo jamaicensis</i>	Red-tailed hawk
Falconidae	Falcons
<i>Falco sparverius</i>	American kestrel
Fringillidae	Finches
<i>Carpodacus mexicanus</i>	House finch
<i>Spinus psaltria</i>	Lesser goldfinch
Emberizidae	Emberizines
<i>Aimophila ruficeps</i>	Rufous-crowned sparrow
Columbidae	Pigeons and Doves
<i>Zenaida macroura</i>	Mourning dove
Mimidae	Mockingbirds and Thrashers
<i>Mimus polyglottos</i>	Northern mockingbird
Trochilidae	Hummingbirds
<i>Archilochus alexandri</i>	Black-chinned hummingbird
Icteridae	Blackbirds, Orioles and Allies
<i>Icterus bullockii</i>	Bullock's oriole
<i>Sturnella neglecta</i>	Western meadowlark
Sylviidae	Old World Warblers and Gnatcatchers
<i>Poliophtila caerulea</i>	Blue-gray gnatcatcher
Tyrannidae	Tyrant Flycatchers
<i>Tyrannus verticalis</i>	Western kingbird
Corvidae	Crows and Ravens
<i>Corvus corax</i>	Common raven
REPTILIA	REPTILES
Phrynosomatidae	Phrynosomatid Lizards
<i>Uta stansburiana</i>	Common side-blotched lizard
MAMMALIA	MAMMALS
Felidae	Cats
<i>Lynx rufus</i>	Bobcat
Leporidae	Rabbits and Hares
<i>Sylvilagus audubonii</i>	Desert cottontail
Sciuridae	Squirrels
<i>Spermophilus beecheyi</i>	California ground squirrel

APPENDIX B

MSHCP NARROW ENDEMIC PLANT SURVEY SPECIES

Appendix B: MSHCP Narrow Endemic Plant Survey Species (NEPSSA)

Species	MSHCP Habitat	Blooming Period	Habitat Suitability
<p>Yucaipa onion</p> <p><i>Allium marvinii</i></p>	<p>Clay soils in openings in chaparral at 760 to 1,065 meters (2,500-3,500 feet) elevation.</p>	<p>Perennial bulb April–May</p>	<p>None. Suitable soils (clay) and vegetation are not present.</p>
<p>Many-stemmed dudleya</p> <p><i>Dudleya multicaulis</i></p>	<p>Clay soils in open areas of barrens, rocky places, ridgelines, chaparral, coastal sage scrub, and southern needlegrass grasslands. Visible population size varies considerably year-to-year depending on rainfall patterns.</p> <p>The MSHCP account for this species states that “Many-stemmed dudleya is associated with openings in chaparral, coastal sage scrub, and grasslands underlain by clay and cobbly clay soils of the following series: Altamont, Auld, Bosanko, Claypit, and Porterville.”</p>	<p>Perennial May–June</p>	<p>None. Clay soils and suitable vegetation are not present.</p>

MSHCP = Multiple Species Habitat Conservation Plan

Appendix B

CULTURAL RESOURCES ASSESSMENT

**BANNING TRACT 36939
CITY OF BANNING
RIVERSIDE COUNTY, CALIFORNIA**

LSA

May 2015

CULTURAL RESOURCES ASSESSMENT
BANNING TRACT 36939
CITY OF BANNING
RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

Diversified Pacific
10621 Civic Center Drive
Rancho Cucamonga, California 91730

Prepared by:

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LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, California 92507
(951) 781-9310

LSA Project No. DFD1502

National Archaeological Database Information (NADB):

Type of Study: Reconnaissance Survey

Sites Recorded: None

USGS 7.5' Quadrangle: Beaumont, California

Acreage: 34.6 acres

Key Words: Perris, Phase I Survey, Negative Results

LSA

May 2015

MANAGEMENT SUMMARY

LSA Associates, Inc. (LSA) was retained by Diversified Pacific to conduct a cultural resources assessment for Tract 36939 in the City of Banning, Riverside County, California. This cultural resources assessment was completed pursuant to the California Environmental Quality Act (CEQA).

A cultural resources records search, additional research, and a field survey were conducted for the project area. Although no previously documented or undocumented cultural resources were identified as a result of these efforts, a historic trail may have once transected the project area, which is itself bracketed by historic period ranches, one dating to the mid-19th century. Despite severe disturbance and in part due to poor visibility at the time of the survey, the project area retains some potential for significant resources. Therefore, archaeological monitoring on a part-time basis is recommended. In the event previously undocumented archaeological resources are identified during earthmoving activities, further construction work in the area should be diverted or halted until the nature and significance of the find can be assessed.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the County Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

TABLE OF CONTENTS

MANAGEMENT SUMMARY.....	i
TABLE OF CONTENTS	ii
Appendix.....	ii
Figure.....	ii
Table	ii
INTRODUCTION.....	1
NATURAL SETTING	1
Biology.....	1
Geology.....	1
Hydrology	3
CULTURAL SETTING.....	3
Prehistory	3
Ethnohistory.....	4
History	4
METHODS.....	5
Records Search	5
Additional Research.....	5
Field Survey.....	5
RESULTS.....	6
Records Search	6
Other Resources.....	6
Additional Research.....	6
Field Survey.....	6
RECOMMENDATIONS	7
REFERENCES	8

Appendix

A: RECORDS SEARCH RESULTS BIBLIOGRAPHY

Figure

Figure 1: Regional and Project Location.....	2
----------------------------------------------	---

Table

Table A: Results of Records Search.....	6
-----------------------------------------	---

INTRODUCTION

LSA Associates, Inc. (LSA) was retained by Diversified Pacific to conduct a cultural resources assessment for Tract 36939 in the City of Banning, (City) in Riverside County (County), California. This assessment documents the potential for cultural resources to be present within the project area and whether the proposed project will affect those resources. This assessment addresses the requirements of the California Environmental Quality Act ([CEQA]; as amended January 1, 2015): Public Resources Code (PRC), Division 13 (Environmental Quality), Chapter 2.6 Section 21083.2 (Archaeological Resources) and Section 21084.1 (Historical Resources); and the Guidelines for CEQA (as amended December 1, 2014), California Code of Regulations (CCR) Title 14, Chapter 3, Article 5 Section 15064.5 (Determining the Significance of Impacts on Historical and Unique Archaeological Resources).

The project area is on the northeast corner of Sunset Avenue and Wilson Street. It is bounded by open, undeveloped land to the north and west and residential development to the south and east. Specifically, it is located in the southwestern portion of Section 5 in Township 3 South, Range 1 East, San Bernardino Baseline and Meridian, as shown on the *Beaumont, California* 7.5-minute topographic quadrangle map (United States Geological Survey [USGS] 1988) (Figure 1). The project area encompasses Assessor's Parcel Numbers (APNs) 535-430-001 through 021, 535-431-001 through 015, 535-432-001 through 017, 535-070-004, and 535-070-008.

NATURAL SETTING

The natural setting of the project vicinity is presented based on the underlying theoretical assumption that humans and human societies are in continual interaction with the physical environment. Being an integral part of the ecological system, humans adapt to the environment through technological and behavioral changes. Locations of archaeological sites are based on the constraints of these adaptations, whether it is proximity to a particular resource, topographical restrictions, or shelter and protection. Sites will also contain an assemblage of artifacts and ecofacts consistent with the particular interaction.

Biology

At an average elevation of 2,580 feet (ft) above mean sea level (amsl), the project is within the Sonoran Life Zone of California (Schoenherr 1992), which ranges from below sea level to an elevation of approximately 3,500 ft amsl. Although the native vegetation of the project area has been largely displaced by agriculture activities, common wild plants observed included buckwheat, fiddleneck, ground wraith, gypsum weed, mustard, Sahara mustard, Russian thistle, sage, hare oat, and seasonal grasses. Common animals include deer, coyotes, foxes, rabbits, rodents, ravens, raptors, reptiles, and insects.

Geology

The project is situated in the Peninsular Ranges Geomorphic Province of California that encompasses western Riverside County (California Geological Survey 2002). Crystalline rocks in the Banning area include granitic rocks of the Southern California batholith and Paleozoic metasedimentary rocks

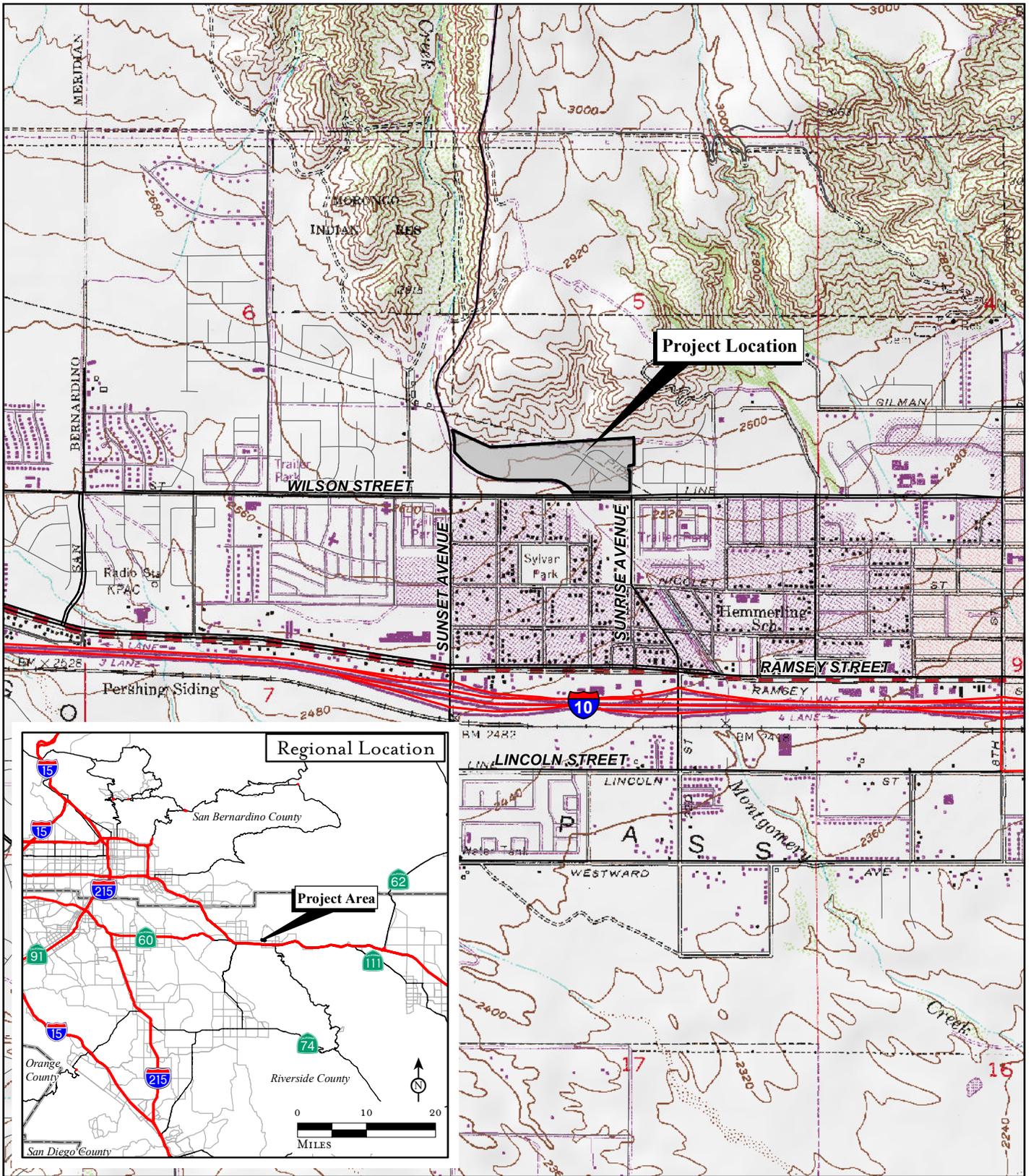
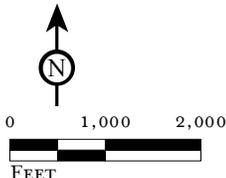


FIGURE 1

LSA



SOURCE: USGS 7.5' Quad: Beaumont, 1988, CA; County of Riverside, 2015.

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*Banning Tract 36939
Cultural Resources Assessment*

Regional and Project Location

(Dibblee 2003; Rogers 1965). These granitic rocks have intruded and metamorphosed the Paleozoic rocks to form gneissic and schistose rocks (Dibblee 2003; Rogers 1965). The granitic outcroppings were often used by Native Americans for food processing.

Hydrology

The project region is characterized by an arid climate, with dry, hot summers and moderate winters. Rainfall averages 5–15 inches annually (Beck and Haase 1974). Precipitation usually occurs in the form of winter rain, with warm monsoonal showers in summer. The project area was once transected by ephemeral drainages that would have been appealing to prehistoric inhabitants and made nearby bedrock outcrops attractive for resource processing (USGS 1954).

CULTURAL SETTING

Prehistory

The description of various prehistoric stages or chronologies identifying cultural evolution in the Southern California area has been attempted numerous times. Several of these chronologies are reviewed in Moratto (1984). No single description is universally accepted. The various chronologies are based primarily on material developments identified by researchers familiar with sites in a region, and variation exists essentially due to the differences in those items found at the sites. Small differences occur over time and space, which combine to form patterns that are variously interpreted.

Currently, two primary regional culture chronology syntheses (Wallace 1955, 1978; Warren 1968) are commonly referenced in the archaeological literature. The first, Wallace (1955, 1978), is among the most widely used prehistoric chronology for Southern California. It describes four cultural horizons or time periods: Horizon I – Early Man (9000–6500 BC), Horizon II – Milling Stone Assemblages (6500–2000 BC), Horizon III – Intermediate Cultures (2000 BC–AD 200), and Horizon IV – Late Prehistoric Cultures (AD 200–historic contact). This chronology was refined (Wallace 1978) using absolute chronological dates unavailable in 1955. One issue with Wallace’s chronology is artifacts specified as diagnostic are not necessarily so. For instance, groundstone, which is characteristic of Milling Stone sites, is also found at Late sites; therefore, groundstone does not necessarily indicate a specific time period.

The second cultural chronology (Warren 1968) is based broadly on Southern California prehistoric cultures, including those of Santa Barbara, San Diego, and the inland desert areas, and was also revised (Warren 1984; Warren and Crabtree 1986). Warren’s chronology includes five periods in prehistory: Lake Mojave (7000–5000 BC), Pinto (4000–3000 BC), Gypsum (1000 BC–AD 1), Saratoga Springs (AD 500–1000), and Protohistoric (AD 1500–historic). Warren views cultural continuity and change in terms of various significant environmental shifts, fitting what is known as the cultural ecological approach. Changes in settlement pattern and subsistence focus are viewed as cultural adaptations to a changing environment. In general, this pattern begins with gradual environmental warming in the late Pleistocene, continues with the desiccation of the desert lakes, followed by a brief return to pluvial conditions, and concludes with a general warming and drying trend, with periodic reversals that continue to the present (Warren 1986).

Ethnohistory

The project is located within the traditional cultural territory of the Cahuilla (Kroeber 1925; Bean and Shipek 1978). Like other Native American groups in Southern California, the Cahuilla were semi-nomadic, hunter-gatherers who subsisted by exploitation of seasonably available plant and animal resources and were first encountered by the Spanish missionaries in the late 18th century. The first written accounts of the Cahuilla are attributed to the mission fathers, and later documentation was by Barrows (1900), Hooper (1920), Strong (1929), Bean (1972), and many others.

History

In California, the historic era is generally divided into three periods: the Spanish Period (1769–1821), the Mexican Period (1821–1848), and the American Period (1848–present). Exploration of the Riverside County area began slowly until Lieutenant Pedro Fages, then the military governor of San Diego, crossed through the San Jacinto Valley in 1772.

During the Spanish Period, Riverside County proved to be too far inland to include any missions or *asistencias* within its limits, although both San Luis Rey and San Juan Capistrano claimed a large part of southwestern Riverside County. Missions San Juan Capistrano and San Luis Rey were established in 1776 and 1798, respectively.

In 1821, Mexico overthrew Spanish rule and the missions began to decline. By 1833, the Mexican government passed the Secularization Act, and the missions reorganized as parish churches, lost their vast land holdings, and released their neophytes. During the Mexican Period, 16 ranchos were granted in Riverside County, including Rancho *San Jacinto Nuevo*, which included the project area (Beck and Haase 1974).

Bradshaw Trail. With the assistance of Native Americans, William Bradshaw mapped the ancient trail that now bears his name. It crossed through the area along the contours of the San Gorgonio foothills and was part of a major transit corridor between the Colorado River and the Southern California coast from before the Spanish Period into the late -19th century (Brumgardt 1976; Gunther 1984).

Gilman Ranch (33-1701). An important station along the Bradshaw Trail was the Gilman Ranch, which had originally been established in the mid-1850s by Jose Pope. Pope raised cattle and built an adobe that ultimately served as the first stage stop. The ranch subsequently changed hands twice and was briefly known as Chapin's sheep (sic) Ranch prior to Bradshaw acquiring it from Newton Noble in the late 1860s. The ranch is still extant as a Riverside County historical park and is located approximately 0.25 mile east of the project area.

City of Banning. Settlement of the Banning area began in the 1860s, and the community was first known as Moore City, named by Ransom Moore, who came to the Banning area in the mid-1860s (Lech 2004). In the mid- to late 1870s, growth in the area began shifting toward Banning due in part to the failure of lumber production in nearby Hall City (present-day Cabazon). In 1877, the community's post office and railroad station were built and the community was named after General

Phineas Banning, a railroad owner/executive who occasionally pastured sheep in the Banning area (Gunther 1984; Salley 1977). In 1884, the Banning Land and Water Company and the San Jose Water Company initiated development of the community with large-scale agricultural cultivation, residential subdivisions, and consolidation of access to water sources (Lech 2004). Banning began to prosper, with agriculture as the foundation of the local economy. By the time of its incorporation as a City in 1913, Banning had around 1,500 inhabitants with approximately 4,000 acres under cultivation (McGroarty 1914).

In addition to successful agriculture, a flourishing health industry began developing in Banning in the early 1900s as people came to the area seeking a better climate for ailments such as tuberculosis (Hughes 1938). Although the economy was principally driven by agriculture, the establishment of several sanitariums offering health treatments became a contributing factor to the growth of Banning (Hughes 1938).

During World War II, Banning had a 1,000-bed hospital, an artillery range, and an airfield that contributed to the training effort run by General George C. Patton at the nearby Desert Training Center. After the war, many people moved to Banning, and new residential subdivisions became part of the community. Commercial and industrial development have gradually replaced the ranches that once dominated the area, but Banning still retains some of its rural character.

METHODS

Records Search

On April 24, 2015, LSA Cultural Resources Manager/Archaeologist Gini Austerman completed a cultural resources records search for the project area and a 1-mile radius around it at the Eastern Information Center (EIC) of the California Historical Resources Information System (CHRIS) located at the University of California, Riverside. The EIC is the State-designated repository for records pertaining to cultural resources in Riverside County. The objectives of this research were (1) to establish the status and extent of previously recorded cultural resources sites, surveys and studies, (2) to note the likelihood of encountering cultural resources and their type(s) based on previously recorded resources within 1 mile of the project area, and (3) to uncover relevant historical contexts. Data sources consulted at the EIC include archaeological site records, historic USGS topographic maps, reports from previous studies, and the State Historic Resource Inventory (HRI) for Riverside County, which contains listings for the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), California Historical Landmarks (SHL), and California Points of Historical Interest (SPHI).

Additional Research

On April 30, 2015, LSA Senior Cultural Resources Manager/Archaeologist Riordan Goodwin reviewed historic-period maps and online aerial photographs (Google Earth 2003, 2005, USGS 19).

Field Survey

On May 1, 2015, Mr. Goodwin and Ms. Austerman conducted a reconnaissance pedestrian survey of the project area and surveyed the entire project area in systematic parallel transects spaced by

approximately 15 meters (approximately 50 feet). Special attention was given to (1) areas of exposed soil for evidence of artifacts on the surface, (2) areas of rodent back dirt where buried artifacts and or midden may have been brought to the surface, and (3) exposed soil profiles for evidence of cultural stratigraphy. The purpose of this survey was to identify and document any cultural resources that might be exposed and locate areas within the project area that might be sensitive for cultural resources prior to the beginning of ground-disturbing activities.

RESULTS

Records Search

Data from the EIC indicate there have been 21 previous cultural resources studies conducted within a one-mile radius of the project, none of which are located within the project area. Also indicated is the presence of 54 previously documented resources, including prehistoric resources (two habitation sites, 33-00099 and 33-15905; and an isolated artifact, 33-15244); two historic period resources (St. Boniface School, 33-4213; and a 1940s water conveyance feature, 33-6017); and 49 built environment resources. The built environment resources include two historic ranches, one of which is listed in the National Register (33-1701, the Gilman Ranch), and the Brinton Ranch (33-15241), dating to the 1940s. In addition, one historic transmission line (33-15035/22389) and 46 residences are within the study area, as detailed in Table A. The Brinton Ranch is the closest resource, located across Sunset Avenue on the west side of the project area.

Table A: Results of Records Search

Archaeological Sites	Built Environment	Reports
33-00099, 33-04213, 33-6017, 33-15905, 33-15244.	33-1701, 33-9100, 33-9147, 33-15305/22389, 33-15241, 33-15809 through 33-15831, and 33-17729 through 33-17739.	RI-0598, RI-0816, RI-0817, RI-1476, RI-2065, RI-2066, RI-21996, RI-3039, RI-3852, RI-4168, RI-4720, RI-5266, RI-56786, RI-7339, RI-7868, RI-7970, RI-8011, RI-8012, RI-8315, RI-8409, and RI-8449.

Other Resources

Although not documented as a separate resource within the study area, the Bradshaw Trail once ran through the Gilman Ranch and may have transected or bounded the project area (Riverside County Parks Department, n.d.).

Additional Research

Review of historic aerials and topographic maps indicated there were no historic buildings within the project area (Historic Aerials 1966; USGS 1950–1964).

Field Survey

Visibility was poor (approximately 15 percent) with the majority of the project area obscured by vegetation. The eastern half of the project has been disrupted by grading of residential pads and a

subsurface gas pipeline. The western portion has been severely disturbed by earthmoving and agricultural or possibly vegetation-abatement disking. Soils are silty loam.

Remnants of a concrete irrigation standpipe system were identified along the northern project boundary. This is a ubiquitous and temporally ambiguous type of water conveyance system in this region; it lacks physical integrity, any associated artifacts or features, and does not warrant formal documentation or further consideration in the CEQA process.

No trace of the Bradshaw Trail was identified.

RECOMMENDATIONS

A cultural resources records search, additional research, and a field survey were conducted for the project area. Although no previously documented or undocumented cultural resources were identified as a result of these efforts, the historic Bradshaw Trail may have once transected the project area, which is itself bracketed by historic period ranches, one of which, the Gilman Ranch, dates to the mid-19th century. Despite severe disturbance and in part due to poor visibility at the time of the survey, the project area retains some potential for significant resources. Therefore, archaeological monitoring on a part-time basis is recommended. In the event previously undocumented archaeological resources are identified during earthmoving activities, further work in the area should be diverted or halted until the nature and significance of the find can be assessed by a qualified archaeologist.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

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APPENDIX A

RECORDS SEARCH RESULTS BIBLIOGRAPHY

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-00598	NADB-R - 1080640; Voided - MF-0524	1979	Alan Davis	Environmental Impact Evaluation: An Archaeological Assessment of an Unnumbered Parcel North of Banning Riverside, Riverside County, California	Archaeological Research Unit, U.C. Riverside	
RI-00816	NADB-R - 1080871; Voided - MF-0739	1980	Paul G. Chace and Don Laylander	An Archaeological and Historical Assessment of Areas 1 and 4 of Amendment Number 1 to the Banning Downtown Redevelopment Project	Paul G. Chace and Associates, Escondido, CA	
RI-00817	NADB-R - 1083810; Voided - MF-0739	1990	Philip de Barros and Paul Farnsworth	Archaeological Invesitgations of the St. Boniface Indian School and Cemetery Site, Banning, California	Chambers Group, Inc., Santa Ana, CA	33-000099, 33-004213
RI-01476	NADB-R - 1081737; Other - NPS PX 8100-2-0088; Voided - MF-1550	1982	NAPTON, L. KYLE and E.A. GREATHOUSE	CULTURAL RESOURCE INVESTIGATIONS - MORONGO INDIAN RESERVATION, CALIFORNIA	AMERICAN INDIAN RESOURCE ORGANIZATION, INC., Mesa, AZ	33-002320
RI-02065	NADB-R - 1082499; Submitter - 820; Voided - MF-2263	1986	SWOPE, KAREN K.	PRELIMINARY REPORT ON ARCHAEOLOGICAL TEST EXCAVATIONS AND DATA RECOVERY AT THE POPE ADOBE, GILMAN RANCH COUNTY HISTORIC PARK (CA-RIV-1701), BANNING, RIVERSIDE COUNTY, CALIFORNIA	ARCHAEOLOGICAL RESEARCH UNIT, U.C. RIVERSIDE	33-001701
RI-02066	NADB-R - 1082500; Submitter - 828; Voided - MF-2263	1987	SWOPE, KAREN	ARCHAEOLOGICAL INVESTIGATIONS AT THE POPE ADOBE, BANNING, RIVERSIDE COUNTY, CALIFORNIA	ARCHAEOLOGICAL RESEARCH UNIT, U.C. RIVERSIDE	33-001701
RI-02199	NADB-R - 1082628; Voided - MF-2383	1986	CRAMER, KEVIN	ST. BONIFACE INDIAN INDUSTRIAL SCHOOL	BOY SCOUTS OF AMERICA; TROOP 38 (COUNTY UNKNOWN)	
RI-02263	NADB-R - 1082701; Voided - MF-2458	1987	SCHAEFER, JERRY	A REMOTE ROCK SHELTER IN THE BIG MARIA MOUNTAINS, RIVERSIDE COUNTY, CALIFORNIA	ASM AFFILIATES, INC	33-003151
RI-03039	NADB-R - 1083587; Voided - MF-3263	1990	WHITE, ROBERT S.	AN ARCHAEOLOGICAL ASSESSMENT OF THE "SUNSET CROSSING" PROJECT, A 294.8 ACRE PARCEL AS SHOWN ON TPM 25541, LOCATED IMMEDIATLY SOUTH OF THE I-10 FREEWAY AT SUNSET AVENUE IN BANNING, RIVERSIDE COUNTY, CALIFORNIA.	ARCHAEOLOGICAL ASSOCIATES, LTD.	
RI-03852	NADB-R - 1084726; Submitter - 1008; Voided - MF-4197	1993	WHITNEY-DESAUTELS, NANCY	CULTURAL RESOURCE ASSESSMENT OF THE SAN GORGONIO PASS WATER AGENCY WATER IMPORTATION PROJECT, RIVERSIDE AND SAN BERNARDINO COUNTIES, CALIFORNIA	SCIENTIFIC RESOURCE SURVEYS, INC.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-04168	NADB-R - 1085372; USFS - ARR 05-12- SJ-112; Voided - MF- 4646	1998	DIGREGORIO, LEE A.	SAN BERNARDINO NATIONAL FOREST ARCHAEOLOGICAL RECONNAISSANCE REPORT: PARADISE CORNER LAND EXCHANGE	SAN BERNARDINO NATIONAL FOREST	
RI-04720	NADB-R - 1086098	2004	MICHAEL BRANDMAN ASSOCIATES	PHASE I CULTURAL RESOURCE SURVEY AND HISTORIC SITE SIGNIFICANCE EVALUATIONS FOR THE SUNSET CROSSING PROJECT FOOTPRINT, SOUTH BANNING AREA, COUNTY OF RIVERSIDE, CALIFORNIA	MICHAEL BRANDMAN ASSOCIATES	33-009176, 33-013778, 33- 013779
RI-05166	NADB-R - 1086529	2005	WHITE, LAUIRE S.	RECORDS SEARCH RESULTS FOR SPRINT PCS FACILITY RV33XC212D (DESERT CENTER), DESERT CENTER, RIVERSIDE COUNTY, CALIFORNIA	MICHAEL BRANDMAN ASSOCIATES	
RI-05266	NADB-R - 1086629	2000	JACKSON, ADRIANNA	RECORDS SEARCH RESULTS FOR SPRINT PCS FACILITY RV37XC918D (BANNING TWIN TOWERS) EAST OF SUNSET AVENUE, NORTH OF WILSON STREET, BANNING, RIVERSIDE COUNTY, CA	MICHAEL BRANDMAN ASSOCIATES	
RI-05678	NADB-R - 1087041; Submitter - CA- 5365C	2005	BILLAT, LORNA	NEW TOWER ("NT") SUBMISSION PACKET FOR PROJECT BRIDGEPORT/CA-5365C	EARTHTOUCH, INC.	
RI-07339	Submitter - Contract No. 2083	2007	Tang, Bai "Tom", Josh Smallwood, and Melissa Hernandez	Identification and Evaluation of Historic Poperties: Wastewater Treatment Plant Expansion and Recycled Water System, City of Banning, Riverside, California	CRM TECH	33-016207, 33-016208
RI-07868		2004	Foster, John M. and Linda H. Rehberger	Archaeological Investigation For Brinton Reservoir, City of Banning, California	Greenwood and Associates	
RI-07970	Submitter - LSA Project No. SCE531	2006	Roderic McLean, Shannon Carmack, Jay Michalsky, and Judith Marvin	A Study of the Past in San Timoteo Canyon and San Gorgonio Pass: Cultural Resource Assessment Oak Valley Substation Project, Riverside County	LSA Associates, Irvine, CA	33-001701, 33-004715, 33- 006018, 33-007296, 33-008344, 33-008399, 33-008400, 33- 009140, 33-009498, 33-013778, 33-013779, 33-015183, 33- 015184, 33-015185, 33-015186, 33-015187, 33-015188, 33- 015189, 33-015190, 33-015191, 33-015192, 33-015193, 33- 015194, 33

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-08011		2008	Robert McLean, Shannon Carmack, Jay Michalsky, and Judith	Final Cultural Resources Assessment, Study Of The Past In San Timoteo Canyon and San Gorgonio Pass: Oak Valley Substation Project Riverside County.	LSA Associates, Inc. Irvine, CA	
RI-08012		2008	Roderic McLean, Shannon Carmack, Phil Fulton, Maria Aron, Jay Michalsky, Daniel Ewers, Casey Tibbet, and Brook Smith	Supplemental Cultural Resource Assessment, Oak Valley Substation Project, San Bernadino and Riverside Counties	LSA Associates, Inc., Irvine, CA	33-000179, 33-000790, 33-000794, 33-002262, 33-003448, 33-003449, 33-007294, 33-009150, 33-009498, 33-013428, 33-015720, 33-015802, 33-015804, 33-015806, 33-015807, 33-015808, 33-015809, 33-015810, 33-015811, 33-015812, 33-015813, 33-015814, 33-015815, 33
RI-08315	Other - IE04452A	2009	Wayne H. Bonner and Arabesque Said	Letter Report: Cultural Resource Records Search and Site Visit Results for T-Mobile USA Candidate IE04452A, 2909 West Lincoln Street, Banning, Riverside County, California.	MBA	
RI-08409	Other - Contract No. 0311-051	2004	William T. Eckhardt, Kristen E. Walker, and Richard L. Carrico	Draft Cultural Resources Inventory of the Proposed Vista to Devers Transmission Line, Riverside and San Bernardino Counties, California.	Mooney/Hayes Associatesm LLC	33-002262, 33-004768, 33-007888, 33-013427, 33-013428, 33-013429, 33-013430, 33-013431, 33-013432, 33-013433, 33-013434
RI-08440	Other - Riverside County Case Number: CUP03602	2008	Brent Leftwich	Phase II Archaeological Assessment: CA-RIV-8953, Blythe Solar 1 Project, Riverside County, California.	URS Corporation	33-017206
RI-08449	Submitter - CRM TECH Contract #1211	2004	Bai "Tom" Tang, Michael Hogan, Josh Smallwood, and Terri Jacquemain	Cultural Resources Technical Report City of Banning General Plan.	CRM TECH	

Appendix C



LSA ASSOCIATES, INC.
1500 IOWA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92507

951.781.9310 TEL
951.781.4277 FAX

BERKELEY
CARLSBAD
FRESNO

IRVINE
PALM SPRINGS
PT. RICHMOND
ROCKLIN
SAN LUIS OBISPO

July 28, 2015

Mr. Art Vela, Traffic Engineer, City of Banning
99 East Ramsey Street
Banning, California 92220

Subject: Focused Traffic Impact Study for Banning TTM 36939 (LSA Project No. DFD1502)

Dear Mr. Vela:

This focused traffic impact study has been prepared to assess the potential circulation impacts associated with the development of the proposed Banning TTM 36939 Project to be located between Sunset Avenue and Sunrise Avenue, north of the Montgomery Creek Channel in the City of Banning, Riverside County. Attachment A, Figure 1 illustrates the regional and project location. The proposed project is a 35-acre lot consisting of 98 single-family residential dwelling units.

This report is intended to satisfy the requirements established by the *City of Banning "Guidelines for the Preparation of Traffic Impact Reports/Studies,"* dated August 2005, *"Riverside County Transportation Department Traffic Impact Analysis Preparation Guide,"* dated April 2008, as well as the requirements for the disclosure of potential impacts and mitigation measures per the California Environmental Quality Act (CEQA). The City requested preparation of a traffic analysis that documents the project's trip generation and analyzes the interface between Sunset Avenue and the proposed Dawn Lane (one of the project access locations), and the roadway segment between Wilson Street and the proposed Dawn Lane. Thus, this report examines traffic operations at these locations under the following four scenarios:

- Existing Conditions;
- Existing With Project Conditions;
- Opening Year Without Project Conditions; and
- Opening Year With Project Conditions.

Traffic conditions were examined for the weekday a.m. and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 and 9:00 a.m. The p.m. peak hour is the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m.

PROJECT DESCRIPTION

As previously noted, the project consists of 98 single-family residential dwelling units. The project site is located on the east side of Sunset Avenue, north of Wilson Street and the Montgomery Creek Channel, and west of Sunrise Avenue. Access to the project site is provided by three intersections, one on Sunset Avenue, one on Wilson Street, and one on Sunrise Avenue. As described earlier, this analysis documents the project's trip generation and analyzes the interface between Sunset Avenue

and the proposed Dawn Lane (one of the project access locations), and the roadway segment between Wilson Street and the proposed Dawn Lane. Attachment A, Figure 2 illustrates the site plan. The project opening year is anticipated to be 2016.

LEVEL OF SERVICE DEFINITIONS AND PROCEDURES

Roadway operations and the relationship between capacity and traffic volumes are generally expressed in terms of levels of service (which are defined using the letter grades A through F). These levels recognize that, while an absolute limit exists as to the amount of traffic traveling through a given intersection (the absolute capacity), the conditions that motorists experience rapidly deteriorate as traffic approaches the absolute capacity. Under such conditions, congestion is experienced. There is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays. This near-capacity situation is labeled Level of Service (LOS) E. Beyond LOS E, capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it. An upstream queue will then form and continue to expand in length until the demand volume again declines.

A complete description of the meaning of level of service can be found in the *Transportation Research Board Special Report 209, Highway Capacity Manual*. The Manual establishes levels of service A through F as shown in Table A for intersections and levels of service A through F for roadway segments as shown in Table B. Table C defines LOS criteria for unsignalized intersections.

Table A: Intersection Level of Service Definitions

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

Table B: Roadway Segment Level of Service Definitions

LOS	Description
A	Primary free-flow operations at average travel speeds usually about 90 percent of the free-flow speed for the arterial classification. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Stopped delay at signalized intersections is minimal.
B	Reasonably unimpeded operations at average travel speeds usually about 70% of the free-flow speed of the arterial classification. Ability to maneuver within the traffic stream is only slightly restricted. Stopped delays are not bothersome, and driveways general are not subject to appreciate tension.
C	Traffic operations are stable. However, mid-block maneuverability may be more restricted than in LOS B. Longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50% of the average free-flow speed for the arterial classification. Motorists will experience some appreciable tension while driving.
D	Borders on a range where small increases in flow may cause substantial increases in approach delay and decreases in arterial speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these factors. Average travel speeds are about 40% of the free-flow speed. For planning purposes, this level of service is the lowest that is considered acceptable.
E	Characterized by significant approach delays and average travel speeds of one-third or less of the free-flow speed. Typically caused by some combination of adverse progression, high signal density (more than two signalized intersections per mile), high volumes, extensive queuing, delays at critical intersections, and/or inappropriate signal timing.
F	Arterial flow at extremely slow speeds, below one-third to one-fourth of the free-flow speed. Intersection congestion is likely at critical signalized intersections, with high approach delays and extensive queuing. Adverse progression is frequently a contributor to this condition.

Table C: Level of Service Criteria for Unsignalized Intersections

Level of Service	Unsignalized Intersection Average Delay per Vehicle (sec.)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Consistent with the City's traffic study guidelines and the County's traffic impact analysis preparation guide, the 2010 *Highway Capacity Manual* (HCM 2010) analysis methodologies were used to determine intersection levels of service at Sunset Avenue/Dawn Lane. All levels of service were calculated using *Synchro 9.0* software, which uses the HCM 2010 methodologies. Levels of service at roadway segments were calculated using the City's roadway capacity thresholds as shown in Table D. Study area intersections and roadway segments fall under the jurisdictions of the City.

Table D: Roadway Level of Service Criteria

Roadway Classification	No. of Lanes	Two-Way Traffic Volume (ADT) ¹		
		Service Level C	Service Level D	Service Level E
Collector	2	12,800	14,400	16,000

¹ Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables. Source: City of Banning General Plan Update Traffic Study, 2004.

Based on the Banning General Plan Amendment Change in Level of Service Policy, dated September, 2012, the City of Banning establishes LOS D as the minimum level of service to be maintained on all roadway segments and intersections. Therefore, for study intersections and roadway segments, improvements are recommended when a project deteriorates the LOS to below D, or when the project causes significant impacts.

ANALYSIS METHODOLOGY

Study Area Determination

The study area was determined in consultation of City staff and includes analysis of the proposed intersection of Sunset Avenue/Dawn Lane and the roadway segment on Sunset Avenue between Wilson Street and the proposed Dawn Lane.

Attachment A, Figure 3 illustrates the analysis intersection and roadway segment.

BACKGROUND TRAFFIC VOLUMES WITHOUT PROJECT SCENARIOS

Existing Traffic Volumes

Existing a.m. and p.m. background traffic volumes for the intersection of Sunset Avenue/Dawn Lane were developed based on traffic counts collected at the intersection of Sunset Avenue/Wilson Street. The traffic counts were collected by National Data and Surveying Services in May 2015. The north leg approach and departure volumes at Sunset Avenue/Wilson Street were applied to the northbound and southbound through volumes at Sunset Avenue/Dawn Lane to develop existing a.m. and p.m. background traffic volumes. Count sheets are contained in Attachment C. Detailed volume development worksheets are included in Attachment D.

Daily tube counts were collected for the roadway segment on Sunset Avenue north of Wilson Street by National Data and Surveying Services in May 2015. Count sheets are contained in Attachment C. Detailed volume development worksheets are included in Attachment D.

Opening Year Without Project Traffic Volumes

Based on the information provided by City staff, there are no cumulative projects north of Sunset Avenue/Wilson Street that would impact the study area. Therefore, this focused traffic impact study does not include any cumulative projects. Opening year background without project traffic volumes at the intersection of Sunset Avenue/Dawn Lane and roadway segment of Sunset Avenue north of Wilson Street were developed by applying a 2 percent per annum growth rate for one year (2015 to 2016) to the existing background traffic volumes. Detailed volume development worksheets are included in Attachment D.

PROJECT TRAFFIC

Project Trip Generation, Distribution, and Assignment

Trip generation for the proposed project was calculated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation* (9th Edition) for Land Use 210 Single-Family Detached Housing. The project trip generation is summarized in Attachment B, Table E, which shows the project would generate 73 trips in the a.m. peak hour, 98 trips in the p.m. peak hour, and 933 daily trips.

Generalized trip distribution patterns were developed based on the location of the proposed project in relation to surrounding land uses and the regional roadway network. Attachment A, Figure 3 illustrates the project trip distribution. The project trip assignment is the product of the project trip generation and the trip distribution percentages and is illustrated in Figure 3.

TRAFFIC VOLUMES WITH PROJECT SCENARIOS

Existing with project traffic volumes were developed by adding project trips to the existing background without project traffic volumes. Opening year with project traffic volumes were developed by adding project trips to the opening year background without project traffic volumes. Detailed volume development worksheets are included in Attachment D. Attachment A, Figure 3 illustrates the existing and opening year with project a.m. and p.m. peak hour traffic volumes.

Existing with project daily roadway segment volumes were developed by adding project trips to the existing daily background without project volumes. Opening year with project daily traffic volumes were developed by adding project trips to the opening year daily background without project volumes. With the addition of the project, the roadway segment on Sunset Avenue north of Wilson Street, has been renamed to “Sunset Avenue: Between Wilson Street and Dawn Lane.”

EXISTING LEVELS OF SERVICE

Since the intersection of Sunset Avenue/Dawn Lane will not exist until the project is completed, no without project levels of service for this intersection have been reported for without project conditions.

Existing Without Project Roadway Levels of Service

A roadway segment level of service analysis was conducted using the methodologies previously discussed. Attachment B, Table F summarizes the result of this analysis and shows the study area roadway segment is currently operating at satisfactory LOS.

Existing With Project Intersection and Roadway Segment Levels of Service

Existing with project traffic volumes were developed using the approach discussed in the Traffic Volumes With Project Scenarios section. An intersection level of service analysis was conducted for existing with project conditions to determine current intersection performance at Sunset Avenue/Dawn Lane. Attachment B, Table G summarizes the results of this analysis and shows that the

intersection of Sunset Avenue/Dawn Lane is projected to operate at satisfactory LOS. Level of service calculation worksheets are contained in Attachment E.

A roadway segment level of service analysis was conducted using the methodologies previously discussed. Attachment B, Table F summarizes the result of this analysis and shows the study area roadway segment is projected to operate at satisfactory LOS.

OPENING YEAR LEVELS OF SERVICE

Since the intersection of Sunset Avenue/Dawn Lane will not exist until the project is completed, no without project levels of service for this intersection have been reported for without project conditions.

Opening Year Without Project Roadway Levels of Service

A roadway segment level of service analysis was conducted using the methodologies previously discussed. Attachment B, Table F summarizes the result of this analysis and shows the study area roadway segment is projected to operate at satisfactory LOS.

Opening Year With Project Intersection and Roadway Segment Levels of Service

Opening year with project traffic volumes were developed using the approach discussed in the Traffic Volumes With Project Scenarios section. An intersection level of service analysis was conducted for opening year with project conditions to determine intersection performance at Sunset Avenue/Dawn Lane. Attachment B, Table G summarizes the results of this analysis and shows that the intersection of Sunset Avenue/Dawn Lane is projected to operate at satisfactory LOS. Level of service calculation worksheets are contained in Attachment E.

A roadway segment level of service analysis was conducted using the methodologies previously discussed. Attachment B, Table F summarizes the result of this analysis and shows the study area roadway segment is projected to operate at satisfactory LOS.

SUMMARY

As shown in previously referenced Table A, the project would generate 933 daily trips, with 73 trips occurring during the a.m. peak hour and 98 trips occurring in the p.m. peak hour. Additionally, under existing and opening year conditions, the proposed intersection of Sunset Avenue/Dawn Lane and roadway segment on Sunset Avenue between Wilson Street and the proposed Dawn Lane operate at satisfactory LOS or better.

Please review the focused traffic impact studies outlined in this letter and the accompanying figures, tables and appendices. Should the City have any comments or require additional information, please do not hesitate to contact me at (951) 781-9310 or via email Ambarish.Mukherjee@lsa-assoc.com.

Sincerely,

LSA ASSOCIATES, INC.



Ambarish Mukherjee, AICP, EIT
Associate

Attachments:

Attachment A: Figures

Figure 1: Regional and Project Location

Figure 2: Site Plan with Study Area Intersection

Figure 3: With Project Traffic Volumes

Attachment B: Tables E through G

Table E: Project Trip Generation

Table F: Roadway Segment Levels of Service

Table G: Intersection Levels of Service

Attachment C: Traffic Counts

Attachment D: Volume Development Worksheets

Attachment E: Level of Service Worksheets

ATTACHMENT A: FIGURES

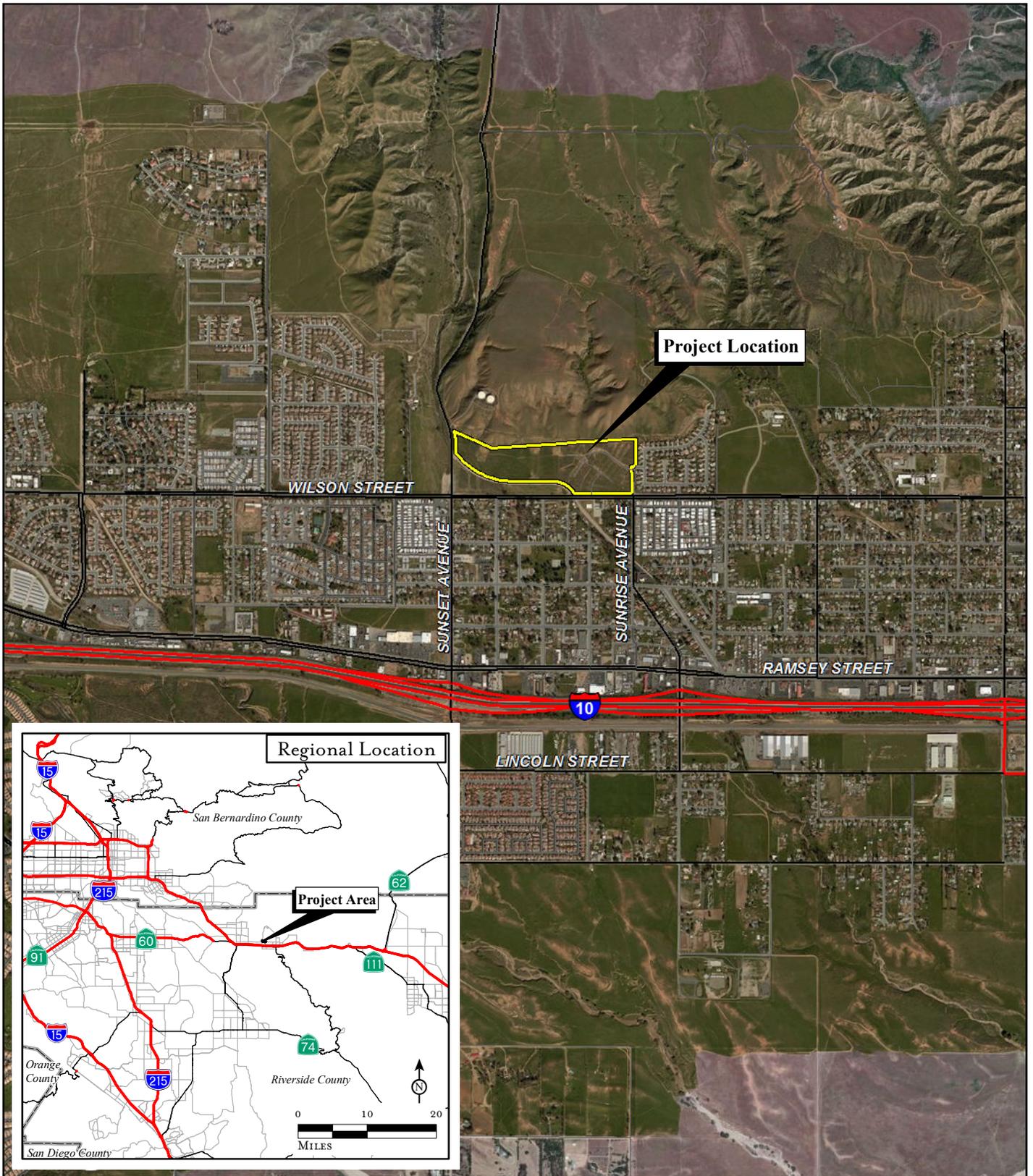
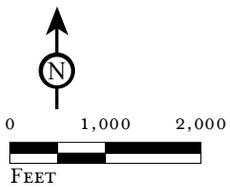


FIGURE 1

LSA



SOURCE: Bing Aerials, 2010; County of Riverside, 2015.

I:\DFD1502\Reports\Traffic\fig1_RegLoc.mxd (7/28/2015)

*Banning TTM 36939
 Focused Traffic Impact Study*

Regional and Project Location

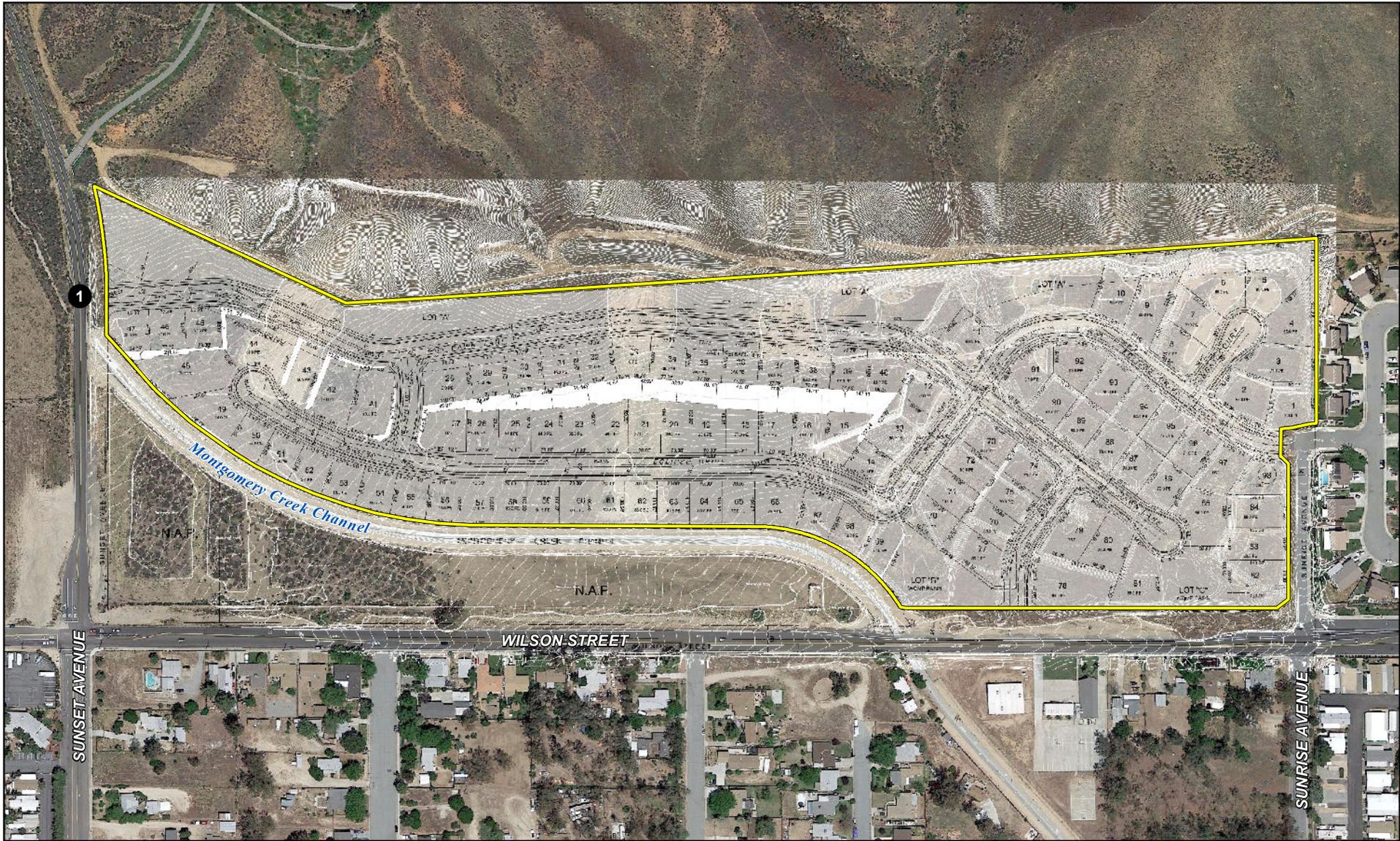
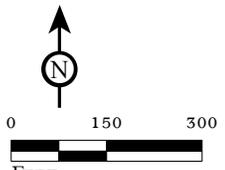


FIGURE 2

LSA

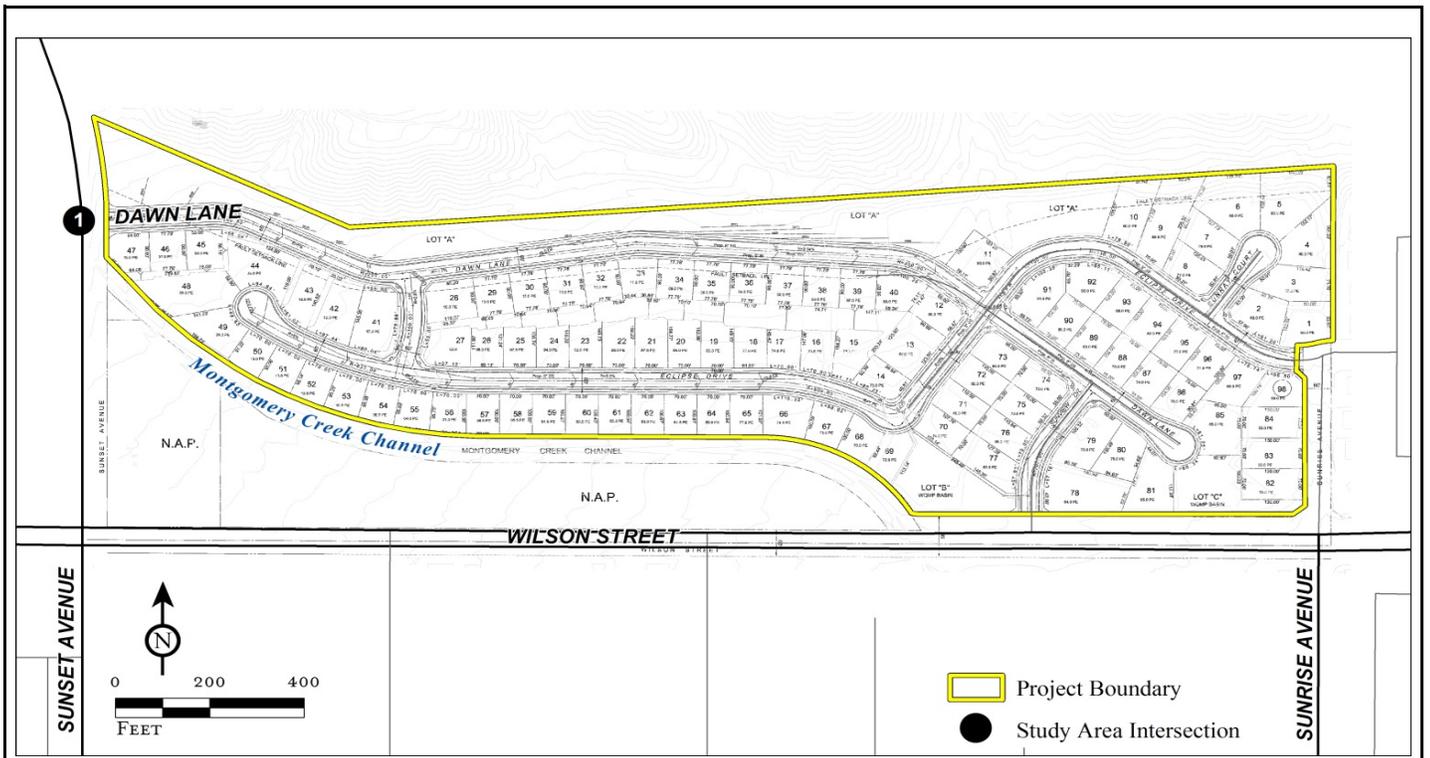
- Project Boundary
- Study Area Intersection



SOURCE: Google Earth, 2014; Otte-Berkeley Groupe, Inc., 2015.

*Banning TTM 36939
 Focused Traffic Impact Study*

Site Plan with Study Area Intersection



Project Distribution and Assignment	Existing Traffic Volumes	Opening Year Traffic Volumes
<p>(50%) 50% ↗ 50% ↘</p>	<p>39 / 29 20 / 36</p>	<p>40 / 30 20 / 37</p>
1 Project Trip Distribution ¹	1 Existing Peak Hour Traffic Volumes ³	1 OY Without Project Peak Hour Traffic Volumes ³
<p>9 / 31 28 / 18</p>	<p>39 / 29 20 / 36 9 / 31</p>	<p>40 / 30 20 / 37 9 / 31</p>
1 Project Trip Assignment ²	1 Existing With Project Peak Hour Traffic Volumes ³	1 OY With Project Peak Hour Traffic Volumes ³

LSA

FIGURE 3

¹ XX% (YY%) Inbound% (Outbound%) Trip Distribution

² XX / YY AM / PM Peak Hour Project Trips

³ XX / YY AM / PM Peak Hour Volumes

ATTACHMENT B: TABLES E THROUGH G

Table E - Project Trip Generation

Land Uses	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Single-Family Residential								
Trips/Unit ¹	98.0 D.U.	0.19	0.56	0.75	0.63	0.37	1.00	9.52
Trip Generation		18	55	73	62	36	98	933
Total New Trips		18	55	73	62	36	98	933

D.U. = Dwelling Units

¹ Rates are based on Land Use 210-"Single-Family Detached Housing" from *Institute of Transportation Engineers (ITE) Trip Generation (9th Edition)*.

Table F - Roadway Segment Levels of Service

Roadway Segment	Functional Classification	Existing				Opening Year			
		Without Project		With Project		Without Project		With Project	
		Daily Volume	LOS	Daily Volume	LOS	Daily Volume	LOS	Daily Volume	LOS
Segments on Sunset Avenue Between Dawn Lane and Wilson Street	2-Lane Collector	794	B	1,260	B	810	B	1,276	B

Notes:

LOS = Level of Service

Capacity based on City of Banning General Plan Update Traffic Study, 2004.

Table G - Intersection Levels of Service

Intersection	Control	Existing								Opening Year							
		Without Project				With Project				Without Project				With Project			
		A.M Peak Hour		P.M Peak Hour		A.M Peak Hour		P.M Peak Hour		A.M Peak Hour		P.M Peak Hour		A.M Peak Hour		P.M Peak Hour	
		Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
1 . Sunset Avenue/Dawn Lane	TWSC	<i>Future Intersection</i>	<i>Future Intersection</i>	9.0	A	9.0	A	<i>Future Intersection</i>	<i>Future Intersection</i>	9.0	A	9.0	A				

Notes:

TWSC = Two-Way Stop Control

Delay = Average control delay in seconds (For TWSC intersections, reported delay is for worst-case movement).

LOS = Level of Service

ATTACHMENT C: TRAFFIC COUNTS

ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

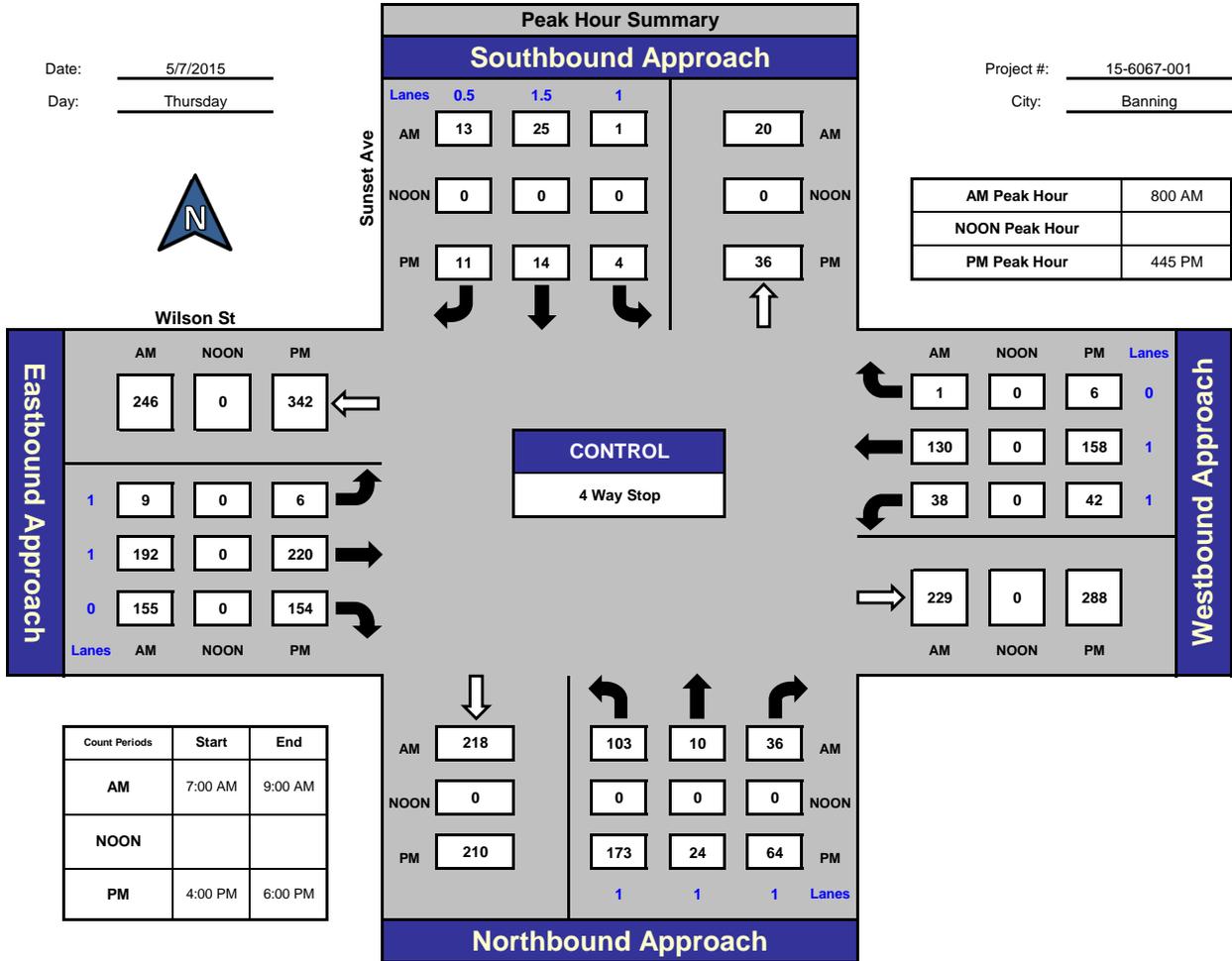
Sunset Ave and Wilson St., Banning

Date: 5/7/2015

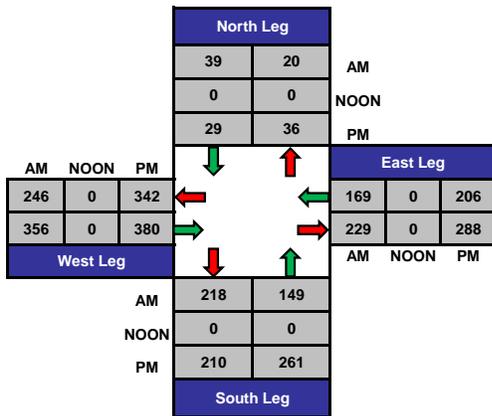
Day: Thursday

Project #: 15-6067-001

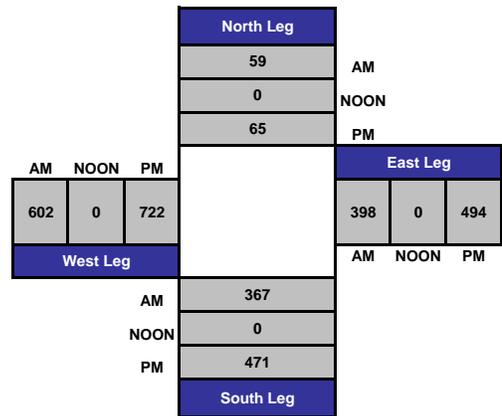
City: Banning



Total Ins & Outs



Total Volume Per Leg



VOLUME

Sunset Ave N/O Wilson St

Day: Thursday
Date: 5/7/2015City: Banning
Project #: CA15_6068_001

DAILY TOTALS					NB	SB	EB	WB	Total		
					413	381	0	0	794		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	1	0			1	12:00	5	7			12
00:15	2	1			3	12:15	7	5			12
00:30	0	0			0	12:30	5	6			11
00:45	0	3	1	2	1	12:45	14	31	3	21	17
01:00	1	0			1	13:00	8	6			14
01:15	0	1			1	13:15	7	8			15
01:30	0	1			1	13:30	7	4			11
01:45	0	1	0	2	0	13:45	5	27	6	24	11
02:00	0	0			0	14:00	5	5			10
02:15	0	0			0	14:15	5	8			13
02:30	0	1			1	14:30	11	5			16
02:45	0	1	2		1	14:45	9	30	6	24	15
03:00	0	0			0	15:00	8	0			8
03:15	0	1			1	15:15	6	5			11
03:30	0	1			1	15:30	15	7			22
03:45	0	1	3		1	15:45	11	40	8	20	19
04:00	0	0			0	16:00	13	6			19
04:15	0	1			1	16:15	13	5			18
04:30	0	0			0	16:30	11	3			14
04:45	0	1	2		1	16:45	6	43	12	26	18
05:00	0	1			1	17:00	15	4			19
05:15	0	3			3	17:15	7	7			14
05:30	0	3			3	17:30	8	6			14
05:45	1	1	3	10	4	17:45	16	46	6	23	22
06:00	1	2			3	18:00	11	3			14
06:15	1	8			9	18:15	3	4			7
06:30	0	1			1	18:30	6	2			8
06:45	2	4	14	25	16	18:45	3	23	2	11	5
07:00	4	9			13	19:00	6	1			7
07:15	3	14			17	19:15	9	1			10
07:30	8	10			18	19:30	3	2			5
07:45	5	20	9	42	14	19:45	7	25	1	5	8
08:00	3	14			17	20:00	5	4			9
08:15	7	8			15	20:15	7	0			7
08:30	4	6			10	20:30	3	1			4
08:45	6	20	11	39	17	20:45	5	20	1	6	6
09:00	4	4			8	21:00	5	1			6
09:15	4	10			14	21:15	7	2			9
09:30	4	7			11	21:30	1	1			2
09:45	7	19	8	29	15	21:45	1	14	2	6	3
10:00	1	7			8	22:00	1	1			2
10:15	4	10			14	22:15	3	0			3
10:30	3	12			15	22:30	2	2			4
10:45	7	15	7	36	14	22:45	3	9	1	4	4
11:00	2	4			6	23:00	0	0			0
11:15	11	3			14	23:15	1	0			1
11:30	3	6			9	23:30	0	0			0
11:45	5	21	6	19	11	23:45	0	1	0		0
TOTALS	104	211			315	TOTALS	309	170			479
SPLIT %	33.0%	67.0%			39.7%	SPLIT %	64.5%	35.5%			60.3%

DAILY TOTALS					NB	SB	EB	WB	Total		
					413	381	0	0	794		
AM Peak Hour	11:15	06:45		07:15	PM Peak Hour	15:30	16:45		15:30		
AM Pk Volume	24	47		66	PM Pk Volume	52	29		78		
Pk Hr Factor	0.545	0.839		0.917	Pk Hr Factor	0.867	0.604		0.886		
7 - 9 Volume	40	81	0	0	121	4 - 6 Volume	89	49	0	0	138
7 - 9 Peak Hour	07:30	07:15		07:15	4 - 6 Peak Hour	17:00	16:45				16:00
7 - 9 Pk Volume	23	47	0	0	66	4 - 6 Pk Volume	46	29	0	0	69
Pk Hr Factor	0.719	0.839	0.000	0.000	0.917	Pk Hr Factor	0.719	0.604	0.000	0.000	0.908

ATTACHMENT D: VOLUME DEVELOPMENT WORKSHEETS

Table D-1 - Existing Peak Hour Volume Summary

	A.M. Peak Hour			P.M. Peak Hour		
	Existing	Existing	Existing	Existing	Existing	Existing
	Without Project	Project Trips	With Project	Without Project	Project Trips	With Project
1	Sunset Avenue/Dawn Lane					
NBL	0	0	0	0	0	0
NBT	20	0	20	36	0	36
NBR	0	9	9	0	31	31
SBL	0	0	0	0	0	0
SBT	39	0	39	29	0	29
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	0	28	28	0	18	18
WBT	0	0	0	0	0	0
WBR	0	0	0	0	0	0
North Leg						
Approach	39	0	39	29	0	29
Departure	20	0	20	36	0	36
Total	59	0	59	65	0	65
South Leg						
Approach	20	9	29	36	31	67
Departure	39	28	67	29	18	47
Total	59	37	96	65	49	114
East Leg						
Approach	0	28	28	0	18	18
Departure	0	9	9	0	31	31
Total	0	37	37	0	49	49
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	59	37	96	65	49	114
Departure	59	37	96	65	49	114
Total	118	74	192	130	98	228

Table D-2 - Opening Year Peak Hour Volume Summary

	A.M. Peak Hour					P.M. Peak Hour					
	Existing Without Project	'2015- OY Growth	OY Without Project	Project Trips	OY With Project	Existing Without Project	'2015- OY Growth	OY Without Project	Project Trips	OY With Project	
1	Sunset Avenue/Dawn Lane					1	Sunset Avenue/Dawn Lane				
NBL	0	0	0	0	0	NBL	0	0	0	0	
NBT	20	0	20	0	20	NBT	36	1	37	0	
NBR	0	0	0	9	9	NBR	0	0	0	31	
SBL	0	0	0	0	0	SBL	0	0	0	0	
SBT	39	1	40	0	40	SBT	29	1	30	0	
SBR	0	0	0	0	0	SBR	0	0	0	0	
EBL	0	0	0	0	0	EBL	0	0	0	0	
EBT	0	0	0	0	0	EBT	0	0	0	0	
EBR	0	0	0	0	0	EBR	0	0	0	0	
WBL	0	0	0	28	28	WBL	0	0	0	18	
WBT	0	0	0	0	0	WBT	0	0	0	0	
WBR	0	0	0	0	0	WBR	0	0	0	0	
North Leg						North Leg					
Approach	39	1	40	0	40	Approach	29	1	30	0	
Departure	20	0	20	0	20	Departure	36	1	37	0	
Total	59	1	60	0	60	Total	65	2	67	0	
South Leg						South Leg					
Approach	20	0	20	9	29	Approach	36	1	37	31	
Departure	39	1	40	28	68	Departure	29	1	30	18	
Total	59	1	60	37	97	Total	65	2	67	49	
East Leg						East Leg					
Approach	0	0	0	28	28	Approach	0	0	0	18	
Departure	0	0	0	9	9	Departure	0	0	0	31	
Total	0	0	0	37	37	Total	0	0	0	49	
West Leg						West Leg					
Approach	0	0	0	0	0	Approach	0	0	0	0	
Departure	0	0	0	0	0	Departure	0	0	0	0	
Total	0	0	0	0	0	Total	0	0	0	0	
Total Approaches						Total Approaches					
Approach	59	1	60	37	97	Approach	65	2	67	49	
Departure	59	1	60	37	97	Departure	65	2	67	49	
Total	118	2	120	74	194	Total	130	4	134	98	

ATTACHMENT E: LEVEL OF SERVICE WORKSHEETS

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	20	0	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	22	0	0	42

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	64	22	0
Stage 1	22	-	-
Stage 2	42	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	947	1061	1607
Stage 1	1006	-	-
Stage 2	986	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	947	1061	1607
Mov Cap-2 Maneuver	947	-	-
Stage 1	1006	-	-
Stage 2	986	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1607	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	0	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	36	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	39	0	0	32

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	71	39	0
Stage 1	39	-	-
Stage 2	32	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	938	1038	1584
Stage 1	989	-	-
Stage 2	996	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	938	1038	1584
Mov Cap-2 Maneuver	938	-	-
Stage 1	989	-	-
Stage 2	996	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1584	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	0	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	28	0	20	9	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	30	0	22	10	0	42

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	69	27	0
Stage 1	27	-	-
Stage 2	42	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	941	1054	1593
Stage 1	1001	-	-
Stage 2	986	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	941	1054	1593
Mov Cap-2 Maneuver	941	-	-
Stage 1	1001	-	-
Stage 2	986	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	941	1593	-
HCM Lane V/C Ratio	-	-	0.032	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	18	0	36	31	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	0	39	34	0	32

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	88	56	0
Stage 1	56	-	-
Stage 2	32	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	918	1016	1540
Stage 1	972	-	-
Stage 2	996	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	918	1016	1540
Mov Cap-2 Maneuver	918	-	-
Stage 1	972	-	-
Stage 2	996	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 918	1540	-
HCM Lane V/C Ratio	-	- 0.021	-	-
HCM Control Delay (s)	-	- 9	0	-
HCM Lane LOS	-	- A	A	-
HCM 95th %tile Q(veh)	-	- 0.1	0	-

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	20	0	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	22	0	0	43

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	65	22	0
Stage 1	22	-	-
Stage 2	43	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	946	1061	1607
Stage 1	1006	-	-
Stage 2	985	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	946	1061	1607
Mov Cap-2 Maneuver	946	-	-
Stage 1	1006	-	-
Stage 2	985	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1607	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	0	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	37	0	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	40	0	0	33

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	73	40	0
Stage 1	40	-	-
Stage 2	33	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	936	1037	1583
Stage 1	988	-	-
Stage 2	995	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	936	1037	1583
Mov Cap-2 Maneuver	936	-	-
Stage 1	988	-	-
Stage 2	995	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1583	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	28	0	20	9	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	30	0	22	10	0	43

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	70	27	0
Stage 1	27	-	-
Stage 2	43	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	939	1054	1593
Stage 1	1001	-	-
Stage 2	985	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	939	1054	1593
Mov Cap-2 Maneuver	939	-	-
Stage 1	1001	-	-
Stage 2	985	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1593	-
HCM Lane V/C Ratio	-	-	0.032	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	18	0	37	31	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	0	40	34	0	33

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	90	57	0 0 74 0
Stage 1	57	-	- - - -
Stage 2	33	-	- - - -
Critical Hdwy	6.4	6.2	- - 4.1 -
Critical Hdwy Stg 1	5.4	-	- - - -
Critical Hdwy Stg 2	5.4	-	- - - -
Follow-up Hdwy	3.5	3.3	- - 2.2 -
Pot Cap-1 Maneuver	915	1015	- - 1538 -
Stage 1	971	-	- - - -
Stage 2	995	-	- - - -
Platoon blocked, %			- - - -
Mov Cap-1 Maneuver	915	1015	- - 1538 -
Mov Cap-2 Maneuver	915	-	- - - -
Stage 1	971	-	- - - -
Stage 2	995	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 915	1538	-
HCM Lane V/C Ratio	-	- 0.021	-	-
HCM Control Delay (s)	-	- 9	0	-
HCM Lane LOS	-	- A	A	-
HCM 95th %tile Q(veh)	-	- 0.1	0	-

Appendix D

JURISDICTIONAL DELINEATION REPORT

TENTATIVE TRACT 36939 PROJECT

THE CITY OF BANNING, CALIFORNIA

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TABLE OF CONTENTS

INTRODUCTION.....	1
PROJECT LOCATION AND DESCRIPTION	1
REGULATORY BACKGROUND.....	3
United States Army Corps of Engineers	3
Wetlands.....	4
California Department of Fish and Wildlife	7
Regional Water Quality Control Board.....	8
EXISTING SETTING.....	8
METHODOLOGY.....	11
RESULTS AND DISCUSSION	11
Wetland and Non-Wetland Waters of the U.S./Streambed Resources.....	11
California Department of Fish and Wildlife	12
FUNCTIONS AND VALUES OF WETLANDS	12
Wildlife Habitat.....	12
Endangered Species Habitat.....	13
Nutrient Production.....	13
Nutrient Export.....	13
Flood Storage	13
Water Purification	14
Sediment Retention.....	14
Sediment Detoxification.....	14
Groundwater Discharge and Recharge.....	14
CONCLUSIONS.....	15
U.S. Army Corps of Engineers	15
California Department of Fish and Wildlife	15
REFERENCES.....	16

FIGURES

Figure 1: Regional and Project Location.....	2
Figure 2: Potential Waters of the U.S./CDFW Streambed.....	9
Figure 3: Site Photographs	10

TABLES

Table A: Hydrophytic Vegetation	6
Table B: Potential Jurisdictional Waters of the U.S.....	11
Table C: Potential CDFW Jurisdictional Streambed.....	12

APPENDIX

APPENDIX A Preliminary Jurisdictional Determination Form	A-1
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INTRODUCTION

This report presents the results of a jurisdictional delineation conducted by LSA Associates, Inc. (LSA). The report summarizes the results of fieldwork conducted to identify the limits of potential wetlands and non-wetland waters of the United States subject to the jurisdiction of the United States Army Corps of Engineers (ACOE) and Regional Water Quality Control Board (RWQCB) pursuant to Sections 404 and 401 of the Federal Clean Water Act (CWA), respectively; and streambeds, water bodies, and associated habitat subject to California Department of Fish and Wildlife (CDFW) regulation pursuant to the California Fish and Game Code. LSA delineated three unnamed drainages located in The City of Banning, Riverside County, California (Figure 1). This report has been prepared for Diversified Pacific for purposes of identifying aquatic resource limits for design consideration with the intent of minimizing and avoiding impacts to aquatic resources to the greatest extent feasible, and for submittal to the ACOE, CDFW, and RWQCB as part of their review of applications for permit authorization, if project impacts trigger the need for such permits.

This routine jurisdictional delineation was conducted under contract with Diversified Pacific. The findings and conclusions presented in this report, including the location and extent of aquatic resources subject to regulatory jurisdiction, represent the professional opinion of LSA and should be considered preliminary until verified by representatives of the ACOE, CDFW, and RWQCB.

PROJECT LOCATION AND DESCRIPTION

The project site consists of the following Assessor's Parcel Numbers (APNs): 535-430-001 through 535-430-021, 535-431-001 through 535-431-015, 535-432-001 through 535-432-017, 535-070-004, and 535-070-006. It is located northeast of the intersection of Wilson Avenue and Sunset Avenue, as depicted on the U.S. Geological Survey (USGS) 7.5-minute *Beaumont, California* quadrangle in projected Section 5, Township 3 South, Range 1 East (Figure 1). The project proposes to construct 98 single-family residential units.

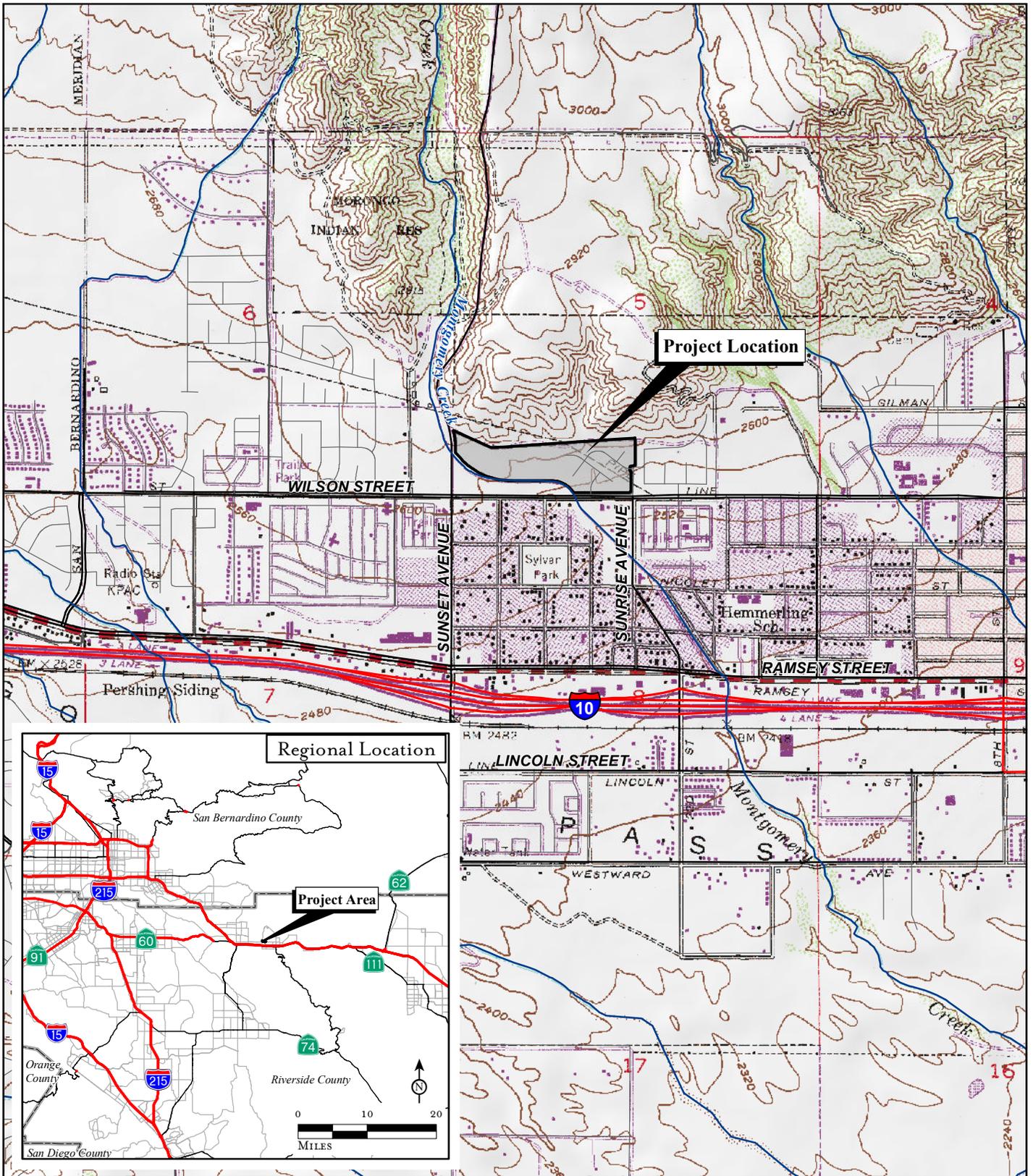
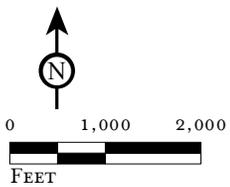


FIGURE 1

LSA



*Banning Tract 36939
Jurisdictional Delineation Report*

SOURCE: USGS 7.5' Quad: Beaumont, 1988, CA; County of Riverside, 2015; National Hydrography Dataset, 2010.

Regional and Project Location

REGULATORY BACKGROUND

United States Army Corps of Engineers

The ACOE regulates discharges of dredged or fill material into waters of the United States. These waters include wetland and non-wetland bodies of water that meet specific criteria. ACOE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in the ACOE regulations). The following definition of waters of the United States is taken from the discussion provided at 33 Code of Federal Regulations (CFR) 328.3:

The term waters of the United States means:

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce ...;
- (2) All interstate waters including interstate wetlands;
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) ... the use, degradation or destruction of which could affect interstate or foreign commerce ...;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition; and
- (5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section.

The ACOE typically regulates as waters of the United States a body of water displaying an ordinary high water mark (OHWM). ACOE jurisdiction over nontidal waters of the United States extends laterally to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present (33 CFR 328.4). The OHWM is defined as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area” (33 CFR 328.3). Jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

As discussed above, ACOE regulatory jurisdiction under Section 404 of the CWA is founded on a connection between the water body in question and interstate commerce. In the past, an indirect nexus could potentially be established if isolated waters provided habitat for migratory birds, even in the absence of a surface connection to a navigable water of the United States. The 1984 rule that enabled the ACOE to expand jurisdiction over isolated waters of this type became known as the Migratory Bird Rule. However, on January 9, 2001, the United States Supreme Court narrowly limited ACOE jurisdiction of “nonnavigable, isolated, intrastate” waters based solely on the use of such waters by migratory birds and particularly, the use of indirect indicators of interstate commerce (e.g., use by migratory birds that cross state lines) as a basis for jurisdiction. The Court’s ruling derives from the case *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, No. 99-1178 (SWANCC). The Supreme Court determined that the ACOE exceeded its statutory authority by asserting CWA jurisdiction over an abandoned sand and gravel pit in northern Illinois, which provides habitat for migratory birds.

In 2006, the United States Supreme Court further considered ACOE jurisdiction of “waters of the United States” in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208), collectively referred to as *Rapanos*. The Supreme Court concluded that wetlands are “waters of the United States” if they significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as navigable. On June 5, 2007, the ACOE issued guidance regarding the *Rapanos* decision. This guidance states that the ACOE will continue to assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries that have a continuous flow at least seasonally (typically three months), and wetlands that abut relatively permanent tributaries. The ACOE will determine jurisdiction over waters that are non-navigable tributaries that are not relatively permanent and wetlands adjacent to non-navigable tributaries that are not relatively permanent only after making a significant nexus finding.

Furthermore, the preamble to ACOE regulations (Preamble Section 328.3, Definitions) states that the ACOE does not generally consider the following waters to be waters of the U.S. The ACOE does, however, reserve the right to regulate these waters on a case-by-case basis.

- Nontidal drainage and irrigation ditches excavated on dry land;
- Artificially irrigated areas that would revert to upland if the irrigation ceased;
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons; and
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for purposes of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the U.S.

Waters found to be isolated and not subject to CWA regulation are often still regulated by the Regional Water Quality Control Board (RWQCB) under the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Wetlands

Wetland delineations for Section 404 purposes must be conducted according to the Regional Supplement to the *Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (Regional Supplement) (ACOE 2008) and the *Corps of Engineers 1987 Wetland Delineation Manual* (1987 Manual) (Environmental Laboratory 1987). Where there are differences between the two documents, the Regional Supplement takes precedence over the 1987 Manual. The ACOE and United States Environmental Protection Agency (EPA) define wetlands as follows:

Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances

do support, a prevalence of vegetation typically adapted to life in saturated soil conditions.”

In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met. Several indicators may be analyzed to determine whether the criteria are satisfied.

Hydrophytic vegetation and hydric soils indicators provide evidence that episodes of inundation have lasted more than a few days or have occurred repeatedly over a period of years, but do not confirm that an episode has occurred recently. Conversely, wetland hydrology indicators provide evidence that an episode of inundation or soil saturation occurred recently, but do not provide evidence that episodes have lasted more than a few days or have occurred repeatedly over a period of years. Because of this, if an area lacks one of the three characteristics under normal circumstances, the area is considered nonwetland under most circumstances.

Determination of wetland limits may be obfuscated by a variety of natural environmental factors or human activities, collectively called difficult wetland situations, including cyclic periods of drought and flooding or highly ephemeral stream systems. During periods of drought, for example, bank return flows are reduced and water tables are lowered. This results in a corresponding lowering of ordinary high water and invasion of upland plant species into wetland areas. Conversely, extreme flooding may create physical evidence of high water well above what might be considered ordinary and may allow the temporary invasion of hydrophytic species into nonwetland areas. In highly ephemeral systems typical of southern California, these problems are encountered frequently. In these situations, professional judgment based on years of practical experience and extensive knowledge of local ecological conditions comes into play in delineating wetlands. The *Regional Supplement* provides additional guidance for difficult wetland situations.

Hydrophytic Vegetation. Hydrophytic vegetation is plant life that grows and is typically adapted for life in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, herb, and woody vine layers) are considered hydrophytic. Hydrophytic species are those included on the *National Wetland Plant List: 2014 Update of Wetland Ratings* (Lichvar et al. 2014), published by the ACOE. Each species on the list is rated according to a wetland indicator category, as shown in Table A. To be considered hydrophytic, the species must have wetland indicator status (i.e., be rated as OBL, FACW, or FAC).

Table A: Hydrophytic Vegetation

Category		Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability > 99%)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67–99%)
Facultative	FAC	Equally likely to occur in wetlands and nonwetlands (estimated probability 34–66%)
Facultative Upland	FACU	Usually occur in nonwetlands (estimated probability 67–99%)
Obligate Upland	UPL	Almost always occur in nonwetlands (estimated probability > 99%)

The delineation of hydrophytic vegetation is typically based on the most dominant species from each vegetative stratum (strata are considered separately); when more than 50 percent of these dominant species are hydrophytic (i.e., FAC, FACW, or OBL), the vegetation is considered hydrophytic. In particular, the ACOE recommends the use of the “50/20” rule (also known as the dominance test) from the *Regional Supplement* for determining dominant species. Under this method, dominant species are the most abundant species that immediately exceed 50 percent of the total dominance measure for the stratum, plus any additional species comprising 20 percent or more of the total dominance measure for the stratum. In cases where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test, the prevalence index must be used. The prevalence index is a weighted average of all plant species within a sampling plot. The prevalence index is particularly useful when communities only have one or two dominants, where species are present at roughly equal coverage, or when strata differ greatly in total plant cover. In addition, ACOE guidance provides that morphological adaptations may be considered when determining hydrophytic vegetation when indicators of hydric soil and wetland hydrology are present (ACOE 2006). If the plant community passes either the dominance test or prevalence index after reconsidering the indicator status of any plant species that exhibit morphological adaptations for life in wetlands, then the vegetation is considered hydrophytic.

Hydric Soils.¹ Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.² Soils are considered likely to meet the definition of a hydric soil when one or more of the following criteria are met:

¹ The hydric soil definition and criteria included in the 1987 Manual are obsolete. Users of the Manual are directed to the United States Department of Agriculture (USDA) Natural Resources Conservation Service Web site for the most current information on hydric soils.

² Current definition as of 1994 (FR July 13, 1994).

1. All Histels except Folistels and Histosols except Folists; or
2. Soils that are frequently ponded for long duration or very long duration³ during the growing season; or
3. Soils that are frequently flooded for long duration or very long duration during the growing season.

Hydric soils develop under conditions of saturation and inundation combined with microbial activity in the soil that causes a depletion of oxygen. While saturation may occur at any time of year, microbial activity is limited to the growing season, when soil temperature is above biologic zero (the soil temperature at a depth of 50 centimeters, below which the growth and function of locally adapted plants are negligible). Biogeochemical processes that occur under anaerobic conditions during the growing season result in the distinctive morphologic characteristics of hydric soils. Based on these criteria, a National List of Hydric Soils was created from the National Soil Information System (NASIS) database and is updated annually.

The *Regional Supplement* has a number of field indicators that may be used to identify hydric soils. Natural Resources Conservation Service (NRCS) (2003) has also developed a number of field indicators that may demonstrate the presence of hydric soils. These indicators include hydrogen sulfide generation, accumulation of organic matter, and the reduction, translocation and/or accumulation of iron and other reducible elements. These processes result in soil characteristics that persist during both wet and dry periods. Separate indicators have been developed for sandy soils and for loamy and clayey soils.

Wetland Hydrology. Under natural conditions, development of hydrophytic vegetation and hydric soils are dependent on a third characteristic: wetland hydrology. Areas with wetland hydrology are those where the presence of water has an overriding influence on vegetation and soil characteristics due to anaerobic and reducing conditions, respectively (Environmental Laboratory 1987). The wetland hydrology criterion is satisfied if the area is seasonally inundated or saturated to the surface for a minimum of 14 consecutive days during the growing season in most years (ACOE 2008). Hydrology is often the most difficult criterion to measure in the field due to seasonal and annual variations in water availability. Some of the indicators that are commonly used to identify wetland hydrology include visual observation of inundation or saturation, watermarks, recent sediment deposits, surface scour, and oxidized root channels (rhizospheres) resulting from prolonged anaerobic conditions.

California Department of Fish and Wildlife

The CDFW, through provisions of the California Fish and Game Code (Sec. 1600 et seq.), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least an intermittent flow of water. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW. Also, the CDFW typically does not regulate estuaries below the mouth of a tributary river or stream.

³ Long duration is defined as a single event ranging from 7 to 30 days; very long duration is defined as a single event that lasts longer than 30 days.

In obtaining CDFW agreements, the limits of wetlands are not typically determined. The reason for this is that the CDFW generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), and other vegetation typically associated with the banks of a stream or lake shorelines and may not be consistent with ACOE definitions. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas and may include additional areas that do not meet ACOE criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils).

Regional Water Quality Control Board

The RWQCB is responsible for the administration of Section 401 of the CWA and the California Water Code Porter-Cologne Water Quality Control Act (Water Code Section 13260). Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. The Porter-Cologne Act requires “any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State” to file a report of discharge. Typically, the areas regulated by the RWQCB coincide with those of the ACOE (i.e., waters of the U.S., including any wetlands).

EXISTING SETTING

The project site is situated at the northeast corner of Wilson Avenue and Sunset Avenue in the City of Banning. The site is undeveloped, but the eastern half of the project site had previously been graded for home sites as late as 2009. The entire project site has been vacant since that time. The site is bordered on the west and north by undeveloped open space, and to the east and south by single-family homes and rural residences.

The historical topography of the project site is relatively flat with slight, hilly undulations. The site slopes gently to the south. This topography still exists at the west end of the project site; however, the east end of the project site has been graded for home sites and the topography has been altered to have elevated plateaus for tiered lots. The general elevation of the site ranges from approximately 2,550 to 2,650 feet above mean sea level.

The project site is highly disturbed due to past and current land use practices. As a result of the disturbance caused by these land use practices, the vegetation on the project site is dominated by ruderal vegetation. The east side of the project site consists almost solely of Russian thistle (*Salsola tragus*) and the west side of the project site consists primarily of non-native grasslands where red brome (*Bromus madritensis*), ripgut brome (*Bromus diandrus*), and wild oat (*Avena fatua*) are dominant. Small isolated polygons of California buckwheat (*Eriogonum fasciculatum*) and California sagebrush (*Artemisia californica*) are dispersed within the nonnative grasses on the western half of the project site. Figure 2 shows the three drainages identified on site (arbitrarily named Drainages D1, D2, and D3 for purposes of this report) and Figure 3 show site photos.

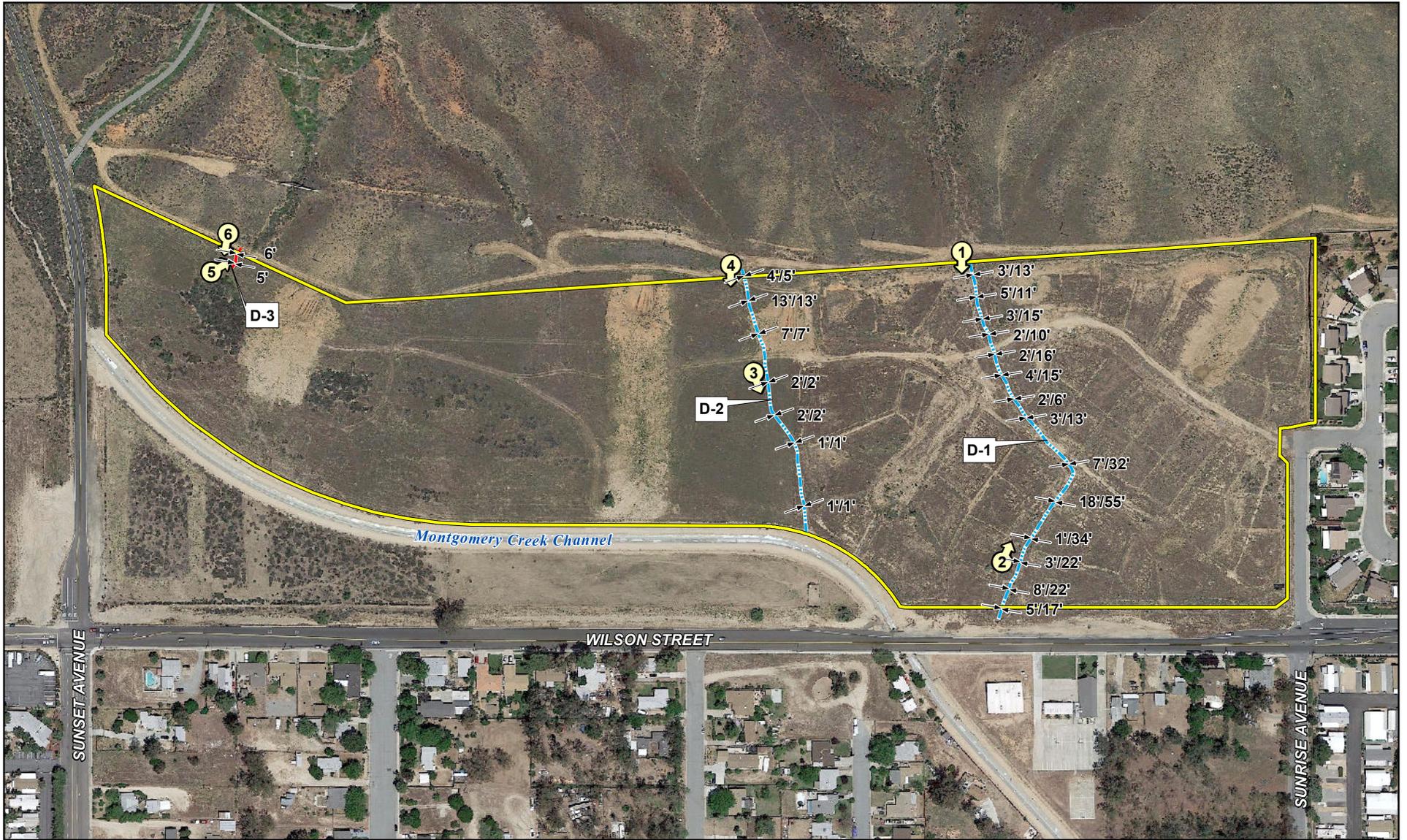
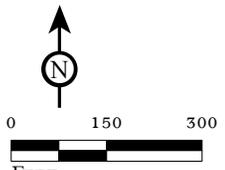


FIGURE 2

LSA



- Project Boundary
- Potential Waters of the U.S./CDFW Streambed
- Potential CDFW Streambed
- 1'1" Drainage Width (ACOE/CDFW)

Banning Tract 36939
Jurisdictional Delineation Report

Potential Waters of the U.S./CDFW Streambed



PHOTOGRAPH 1: *View of Drainage D-1 as seen facing south.*



PHOTOGRAPH 2: *View of drainage D-1 as seen facing northeast.*



PHOTOGRAPH 3: *View of overgrown Drainage D-2 as seen facing south.*



PHOTOGRAPH 4: *View of drainage D-4 as seen facing south.*



PHOTOGRAPH 5: *View of Drainage D-3 as seen facing northeast.*



PHOTOGRAPH 6: *View of a large patch of buckwheat scrub at the terminus of drainage D-3.*

LSA

FIGURE 3

*Banning Tract 36939
Jurisdictional Delineation Report
Site Photographs*

METHODOLOGY

Prior to conducting the fieldwork associated with this jurisdictional delineation, LSA obtained the necessary aerial photographs and topographic maps needed for completing a jurisdictional delineation. The entire project site was surveyed on foot for potential wetlands and non-wetland jurisdictional waters as well as streambed and riparian resources. General site characteristics were also noted. Areas supporting species of plant life potentially indicative of wetlands, exhibiting a bed and bank, and/or an Ordinary High Water Mark (OHWM), were evaluated according to routine wetland delineation procedures described in the ACOE *Wetlands Delineation Manual* (Environmental Laboratory, 1987), and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Environmental Laboratory, 2008) (Manual). Those areas identified as potential jurisdictional waters of the U.S./streambeds of the CDFW were examined in the field for evidence of jurisdiction (wetland parameters, OHWM, streambed and bank, and/or riparian habitat). The ACOE OHWM widths and CDFW streambed widths were measured in the field and mapped on an aerial photograph (scale 1 inch = 400 feet). Additionally, the project site was examined to determine the extent of CDFW jurisdiction.

RESULTS AND DISCUSSION

Wetland and Non-Wetland Waters of the U.S./Streambed Resources

Both Drainages D1 and D2 drain southeast through the project site. D1 and D2 convey flows through the site into Montgomery Creek Channel which borders the southern boundary of the project site. Drainage D3 appears to be an erosional feature associated with the water towers north of the project site, and not a relatively permanent water that the ACOE would typically regulate. Historic aerial photographs do not show any evidence of the drainage on site prior to the water tower installation just north of the project site. D3 does not appear to have any connectivity to any waterway including the Montgomery Creek Channel south of the project site. The Preliminary Jurisdictional Determination Form (Appendix A), lists D1 and D2 as potentially jurisdictional waterways.

The Montgomery Creek Channel conveys flows under Interstate 10 to Smith Creek. Smith Creek flows into the San Geronio River, to the Whitewater River, which is a direct tributary to the Salton Sea. The Salton Sea is considered to be a navigable water of the U.S. Table B, below, shows potential waters of the U.S. occurring on the project site.

Table A: Potential Jurisdictional Waters of the U.S.

Drainage ID	ACOE Non-Wetland Waters (Acres)
D1	0.106
D2	0.049
Total	0.155

Soils. The soils on the project site include the following:

- Gorgonio gravelly loamy fine sand, 2 to 15 percent slopes;
- Hanford coarse sandy loam, 8 to 15 percent slopes, eroded;
- Hanford sandy loam, 2 to 15 percent slopes; and
- Riverwash.

Hydrology/OHWM. Wetland hydrology indicators identified within the drainages included water marks and sediment deposits.

Significant Nexus. Drainages D1 and D2 flow into Montgomery Creek Channel and convey flows under Interstate 10 to Smith Creek. Smith Creek flows into the San Gorgonio River, which then flows into the Whitewater River, which is a direct tributary to the Salton Sea. D3 does not appear to connect with any waterway via tributary and/or by virtue of any chemical, biological, or physical integrity nexus.

California Department of Fish and Wildlife

Vegetation within drainages D1, D2, and D3 includes ruderal upland species such as Russian thistle, California buckwheat, and brome grasses which are not considered riparian species or those species associated with riparian habitat. CDFW typically asserts jurisdiction over habitats associated with streams. It is anticipated that the drainage ditches from bank to bank would be subject to CDFW regulatory jurisdiction. Table C, below, shows potential CDFW jurisdictional streambed occurring on the project site.

Table C: Potential CDFW Jurisdictional Streambed

Drainage ID	CDFW Streambed (Acres)
D1	0.445
D2	0.050
D3	0.004
Total	0.499

FUNCTIONS AND VALUES OF WETLANDS

All wetlands and other waters have some degree of functionality. The drainages on site were evaluated according to the functions discussed below. Functions have been evaluated at low, moderate, or high levels and are provided in the discussion below.

Wildlife Habitat

The “wildlife habitat” function is the ability of the wetland or other water to provide habitat for various types of animals typically associated with wetlands and riparian habitats. Both resident and migrating species are considered in this function.

Low-quality habitat value for wildlife is present within drainages D1, D2, and D3. These drainages are considered low quality habitat for wildlife because they are erosional in nature and are sparsely vegetated with ruderal upland species.

Endangered Species Habitat

The “endangered species habitat” function is the ability of a wetland or other waters to provide habitat for endangered species typically associated with wetlands, and other waters. Both resident and migrating species are considered in this function.

Habitat within is considered to be of low value to endangered species as a result of the lack of suitable habitat for endangered species with the potential to occur within the project site.

Fish Habitat

Because the drainage channels located on the project site are ephemeral, the project site contains no habitat for fish.

Nutrient Production

This function is the effectiveness of the wetland or other water to retain and/or transform inorganic phosphorus and/or nitrogen into their organic forms or transform (remove) nitrogen in its gaseous form.

Nutrient production for the drainages found within the project site provides low value to biological resources downstream due to sparseness and lack of riparian vegetation. The nutrient production for all drainages found within the project site is not expected to be substantial.

Nutrient Export

This function is the capability of a wetland or other water to flush relatively large amounts of organic plant material into downslope waters. There may be instances where export represents a nutrient loss to the system or where exported material causes water quality problems down slope.

All three drainages within the project area are considered of low value for nutrient export.

Flood Storage

This function is the effectiveness of the wetlands or their waters to reduce flood damage and attenuation of floodwater for prolonged periods following rain events.

The upland vegetation in drainages found within the project site may slow down flows slightly during periods of flooding, minimally absorb wave energy to reduce erosion, and assist in the process of sediment deposition. There are no wetlands outside the drainage channels that would provide

overbank flood storage. Flood storage is thus considered a low value in all of the drainages found within the project site.

Flood storage for all of the drainages within the project site is considered to be of low value because they lack dense riparian vegetation.

Water Purification

This function is the ability of a wetland or other water to filter and absorb soil particles and living organisms in water and soil. Upstream runoff from predominantly urban land uses in the proposed project area can contain toxins and other contaminants. These include residual pesticides, fertilizers, and petroleum products. Toxins and other pollutants may be present during periods of peak runoff. Water purification is considered to be low value within all three drainages as they do not carry large volumes of water during a storm event. These factors prevent the drainages from filtering and absorbing soil particles and living organisms in water and soil, therefore providing a low value for water purification.

Sediment Retention

This function is the ability of a wetland or other water to bind soil and dissipate erosive forces. The drainages within the project site provide low value of sediment retention due to the lack of riparian vegetation.

Sediment Detoxification

This function is the efficiency with which a wetland or other water physically or chemically traps and retains inorganic sediments and/or chemical substances generally toxic to wildlife. Sediment detoxification is considered a low value for drainages D1-D3 due to the lack of vegetation to physically trap and retain inorganic sediments.

Groundwater Discharge and Recharge

This function involves the potential for the wetland or other water to contribute to an aquifer or the potential to serve as an area where groundwater can be discharged to the surface.

Groundwater discharge and recharge are considered to have a low value within drainages D1 – D3. The drainages do not carry large volumes of water during storm events. Which prevents those drainages from providing groundwater discharge and recharge and therefore these drainages are considered to be of low value.

CONCLUSIONS

U.S. Army Corps of Engineers

A total of 0.155 acre of potential ACOE nonwetland waters of the U.S. were found to be present within the project site. No potential wetland waters of the U.S. were found.

The conclusions presented above are subject to verification by the ACOE.

California Department of Fish and Wildlife

A total of 0.499 acre of potential CDFW streambed were found to be present within the project site. No CDFW potential riparian habitat is present within the project area.

The conclusions above are subject to verification by the CDFW.

Additionally, drainages D1 and D2 may be regulated by the RWQCB under the Clean Water Act and D3 under Porter-Cologne Water Quality Control Act. Temporary impacts associated with ground disturbance within areas of CDFW jurisdiction can be avoided through implementation of appropriate avoidance measures. The results of this jurisdictional delineation are subject to CDFW concurrence.

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APPENDIX A

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office	Los Angeles District	File/ORM #		PJD Date:	06/19/15
State	CA	City/County	Riverside County	Name/ Address of Person Requesting PJD	Peter J. Pitassi, AIA, LEED AP Senior Vice President Community Design and Forward Planning Diversified Pacific 10621 Civic Center Drive Rancho Cucamonga, CA 91730
Nearest Waterbody:	Salton Sea				
Location: TRS, Lat/Long or UTM:	T03S, R01E, S5 See page 2 for all drainage coordinates				

Identify (Estimate) Amount of Waters in the Review Area:	Name of Any Water Bodies on the Site Identified as	Tidal:	
Non-Wetland Waters:	Section 10 Waters:	Non-Tidal:	
1461 linear ft <input type="checkbox"/> width 0.155 acres <input type="checkbox"/> Stream Flow: Ephemeral			
Wetlands: <input type="checkbox"/> acre(s) Cowardin Class: N/A	<input type="checkbox"/> Office (Desk) Determination	<input type="checkbox"/> Field Determination:	Date of Field Trip: <input type="text"/>

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite quad name:
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name:
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is:
- Photographs: Aerial (Name & Date):
 Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)	Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)
-------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office	Los Angeles District	File/ORM #		PJD Date:	06/19/15
State	CA	City/County	Riverside	Person Requesting PJD	Peter Pitassi

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
D1	11S 508759 m N	3754837 m N	Riverine	0.106	Non-Section 10 non-wetland
D2	11S 508601 m N	3754840 m N	Riverine	0.049	Non-Section 10 non-wetland
			n/a		Non-Section 10 non-wetland

Notes:

Appendix E

September 24, 2015

Mr. Reuben J. Arceo, City of Banning
99 East Ramsey Street
Banning, California 92220

Subject: Air Quality and Climate Change Study for Banning TTM 36939 (LSA Project No. DFD1505)

Mr. Arceo:

This focused air quality and climate change impact study has been prepared to assess the potential impacts associated with the development of the proposed Banning TTM 36939 Project to be located between Sunset Avenue and Sunrise Avenue, north of the Montgomery Creek Channel in the City of Banning, Riverside County. Figure 1 illustrates the regional and project location.

The project site is located in the City of Banning (City) in the non-desert portion of Riverside County, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). This evaluation was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the SCAQMD California Environmental Quality Act (CEQA) Air Quality Handbook (SCAQMD 1993) and associated updates.

PROJECT DESCRIPTION

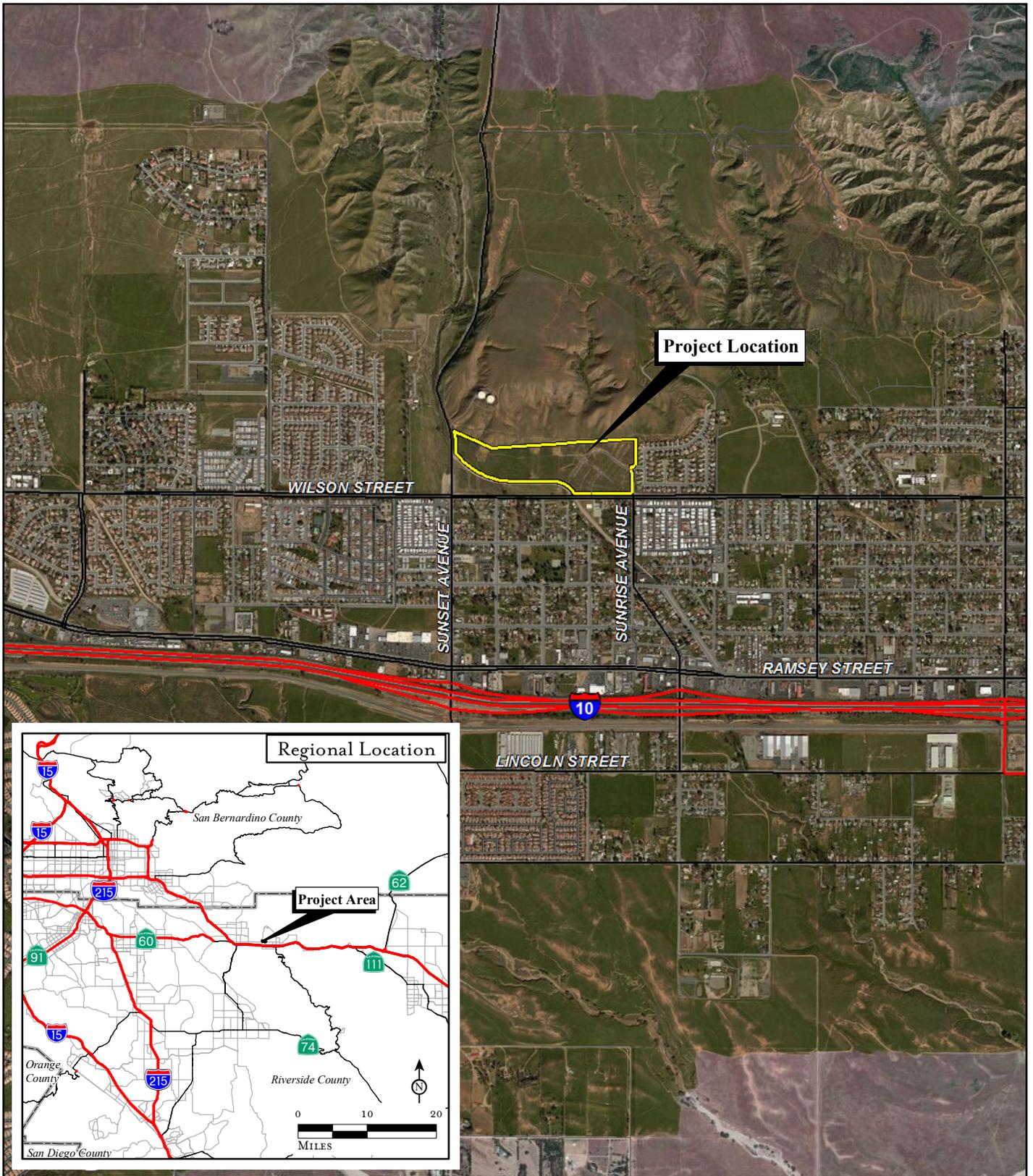
The proposed project consists of 98 single-family residential dwelling units on a 35-acre lot. The project site is located on the east side of Sunset Avenue, north of Wilson Street and the Montgomery Creek Channel, and west of Sunrise Avenue. Access to the project site is provided by three intersections, one on Sunset Avenue, one on Wilson Street, and one on Sunrise Avenue. The site is undeveloped, but the eastern half of the project site had previously been graded for home sites as late as 2009. The entire project site has been dormant since that time. It is bounded by open, undeveloped land to the north and west and residential development to the south and east. Figure 2 illustrates the site plan.

Sensitive Land Uses in the Project Vicinity

The site is bordered on the west and north by undeveloped open space, and to the east and south by single-family homes and rural residences.

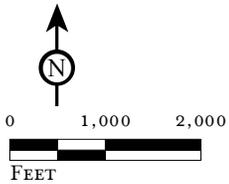
THRESHOLDS AND METHODOLOGY

A number of modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality



LSA

FIGURE 1



Banning TTM 36939

SOURCE: Bing Aerials, 2010; County of Riverside, 2015.

I:\DFD1502\Reports\Traffic\fig1_RegLoc.mxd (7/28/2015)

Regional and Project Location

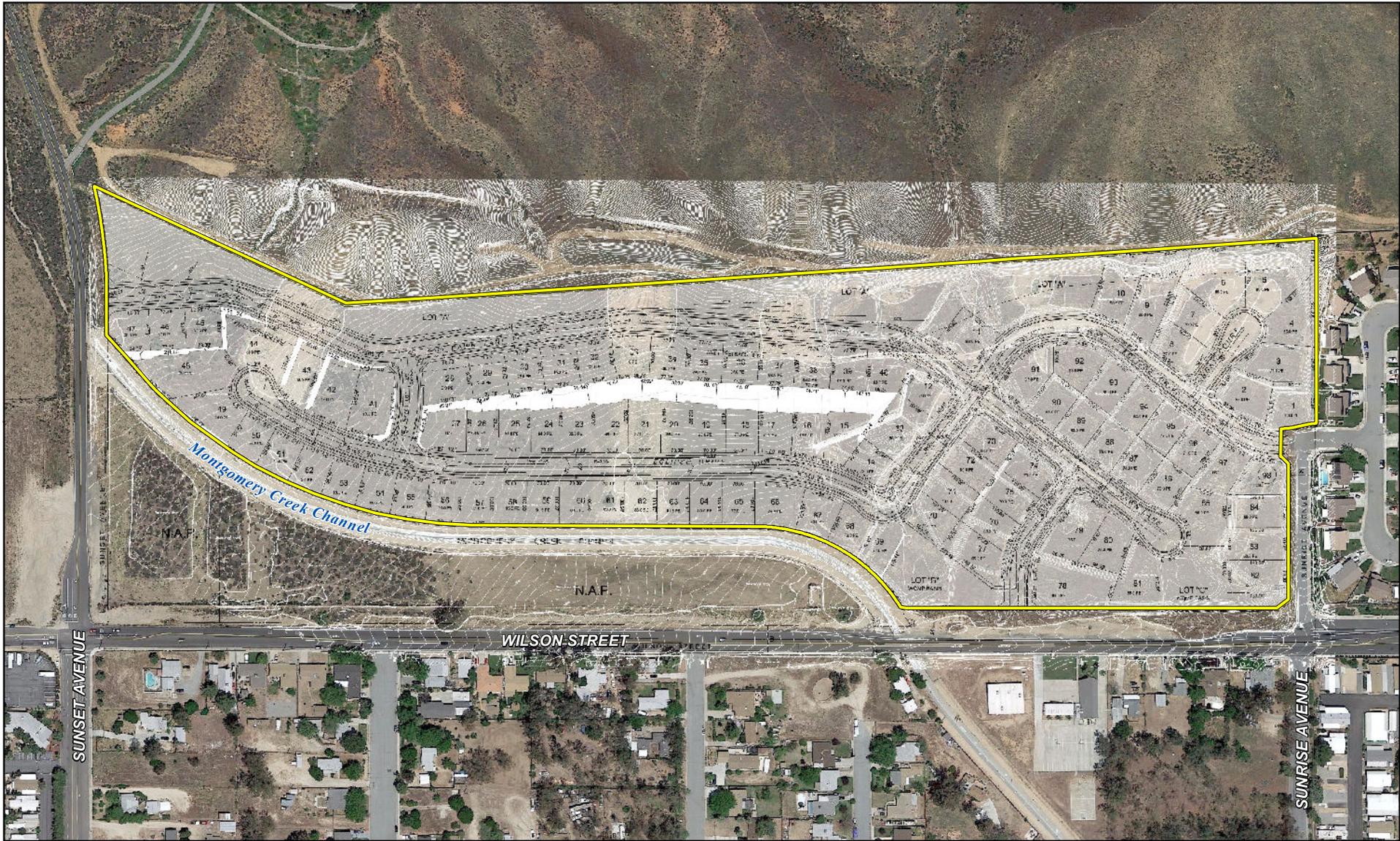
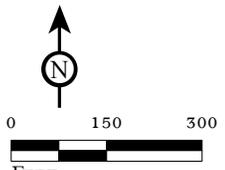


FIGURE 2

LSA



 Project Boundary

Banning Tract 36939

SOURCE: Google Earth, 2014; Soil Data Mart, 2003.

Site Plan

analysis. SCAQMD's current guidelines, the *CEQA Air Quality Handbook* (SCAQMD 1993) with associated updates were adhered to in the assessment of air quality impacts for the proposed projects. The current air quality model, CalEEMod Version 2013.2.2, was used to estimate project-related construction emissions in this air quality analysis.

The net increase in pollutant emissions determines the significance and impact on regional air quality as a result of the construction of the proposed projects. The results also allow the local government to determine whether the proposed projects will deter the region from achieving the goal of reducing pollutants in accordance with the SCAQMD Air Quality Management Plan in order to comply with the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS).

Criteria pollutant emissions thresholds

In addition to the NAAQS and CAAQS, the SCAQMD has established daily emissions thresholds for construction and operation of a project in the Basin. It should be noted that the emissions thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks. Table A shows the SCAQMD daily criteria pollutant emissions thresholds for construction and operation of a proposed project in the Basin.

Table A: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Thresholds (pounds per day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Source: South Coast Air Quality Management District, 1993

Projects with construction-related emissions that exceed any of these emission thresholds are considered to be significant under the SCAQMD guidelines.

Localized significance analysis thresholds

SCAQMD has developed LST methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or State AAQS and are developed based on the ambient concentrations of that pollutant for each source receptor area.

The SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003, recommending that all air quality analyses include an assessment of construction impacts on the air quality of nearby sensitive receptors. LSTs represent the maximum emissions from a project site that are not expected to result in an exceedance of the NAAQS or CAAQS. LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA for the LST is the Banning Airport Source Receptor Area (SRA 29).

In the case of CO and NO₂, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM₁₀ and PM_{2.5}, both of which are nonattainment pollutants. For these two, the significance criteria are the pollutant concentration thresholds presented in SCAQMD Rules 403 and 1301. The Rule 403 threshold of 10.4 µg/m³ applies to construction emissions of PM₁₀ and PM_{2.5} (and may apply to operational emissions at aggregate handling facilities). The Rule 1301 threshold of 2.5 µg/m³ applies to nonaggregate handling operational activities.

To avoid the need for every air quality analysis to perform air dispersion modeling, the SCAQMD performed air dispersion modeling for a range of construction sites less than or equal to 5 acres (ac) in size and created look-up tables that correlate pollutant emissions rates with project size to screen out projects that are unlikely to generate enough emissions to result in a locally significant concentration of any criteria pollutant. These look-up tables can also be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required. Additionally, the SCAQMD has issued guidance on applying CalEEMod modeling results to localized impacts analysis.¹ This guidance provides calculations to determine what subset of the total site would be disturbed based on the equipment planned.

For operational emissions, the localized significance for a project greater than 5 ac can be determined by performing the screening-level analysis using the 5 ac LSTs before using the dispersion modeling because the screening-level analysis is more conservative, and if no exceedance of the screening-level thresholds is identified, then the chance of a local concentration exceeding the national or State AAQS is small. The total gross area for the project site is approximately 35 ac. Since the project is not an aggregate handling facility, operational LSTs are assessed with the SCAQMD screening thresholds.

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. There are existing single-family homes south of Wilson Street, approximately 350 ft (105 m) from the project site. Additionally, there is a church south of Wilson Street, approximately 150 ft (45 m) from the project site.

Table B: Localized Significance Thresholds for Construction and Operational Emissions for the Banning Airport Source Receptor Area at 45 meter distance

Emissions Source	Pollutant Thresholds (pounds per day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Construction Operations on a 5 Acre Site	259	3,423	58	13
Normal Operations on a 5 Acre Site	259	3,423	14	3.8

Source: South Coast Air Quality Management District, 2003, above values interpolated from LST tables.

¹ South Coast Air Quality Management District (SCAQMD). Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. Website: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf>, accessed September, 2015.

Climate change and greenhouse gas emissions thresholds

Currently, there is no statewide greenhouse gas (GHG) emissions threshold that has been used to determine potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in the State. Therefore this environmental issue remains unsettled and must be evaluated on a case-by-case basis until such time the SCAQMD adopts significance thresholds and GHG emissions impact methodology. In the absence of a climate action plan for Banning, SCAQMD thresholds, when adopted, would apply to future development in the City.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency. The applicable tier for this project is either Tier 3 (3,500 metric tons per year of carbon dioxide equivalent [MT/yr CO₂e]). If GHG emissions are less than the appropriate Tier, project-level and cumulative GHG emissions would be less than significant.

IMPACTS AND MITIGATION

Air pollutant emissions associated with the project would occur over the short term from construction activities, such as fugitive dust from site preparation and grading, and emissions from equipment exhaust. There would be long-term regional emissions associated with project-related vehicular trips. Long-term local CO emissions at intersections in the project vicinity could be affected by project-related traffic. Long-term stationary source emissions would occur due to energy consumption such as electricity usage by the proposed land uses.

CONSTRUCTION IMPACTS

Construction activities produce combustion emissions from various sources such as heavy-duty construction equipment, utility engines, trucks hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions.

The earthwork and grading details are based on the proposed Tentative Tract Map 36939. The site improvements such as grading, streets, and utilities will be done in one phase but homes will be built in multiple phases based on market demand and absorption. Construction is expected to commence sometime in 2016 and would occur in several general phases. The Project Applicant expects the following time durations for the construction process, which would be somewhat sequential but overlap in some cases: site work including grading for approximately 3 months and model home construction for 10 – 12 weeks. Table C lists the tentative project construction schedule for the proposed project including all site preparation, grading and paving for the entire site and building construction thru the first phase of homes. This tentative schedule is based on a probable start date, a planned completion of the first phase later in 2016, and the assumption that the architectural coatings would be applied during the latter portion of the building construction phase. It is assumed that all

later home construction phases would have emissions equal to or less than those shown in Table C and would only include emissions from building construction and architectural coatings.

Table C: Tentative Project Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days/Week	Number of Days
Site Preparation	2/1/2016	2/26/2016	5	20
Grading	2/27/2016	4/22/2016	5	40
1st Phase of Home Construction	4/23/2016	7/15/2016	5	60
Architectural Coating	5/25/2016	7/15/2016	5	38
Paving	7/16/2016	9/30/2016	5	55

Source: Approximate dates, assuming the first phase opens in 2016, and using CalEEMod defaults.

The construction emissions calculated using the CalEEMod model are shown in Table D. The emissions rates shown in the table are from the CalEEMod output tables listed as “Mitigated Construction,” even though the only measures that have been applied to the analysis are the required construction emissions control measures, or standard conditions. They are also the combination of the on- and off-site emissions.

Table D: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)								
	VOC	NO _x	CO	SO _x	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}	CO _{2e}
Site Preparation	5.1	55	42	0.042	7.2	2.9	3.9	2.7	4,300
Grading	6.6	75	50	0.064	3.6	3.6	1.5	3.3	6,700
Building Construction	3.6	30	21	0.034	0.45	2	0.12	1.9	3,300
Architectural Coating	37	2.4	2.3	0.0039	0.078	0.2	0.021	0.2	360
Paving	2.1	22	16	0.024	0.17	1.3	0.045	1.2	2,500
Peak Daily	41	75	50	0.064	10		6.6		6,700
SCAQMD Thresholds	75	100	550	150	150		55		No
Significant Emissions?	No	No	No	No	No		No		Threshold

Source: Compiled by LSA Associates, Inc. (2015).

CO = carbon monoxide

CO_{2e} = carbon dioxide equivalent

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

Fugitive Dust

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. The proposed project will be required to comply with SCAQMD Rules 402 and 403 to control fugitive dust.

Table D lists total construction emissions (i.e., fugitive-dust emissions and construction-equipment exhausts) that have incorporated a number of feasible control measures that can be reasonably implemented to significantly reduce PM₁₀ emissions from construction.

Architectural Coatings

Architectural coatings contain VOCs and are part of the O₃ precursors. Based on the proposed project, it is estimated that application of the architectural coatings for the proposed peak construction day will result in a combined peak of 44 lbs/day of VOC. Therefore, this VOC emission will not exceed the SCAQMD VOC threshold of 75 lbs/day.

Localized Impacts Analysis

As described in the SCAQMD guidance on applying CalEEMod modeling results to localized impacts analysis, the equipment planned to be used on a peak day during site preparation and grading operations would disturb no more than 5 acres in a day.¹ Thus, the 5-acre LST thresholds are appropriate for this project. Table E shows that the emissions of pollutants on the peak day of construction would all be less than the SCAQMD LST thresholds, which means that the resulting concentrations at the church and nearest residences would be all below the NAAQS and CAAQS.

Table E: Construction Localized Impacts Analysis

Emissions Sources	NO_x	CO	PM₁₀	PM_{2.5}
On-Site Emissions	75	49	10	6.6
LST Thresholds	259	3,423	58	13
Significant Emissions?	No	No	No	No

Source: Compiled by LSA Associates, Inc. (2015).

Note: SRA – Banning Airport, 5 acres, 45-meter distance.

CO = carbon monoxide

PM_{2.5} = particulate matter less than 2.5 microns in size

lbs/day = pounds per day

PM₁₀ = particulate matter less than 10 microns in size

LST = local significance threshold

SRA = Source Receptor Area

NO_x = nitrogen oxides

Odors

Heavy-duty equipment in the project area during construction would emit odors, primarily from the equipment exhaust. SCAQMD Rule 402 regarding nuisances states: “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.” The proposed uses are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed project, and no mitigation measures are required.

¹ South Coast Air Quality Management District (SCAQMD). Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. Website: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf>, accessed September, 2015.

Naturally Occurring Asbestos

The proposed project is located in Riverside County, which is not among the counties that are found to have serpentine and ultramafic rock in their soils. Therefore, the potential risk for NOA during project construction is small and less than significant.

Construction Emissions Conclusions

Tables D and E show that daily regional construction emissions would not exceed the daily thresholds of any criteria pollutant emission thresholds established by the SCAQMD, and during construction, there will be no locally significant impacts. Thus, no mitigation is required during project construction.

OPERATIONAL IMPACTS

Long-term air emission impacts are those associated with stationary sources and mobile sources involving any project-related change. The proposed project would result in both stationary and mobile source emissions. The stationary source emissions would come from natural gas consumption, landscape maintenance, and off-site electric power generation. Mobile sources from vehicular trips associated with the proposed uses emit pollutants.

The CalEEMod model was also used to calculate the operational emissions. Mobile sources emissions were calculated based on the trip generation factors described in the Focused Traffic Impact Study (LSA Associates, Inc., September 2015). Other emissions sources were calculated using the defaults in the CalEEMod model for the project land use.

Long-term operational emissions associated with the full proposed project of 98 homes are shown in Table J. Table J shows that the peak daily emissions of all criteria pollutants as a result of the proposed project would not exceed the corresponding SCAQMD daily emission thresholds. Therefore, project-related long-term air quality impacts would be less than significant.

Table J: Opening Year Regional Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Sources	4.3	0.096	8.2	0.00043	0.18	0.17
Energy Sources	0.098	0.84	0.36	0.0053	0.068	0.068
Mobile Sources	3.6	12	41	0.099	6.9	2.0
Total Project Emissions	8.0	13	50	0.10	7.1	2.2
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No

Source: Compiled by LSA Associates, Inc. (September 2015).

CO = carbon monoxide

CO₂ = carbon dioxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

Localized Impacts Analysis

Table K shows the calculated emissions for the proposed operational activities compared with the appropriate SCAQMD localized impacts thresholds. The localized impacts analysis by design only includes on-site sources; however, the CalEEMod model outputs for operations do not separate on-site and off-site emissions. The emissions shown in Table J for area sources are assumed to all occur on site and for energy sources entirely off site. While some of the mobile-source emissions will occur from vehicles driving on site, most of the mobile-source emissions calculated by the CalEEMod model would occur while the vehicles are driving off site. It is unlikely that the average on-site distance driven by vehicles will be 2,000 ft, which is approximately 4 percent of the total miles traveled. For a worst-case scenario assessment, the emissions shown in Table K include all on-site project-related area sources and 5 percent of the project-related new mobile sources.

Table K: Long-Term Operational Localized Impact Analysis (lbs/day)

Emissions Sources	NO _x	CO	PM ₁₀	PM _{2.5}
On-site emissions	0.70	10	0.53	0.27
LST Thresholds	259	3,423	14	3.8
Significant Emissions?	No	No	No	No

Source: Compiled by LSA Associates, Inc. (September 2015).

Note: SRA – Banning Airport, 5 acres, 45-meter distance, on-site traffic 5 percent of total.

CO = carbon monoxide

PM_{2.5} = particulate matter less than 2.5 microns in size

lbs/day = pounds per day

PM₁₀ = particulate matter less than 10 microns in size

LST = Localized Significance Thresholds

SRA = Source Receptor Area

NO_x = nitrogen oxides

Table K shows that the emissions of pollutants during project operations would all be less than the SCAQMD LST thresholds, which means that the resulting concentrations at the church and nearest residences would be all below the NAAQS and CAAQS. Therefore, the proposed operational activity would not result in a locally significant air quality impact.

Greenhouse Gas Emissions

This section evaluates potential significant impacts related to global climate change that could result from implementation of the proposed project. Because it is not possible to tie specific GHG emissions to actual changes in climate, this evaluation focuses on the project's emission of GHGs. Mitigation measures are identified as appropriate.

GHG Emissions Background. GHG emissions estimates are provided herein for informational purposes only, as there is no established quantified GHG emissions threshold. Bearing in mind that CEQA does not require “perfection” but instead “adequacy, completeness, and a good faith effort at full disclosure,” the analysis below is based on methodologies and information available to the City and the applicant at the time this analysis was prepared. Estimation of GHG emissions in the future does not account for all changes in technology that may reduce such emissions; therefore, the estimates are based on past performance and represent a scenario that is worse than that which is likely to be encountered (after energy-efficient technologies have been implemented). While information is presented below to assist the public and decision-makers in understanding the project's potential contribution to global climate change impacts, the information available to the cities is not sufficiently detailed to allow a direct comparison between particular project characteristics and

particular climate change impacts, or between any particular proposed mitigation measure and any reduction in climate change impacts.

Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions:

- **Construction Activities:** During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment.
- **Gas, Electricity, and Water Use:** Natural gas use results in the emission of two GHGs: CH₄ (the major component of natural gas) and CO₂ (from the combustion of natural gas). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive.
- **Solid Waste Disposal:** Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH₄ from the anaerobic decomposition of organic materials. CH₄ is 25 times more potent a GHG than CO₂. However, landfill CH₄ can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use:** Transportation associated with the proposed project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.

Preliminary guidance from the OPR and recent letters from the Attorney General critical of CEQA documents that have taken different approaches indicate that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, and construction activities.

Table L lists the annual GHG emissions for each of the planned construction phases and shows that the GHG emissions would be highest during the grading phase, at approximately 120 MT. Total construction GHG emissions thru phase 1 of the construction period are estimated to be 320 MT of CO₂e. Each additional phase would contribute additional GHG emissions, approximately the same as shown for Phase 1 in Table L, or the sum of 89 MT of CO₂e for construction of the homes (6.0 + 83) plus 5.6 MT of CO₂e for the architectural coating processes, or 95 MT of CO₂e.

Long-term operation of the proposed project would generate GHG emissions from area and mobile sources and indirect emissions from stationary sources associated with energy consumption. Mobile-source emissions of GHGs would include project-generated vehicle trips associated with on-site residences. Area-source emissions would be associated with activities such as landscaping and maintenance of proposed land uses, natural gas for heating, and other sources. Increases in stationary-source emissions would also occur at off-site utility providers as a result of demand for electricity, natural gas, and water by the proposed uses.

Table L: Greenhouse Gas Construction Emissions for Phase 1

Construction Phase	Total Regional Pollutant Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Site Preparation	39	0.011	0	39
Grading	120	0.035	0	120
Phase 1 of Home Construction	88	0.019	0	89
Architectural Coating	6.1	0.00063	0	6.1
Paving	62	0.018	0	62
Total	320	0.084	0	320

Source: Compiled by LSA Associates, Inc. (September 2015).
 CH₄ = methane MT/yr = metric tons per year
 CO₂ = carbon dioxide N₂O = nitrous oxide
 CO₂e = carbon dioxide equivalent

The GHG emission estimates presented in Table M show the emissions associated with the level of development envisioned by the full proposed project of 98 homes at build out. It is not known how many homes would be built in each phase (depends on market demand at the time), thus it is not known how many phases there will be. Assuming a conservative 20 homes per phase would result in five phases. Thus, the amortized construction GHG emissions shown in Table M reflect this total. Appendix A includes the worksheets for the GHG emissions. As shown in Table M, the project will produce 2,000 MT/yr of CO₂e, which is 0.002 million metric tons per year (MMT/yr) of CO₂e. For comparison, the existing emissions from the entire SCAG region are estimated to be approximately 176.79 MMT/yr of CO₂e, and the existing emissions for the entire State are estimated at approximately 496.95 MMT/yr of CO₂e.

Table M: Long-Term Operational Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/yr)					
	Bio-CO ₂	NBio-CO ₂	Total CO ₂	CH ₄	N ₂ O	CO ₂ e
Construction Emissions amortized over 30 Years	0	53	53	0.014	0	53
Operational Emissions						
Area Sources	0	25	25	0.0021	0.00043	25
Energy Sources	0	390	390	0.013	0.0053	390
Mobile Sources	0	1,400	1,400	0.047	0	1,400
Waste Sources	23	0	23	1.4	0	52
Water Usage	2.0	37	39	0.21	0.0053	45
Total Project Emissions	25	1,900	1,900	1.7	0.011	2,000

Source: Compiled by LSA Associates, Inc. (September 2015).
 Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.
 Bio-CO₂ = biologically generated CO₂ MT = metric tons
 CH₄ = methane N₂O = nitrous oxide
 CO₂ = carbon dioxide NBio-CO₂ = Non-biologically generated CO₂
 CO₂e = carbon dioxide equivalent

At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed the project would not generate emissions of CFCs. The project may emit a small amount of HFCs from leakage and service of refrigeration and air-conditioning equipment and from disposal at the end of the life of the equipment. However, the details regarding refrigerants to be used at the project site are unknown at this time. PFCs and SF₆ are typically used in industrial applications, none of which would be used on the project site. Therefore, it is not anticipated that the project would contribute significant emissions of these additional GHGs.

Because climate change impacts are cumulative in nature, no typical single project can result in emissions of such a magnitude that it, in and of itself, would be significant on a project basis. The project's operational emissions of 2,000 MT/yr of CO₂e are less than the SCAQMD-recommended interim threshold of 3,500 MT/yr of CO₂e for residential uses. Therefore, the proposed project would not result in a significant impact on GHG emissions.

LONG-TERM MICROSCALE (CO HOT SPOT) ANALYSIS

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (residents, schoolchildren, the elderly, and hospital patients, etc.).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended, to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored in the Palm Spring station (the closest to the project site) showed a highest recorded 1-hour concentration of 3.2 ppm (State standard is 20 ppm) and a highest 8-hour concentration of 1.5 ppm (State standard is 9 ppm) during the past 3 years (ARB, 2015). The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis.

Given the relatively low level of CO concentrations in the project area, project-related vehicles are not expected to result in the CO concentrations exceeding the State or federal CO standards. Because no CO hot spot would occur, there would be no project-related impacts on CO concentrations.

SUMMARY

The project's long-term operational emissions would not exceed the SCAQMD's criteria pollutant thresholds. As climate change impacts are global in nature, no typical single project can result in emissions of such a magnitude that it, in and of itself, would be significant on project basis. Because

the proposed project will not exceed the SCAQMD-recommended interim thresholds for residential uses, the proposed project would not result in a significant long-term impact.

STANDARD CONDITIONS

Construction Operations

The project is required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best-available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM₁₀ component). Compliance with these rules would reduce impacts on nearby sensitive receptors (see SCAQMD Rule 403).¹ As shown in Table D, implementation of Rule 403 measures results in dust emissions below SCAQMD thresholds.

The applicable Rule 403 measures are as follows:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 m (2 ft) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code (CVC) Section 23114.
- Pave construction access roads at least 30 m (100 ft) onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.

The applicable CalRecycle Sustainable (Green) Building Program Measures are:

- Recycle/reuse at least 50 percent of the construction material (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard).
- Use "green building materials" such as those materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project, as defined on the California Department of Resources Recycling and Recovery (CalRecycle) website.²

¹ South Coast Air Quality Management District (SCAQMD). Rule 403. <http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-iv>, accessed August 2015.

² California Department of Resources Recycling and Recovery (CalRecycle). Website: <http://www.calrecycle.ca.gov>.

These measures will result in reduced emissions during the construction and operation phases of the proposed project.

Construction Emissions Conclusions

Tables D and E show that with implementation of these SCAQMD Standard Measures daily regional construction emissions would not exceed the daily thresholds of any criteria pollutant emission thresholds established by the SCAQMD, and during construction, there will be no locally significant impacts.

Since no exceedances of any criteria pollutants are expected, no significant impacts would occur for project construction. Details of the emission factors and other assumptions are included in the attached CalEEMod modeling output.

REFERENCES

California Air Resources Board (ARB). 2009. 2012–2014 Air Quality Data. Website: <http://www.arb.ca.gov>, accessed September, 2015.

California Department of Conservation, http://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Pages/index.aspx.

California Department of Resources Recycling and Recovery (CalRecycle). Website: <http://www.calrecycle.ca.gov>.

South Coast Air Quality Management District (SCAQMD). April 1993. *CEQA Air Quality Handbook*.

———. June 2003. Final Localized Significance Threshold Methodology.

———. October 2006. Final – Methodology to Calculate Particulate Matter (PM)_{2.5} and PM_{2.5} Significance Thresholds.

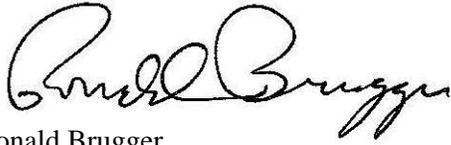
———. Rule 403. Website: <http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-iv>, accessed August 2015.

———. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, Website: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf>. accessed September 2015.

Please review the air quality and greenhouse gas emissions analyses outlined in this letter. Should the City have any comments or require additional information, please do not hesitate to contact me at (949) 553-0666 or via email Ronald.Brugger@lsa-assoc.com.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink that reads "Ronald Brugger". The signature is written in a cursive style with a large, prominent initial "R".

Ronald Brugger
Senior Air Quality Specialist

ATTACHMENT: CalEEMod output

TTM 36939
Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	98.00	Dwelling Unit	34.60	176,400.00	280

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	630.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site acreage from project plans.

Construction Phase - Schedule based on starting construction in 2016, assume that architectural coatings applied during building construction phase.

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - Using trip rate from project traffic study - used peak daily rate for all days.

Woodstoves - Assume no woodburning allowed and that all homes have a natural gas fireplace.

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Sequestration - Estimate the number of new trees from the site plan.

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	38.00
tblConstructionPhase	NumDays	740.00	60.00
tblConstructionPhase	NumDays	75.00	40.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	PhaseEndDate	9/7/2016	7/15/2016
tblConstructionPhase	PhaseStartDate	7/16/2016	5/25/2016
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	83.30	98.00
tblFireplaces	NumberNoFireplace	9.80	0.00
tblFireplaces	NumberWood	4.90	0.00
tblLandUse	LotAcreage	31.82	34.60
tblProjectCharacteristics	OperationalYear	2014	2016
tblSequestration	NumberOfNewTrees	0.00	50.00
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	9.57	9.52
tblWoodstoves	NumberCatalytic	4.90	0.00
tblWoodstoves	NumberNoncatalytic	4.90	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	40.3219	74.9042	50.2716	0.0644	18.2675	3.5856	21.2074	9.9840	3.2988	12.6888	0.0000	6,636.8970	6,636.8970	1.9446	0.0000	6,677.7328
Total	40.3219	74.9042	50.2716	0.0644	18.2675	3.5856	21.2074	9.9840	3.2988	12.6888	0.0000	6,636.8970	6,636.8970	1.9446	0.0000	6,677.7328

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	40.3219	74.9042	50.2716	0.0644	7.2470	3.5856	10.1870	3.9263	3.2988	6.6311	0.0000	6,636.8970	6,636.8970	1.9446	0.0000	6,677.7327
Total	40.3219	74.9042	50.2716	0.0644	7.2470	3.5856	10.1870	3.9263	3.2988	6.6311	0.0000	6,636.8970	6,636.8970	1.9446	0.0000	6,677.7327

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.33	0.00	51.96	60.67	0.00	47.74	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937
Energy	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Mobile	3.6140	11.4005	40.6820	0.0993	6.7544	0.1657	6.9201	1.8025	0.1523	1.9549		8,699.7263	8,699.7263	0.2826		8,705.6605
Total	8.0309	12.3319	49.2457	0.1051	6.7544	0.4089	7.1633	1.8025	0.3942	2.1967	0.0000	11,856.1887	11,856.1887	0.3576	0.0576	11,881.5557

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937
Energy	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Mobile	3.6140	11.4005	40.6820	0.0993	6.7544	0.1657	6.9201	1.8025	0.1523	1.9549		8,699.7263	8,699.7263	0.2826		8,705.6605
Total	8.0309	12.3319	49.2457	0.1051	6.7544	0.4089	7.1633	1.8025	0.3942	2.1967	0.0000	11,856.1887	11,856.1887	0.3576	0.0576	11,881.5557

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2016	2/26/2016	5	20	
2	Grading	Grading	2/27/2016	4/22/2016	5	40	
3	1st Phase of Home Construction	Building Construction	4/23/2016	7/15/2016	5	60	
4	Architectural Coating	Architectural Coating	5/25/2016	7/15/2016	5	38	
5	Paving	Paving	7/16/2016	9/30/2016	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 100

Acres of Paving: 0

Residential Indoor: 357,210; Residential Outdoor: 119,070; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
1st Phase of Home Construction	Cranes	1	7.00	226	0.29
1st Phase of Home Construction	Forklifts	3	8.00	89	0.20
1st Phase of Home Construction	Generator Sets	1	8.00	84	0.74
1st Phase of Home Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
1st Phase of Home Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
1st Phase of Home Construction	9	35.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	5.0771	54.6323	41.1053	0.0391	18.0663	2.9387	21.0049	9.9307	2.7036	12.6343		4,065.0053	4,065.0053	1.2262		4,090.7544

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0814	1.0208	2.4100e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		199.7247	199.7247	8.6100e-003		199.9056
Total	0.0690	0.0814	1.0208	2.4100e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		199.7247	199.7247	8.6100e-003		199.9056

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	5.0771	54.6323	41.1053	0.0391	7.0458	2.9387	9.9845	3.8730	2.7036	6.5766	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0690	0.0814	1.0208	2.4100e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		199.7247	199.7247	8.6100e-003		199.9056
Total	0.0690	0.0814	1.0208	2.4100e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		199.7247	199.7247	8.6100e-003		199.9056

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.6733	3.5842	12.2576	3.5965	3.2975	6.8940		6,414.9807	6,414.9807	1.9350		6,455.6154

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0766	0.0905	1.1342	2.6800e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		221.9163	221.9163	9.5700e-003		222.1173
Total	0.0766	0.0905	1.1342	2.6800e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		221.9163	221.9163	9.5700e-003		222.1173

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	3.3826	3.5842	6.9668	1.4026	3.2975	4.7001	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0766	0.0905	1.1342	2.6800e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		221.9163	221.9163	9.5700e-003		222.1173
Total	0.0766	0.0905	1.1342	2.6800e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		221.9163	221.9163	9.5700e-003		222.1173

3.4 1st Phase of Home Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0778	0.8392	0.8787	2.1000e-003	0.0629	0.0163	0.0792	0.0180	0.0150	0.0330		211.2802	211.2802	1.3700e-003		211.3091
Worker	0.1341	0.1584	1.9849	4.6900e-003	0.3912	2.4500e-003	0.3937	0.1038	2.2500e-003	0.1060		388.3536	388.3536	0.0168		388.7053
Total	0.2119	0.9975	2.8636	6.7900e-003	0.4541	0.0187	0.4729	0.1217	0.0172	0.1390		599.6338	599.6338	0.0181		600.0144

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0778	0.8392	0.8787	2.1000e-003	0.0629	0.0163	0.0792	0.0180	0.0150	0.0330		211.2802	211.2802	1.3700e-003		211.3091
Worker	0.1341	0.1584	1.9849	4.6900e-003	0.3912	2.4500e-003	0.3937	0.1038	2.2500e-003	0.1060		388.3536	388.3536	0.0168		388.7053
Total	0.2119	0.9975	2.8636	6.7900e-003	0.4541	0.0187	0.4729	0.1217	0.0172	0.1390		599.6338	599.6338	0.0181		600.0144

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	36.3085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	36.6770	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0268	0.0317	0.3970	9.4000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		77.6707	77.6707	3.3500e-003		77.7411
Total	0.0268	0.0317	0.3970	9.4000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		77.6707	77.6707	3.3500e-003		77.7411

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	36.3085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	36.6770	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0268	0.0317	0.3970	9.4000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		77.6707	77.6707	3.3500e-003		77.7411
Total	0.0268	0.0317	0.3970	9.4000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		77.6707	77.6707	3.3500e-003		77.7411

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0575	0.0679	0.8507	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		166.4372	166.4372	7.1800e-003		166.5880
Total	0.0575	0.0679	0.8507	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		166.4372	166.4372	7.1800e-003		166.5880

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0575	0.0679	0.8507	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		166.4372	166.4372	7.1800e-003		166.5880
Total	0.0575	0.0679	0.8507	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		166.4372	166.4372	7.1800e-003		166.5880

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.6140	11.4005	40.6820	0.0993	6.7544	0.1657	6.9201	1.8025	0.1523	1.9549		8,699.7263	8,699.7263	0.2826		8,705.6605
Unmitigated	3.6140	11.4005	40.6820	0.0993	6.7544	0.1657	6.9201	1.8025	0.1523	1.9549		8,699.7263	8,699.7263	0.2826		8,705.6605

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	932.96	932.96	932.96	3,188,066	3,188,066
Total	932.96	932.96	932.96	3,188,066	3,188,066

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462438	0.069856	0.176572	0.170752	0.045136	0.007399	0.012745	0.042494	0.000970	0.001060	0.006446	0.000893	0.003237

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
NaturalGas Unmitigated	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	9066.19	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Total		0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	9.06619	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Total		0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937
Unmitigated	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	3.4927					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1902	1.0000e-005	0.0104	0.0000		0.1314	0.1314		0.1301	0.1301	0.0000	2,075.2941	2,075.2941	0.0398	0.0381	2,087.9240
Landscaping	0.2582	0.0959	8.1978	4.3000e-004		0.0442	0.0442		0.0442	0.0442		14.5581	14.5581	0.0148		14.8697
Architectural Coating	0.3780					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8523	2,089.8523	0.0546	0.0381	2,102.7937

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Consumer Products	3.4927					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Hearth	0.1902	1.0000e-005	0.0104	0.0000		0.1314	0.1314		0.1301	0.1301	0.0000	2,075.2941	2,075.2941	0.0398	0.0381		2,087.9240
Landscaping	0.2582	0.0959	8.1978	4.3000e-004		0.0442	0.0442		0.0442	0.0442		14.5581	14.5581	0.0148			14.8697
Architectural Coating	0.3780					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8523	2,089.8523	0.0546	0.0381		2,102.7937

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

TTM 36939
Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	98.00	Dwelling Unit	34.60	176,400.00	280

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	630.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site acreage from project plans.

Construction Phase - Schedule based on starting construction in 2016, assume that architectural coatings applied during building construction phase.

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - Using trip rate from project traffic study - used peak daily rate for all days.

Woodstoves - Assume no woodburning allowed and that all homes have a natural gas fireplace.

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Sequestration - Estimate the number of new trees from the site plan.

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	38.00
tblConstructionPhase	NumDays	740.00	60.00
tblConstructionPhase	NumDays	75.00	40.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	PhaseEndDate	9/7/2016	7/15/2016
tblConstructionPhase	PhaseStartDate	7/16/2016	5/25/2016
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	83.30	98.00
tblFireplaces	NumberNoFireplace	9.80	0.00
tblFireplaces	NumberWood	4.90	0.00
tblLandUse	LotAcreage	31.82	34.60
tblProjectCharacteristics	OperationalYear	2014	2016
tblSequestration	NumberOfNewTrees	0.00	50.00
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	9.57	9.52
tblWoodstoves	NumberCatalytic	4.90	0.00
tblWoodstoves	NumberNoncatalytic	4.90	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	40.3196	74.9101	50.1147	0.0642	18.2675	3.5856	21.2074	9.9840	3.2988	12.6888	0.0000	6,617.7781	6,617.7781	1.9446	0.0000	6,658.6138
Total	40.3196	74.9101	50.1147	0.0642	18.2675	3.5856	21.2074	9.9840	3.2988	12.6888	0.0000	6,617.7781	6,617.7781	1.9446	0.0000	6,658.6138

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	40.3196	74.9101	50.1147	0.0642	7.2470	3.5856	10.1870	3.9263	3.2988	6.6311	0.0000	6,617.7781	6,617.7781	1.9446	0.0000	6,658.6138
Total	40.3196	74.9101	50.1147	0.0642	7.2470	3.5856	10.1870	3.9263	3.2988	6.6311	0.0000	6,617.7781	6,617.7781	1.9446	0.0000	6,658.6138

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.33	0.00	51.96	60.67	0.00	47.74	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937
Energy	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Mobile	3.5295	11.8883	37.8277	0.0927	6.7544	0.1663	6.9207	1.8025	0.1529	1.9555		8,139.7394	8,139.7394	0.2829		8,145.6802
Total	7.9464	12.8197	46.3914	0.0984	6.7544	0.4095	7.1639	1.8025	0.3948	2.1973	0.0000	11,296.2018	11,296.2018	0.3580	0.0576	11,321.5753

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937
Energy	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Mobile	3.5295	11.8883	37.8277	0.0927	6.7544	0.1663	6.9207	1.8025	0.1529	1.9555		8,139.7394	8,139.7394	0.2829		8,145.6802
Total	7.9464	12.8197	46.3914	0.0984	6.7544	0.4095	7.1639	1.8025	0.3948	2.1973	0.0000	11,296.2018	11,296.2018	0.3580	0.0576	11,321.5753

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2016	2/26/2016	5	20	
2	Grading	Grading	2/27/2016	4/22/2016	5	40	
3	1st Phase of Home Construction	Building Construction	4/23/2016	7/15/2016	5	60	
4	Architectural Coating	Architectural Coating	5/25/2016	7/15/2016	5	38	
5	Paving	Paving	7/16/2016	9/30/2016	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 100

Acres of Paving: 0

Residential Indoor: 357,210; Residential Outdoor: 119,070; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
1st Phase of Home Construction	Cranes	1	7.00	226	0.29
1st Phase of Home Construction	Forklifts	3	8.00	89	0.20
1st Phase of Home Construction	Generator Sets	1	8.00	84	0.74
1st Phase of Home Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
1st Phase of Home Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
1st Phase of Home Construction	9	35.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	5.0771	54.6323	41.1053	0.0391	18.0663	2.9387	21.0049	9.9307	2.7036	12.6343		4,065.0053	4,065.0053	1.2262		4,090.7544

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0868	0.8796	2.2000e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		182.5176	182.5176	8.6100e-003		182.6986
Total	0.0658	0.0868	0.8796	2.2000e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		182.5176	182.5176	8.6100e-003		182.6986

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	5.0771	54.6323	41.1053	0.0391	7.0458	2.9387	9.9845	3.8730	2.7036	6.5766	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0658	0.0868	0.8796	2.2000e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		182.5176	182.5176	8.6100e-003		182.6986
Total	0.0658	0.0868	0.8796	2.2000e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545		182.5176	182.5176	8.6100e-003		182.6986

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.6733	3.5842	12.2576	3.5965	3.2975	6.8940		6,414.9807	6,414.9807	1.9350		6,455.6154

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0731	0.0964	0.9773	2.4500e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		202.7974	202.7974	9.5700e-003		202.9984
Total	0.0731	0.0964	0.9773	2.4500e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		202.7974	202.7974	9.5700e-003		202.9984

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	3.3826	3.5842	6.9668	1.4026	3.2975	4.7001	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0731	0.0964	0.9773	2.4500e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		202.7974	202.7974	9.5700e-003		202.9984
Total	0.0731	0.0964	0.9773	2.4500e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		202.7974	202.7974	9.5700e-003		202.9984

3.4 1st Phase of Home Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0829	0.8602	0.9991	2.0900e-003	0.0629	0.0164	0.0794	0.0180	0.0151	0.0331		209.4517	209.4517	1.4200e-003		209.4815
Worker	0.1279	0.1687	1.7103	4.2900e-003	0.3912	2.4500e-003	0.3937	0.1038	2.2500e-003	0.1060		354.8954	354.8954	0.0168		355.2472
Total	0.2108	1.0289	2.7094	6.3800e-003	0.4541	0.0189	0.4730	0.1217	0.0174	0.1391		564.3471	564.3471	0.0182		564.7287

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0829	0.8602	0.9991	2.0900e-003	0.0629	0.0164	0.0794	0.0180	0.0151	0.0331		209.4517	209.4517	1.4200e-003		209.4815
Worker	0.1279	0.1687	1.7103	4.2900e-003	0.3912	2.4500e-003	0.3937	0.1038	2.2500e-003	0.1060		354.8954	354.8954	0.0168		355.2472
Total	0.2108	1.0289	2.7094	6.3800e-003	0.4541	0.0189	0.4730	0.1217	0.0174	0.1391		564.3471	564.3471	0.0182		564.7287

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	36.3085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	36.6770	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0256	0.0337	0.3421	8.6000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		70.9791	70.9791	3.3500e-003		71.0494
Total	0.0256	0.0337	0.3421	8.6000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		70.9791	70.9791	3.3500e-003		71.0494

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	36.3085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	36.6770	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0256	0.0337	0.3421	8.6000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		70.9791	70.9791	3.3500e-003		71.0494
Total	0.0256	0.0337	0.3421	8.6000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.5000e-004	0.0212		70.9791	70.9791	3.3500e-003		71.0494

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0548	0.0723	0.7330	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		152.0980	152.0980	7.1800e-003		152.2488
Total	0.0548	0.0723	0.7330	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		152.0980	152.0980	7.1800e-003		152.2488

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0548	0.0723	0.7330	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		152.0980	152.0980	7.1800e-003		152.2488
Total	0.0548	0.0723	0.7330	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		152.0980	152.0980	7.1800e-003		152.2488

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.5295	11.8883	37.8277	0.0927	6.7544	0.1663	6.9207	1.8025	0.1529	1.9555		8,139.7394	8,139.7394	0.2829		8,145.6802
Unmitigated	3.5295	11.8883	37.8277	0.0927	6.7544	0.1663	6.9207	1.8025	0.1529	1.9555		8,139.7394	8,139.7394	0.2829		8,145.6802

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	932.96	932.96	932.96	3,188,066	3,188,066
Total	932.96	932.96	932.96	3,188,066	3,188,066

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462438	0.069856	0.176572	0.170752	0.045136	0.007399	0.012745	0.042494	0.000970	0.001060	0.006446	0.000893	0.003237

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
NaturalGas Unmitigated	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	9066.19	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Total		0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	9.06619	0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014
Total		0.0978	0.8355	0.3555	5.3300e-003		0.0676	0.0676		0.0676	0.0676		1,066.6102	1,066.6102	0.0204	0.0196	1,073.1014

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937
Unmitigated	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8522	2,089.8522	0.0546	0.0381	2,102.7937

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3780					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4927					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1902	1.0000e-005	0.0104	0.0000		0.1314	0.1314		0.1301	0.1301	0.0000	2,075.2941	2,075.2941	0.0398	0.0381	2,087.9240
Landscaping	0.2582	0.0959	8.1978	4.3000e-004		0.0442	0.0442		0.0442	0.0442		14.5581	14.5581	0.0148		14.8697
Total	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8523	2,089.8523	0.0546	0.0381	2,102.7937

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	3.4927					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1902	1.0000e-005	0.0104	0.0000		0.1314	0.1314		0.1301	0.1301	0.0000	2,075.2941	2,075.2941	0.0398	0.0381	2,087.9240
Landscaping	0.2582	0.0959	8.1978	4.3000e-004		0.0442	0.0442		0.0442	0.0442		14.5581	14.5581	0.0148		14.8697
Architectural Coating	0.3780					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	4.3191	0.0959	8.2082	4.3000e-004		0.1757	0.1757		0.1743	0.1743	0.0000	2,089.8523	2,089.8523	0.0546	0.0381	2,102.7937

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

TTM 36939
Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	98.00	Dwelling Unit	34.60	176,400.00	280

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	630.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site acreage from project plans.

Construction Phase - Schedule based on starting construction in 2016, assume that architectural coatings applied during building construction phase.

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - Using trip rate from project traffic study - used peak daily rate for all days.

Woodstoves - Assume no woodburning allowed and that all homes have a natural gas fireplace.

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Sequestration - Estimate the number of new trees from the site plan.

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	38.00
tblConstructionPhase	NumDays	740.00	60.00
tblConstructionPhase	NumDays	75.00	40.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	PhaseEndDate	9/7/2016	7/15/2016
tblConstructionPhase	PhaseStartDate	7/16/2016	5/25/2016
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	83.30	98.00
tblFireplaces	NumberNoFireplace	9.80	0.00
tblFireplaces	NumberWood	4.90	0.00
tblLandUse	LotAcreage	31.82	34.60
tblProjectCharacteristics	OperationalYear	2014	2016
tblSequestration	NumberOfNewTrees	0.00	50.00
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	9.57	9.52
tblWoodstoves	NumberCatalytic	4.90	0.00
tblWoodstoves	NumberNoncatalytic	4.90	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.0468	3.5957	2.5333	3.4300e-003	0.3799	0.1992	0.5791	0.1781	0.1847	0.3628	0.0000	314.5677	314.5677	0.0832	0.0000	316.3156
Total	1.0468	3.5957	2.5333	3.4300e-003	0.3799	0.1992	0.5791	0.1781	0.1847	0.3628	0.0000	314.5677	314.5677	0.0832	0.0000	316.3156

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.0468	3.5957	2.5333	3.4300e-003	0.1639	0.1992	0.3630	0.0737	0.1847	0.2583	0.0000	314.5674	314.5674	0.0832	0.0000	316.3153
Total	1.0468	3.5957	2.5333	3.4300e-003	0.1639	0.1992	0.3630	0.0737	0.1847	0.2583	0.0000	314.5674	314.5674	0.0832	0.0000	316.3153

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.86	0.00	37.31	58.65	0.00	28.79	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7411	0.0120	1.0249	5.0000e-005		7.1700e-003	7.1700e-003		7.1500e-003	7.1500e-003	0.0000	25.1843	25.1843	2.1300e-003	4.3000e-004	25.3629
Energy	0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	391.9598	391.9598	0.0133	5.2900e-003	393.8774
Mobile	0.6144	2.2109	7.1067	0.0170	1.2091	0.0302	1.2393	0.3231	0.0277	0.3508	0.0000	1,356.3769	1,356.3769	0.0466	0.0000	1,357.3560
Waste						0.0000	0.0000		0.0000	0.0000	23.3034	0.0000	23.3034	1.3772	0.0000	52.2243
Water						0.0000	0.0000		0.0000	0.0000	2.0257	36.5900	38.6157	0.2097	5.2600e-003	44.6510
Total	1.3733	2.3754	8.1965	0.0181	1.2091	0.0497	1.2588	0.3231	0.0472	0.3703	25.3291	1,810.1110	1,835.4401	1.6490	0.0110	1,873.4716

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7411	0.0120	1.0249	5.0000e-005		7.1700e-003	7.1700e-003		7.1500e-003	7.1500e-003	0.0000	25.1843	25.1843	2.1300e-003	4.3000e-004	25.3629
Energy	0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	391.9598	391.9598	0.0133	5.2900e-003	393.8774
Mobile	0.6144	2.2109	7.1067	0.0170	1.2091	0.0302	1.2393	0.3231	0.0277	0.3508	0.0000	1,356.3769	1,356.3769	0.0466	0.0000	1,357.3560
Waste						0.0000	0.0000		0.0000	0.0000	23.3034	0.0000	23.3034	1.3772	0.0000	52.2243
Water						0.0000	0.0000		0.0000	0.0000	2.0257	36.5900	38.6157	0.2097	5.2500e-003	44.6478
Total	1.3733	2.3754	8.1965	0.0181	1.2091	0.0497	1.2588	0.3231	0.0472	0.3703	25.3291	1,810.1110	1,835.4401	1.6489	0.0110	1,873.4684

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00
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2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	35.4000
Total	35.4000

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2016	2/26/2016	5	20	
2	Grading	Grading	2/27/2016	4/22/2016	5	40	
3	1st Phase of Home Construction	Building Construction	4/23/2016	7/15/2016	5	60	
4	Architectural Coating	Architectural Coating	5/25/2016	7/15/2016	5	38	
5	Paving	Paving	7/16/2016	9/30/2016	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 100

Acres of Paving: 0

Residential Indoor: 357,210; Residential Outdoor: 119,070; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
1st Phase of Home Construction	Cranes	1	7.00	226	0.29
1st Phase of Home Construction	Forklifts	3	8.00	89	0.20
1st Phase of Home Construction	Generator Sets	1	8.00	84	0.74
1st Phase of Home Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
1st Phase of Home Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
1st Phase of Home Construction	9	35.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0508	0.5463	0.4111	3.9000e-004		0.0294	0.0294		0.0270	0.0270	0.0000	36.8771	36.8771	0.0111	0.0000	37.1107
Total	0.0508	0.5463	0.4111	3.9000e-004	0.1807	0.0294	0.2101	0.0993	0.0270	0.1264	0.0000	36.8771	36.8771	0.0111	0.0000	37.1107

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	9.0000e-004	9.1200e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.6784	1.6784	8.0000e-005	0.0000	1.6800
Total	6.2000e-004	9.0000e-004	9.1200e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.6784	1.6784	8.0000e-005	0.0000	1.6800

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0705	0.0000	0.0705	0.0387	0.0000	0.0387	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0508	0.5463	0.4111	3.9000e-004		0.0294	0.0294		0.0270	0.0270	0.0000	36.8771	36.8771	0.0111	0.0000	37.1107
Total	0.0508	0.5463	0.4111	3.9000e-004	0.0705	0.0294	0.0999	0.0387	0.0270	0.0658	0.0000	36.8771	36.8771	0.0111	0.0000	37.1107

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	9.0000e-004	9.1200e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.6784	1.6784	8.0000e-005	0.0000	1.6800
Total	6.2000e-004	9.0000e-004	9.1200e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.6784	1.6784	8.0000e-005	0.0000	1.6800

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.1735	0.0000	0.1735	0.0719	0.0000	0.0719	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1296	1.4963	0.9828	1.2300e-003		0.0717	0.0717		0.0660	0.0660	0.0000	116.3915	116.3915	0.0351	0.0000	117.1287
Total	0.1296	1.4963	0.9828	1.2300e-003	0.1735	0.0717	0.2452	0.0719	0.0660	0.1379	0.0000	116.3915	116.3915	0.0351	0.0000	117.1287

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3700e-003	2.0100e-003	0.0203	5.0000e-005	4.4000e-003	3.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.1900e-003	0.0000	3.7297	3.7297	1.7000e-004	0.0000	3.7333
Total	1.3700e-003	2.0100e-003	0.0203	5.0000e-005	4.4000e-003	3.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.1900e-003	0.0000	3.7297	3.7297	1.7000e-004	0.0000	3.7333

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0677	0.0000	0.0677	0.0281	0.0000	0.0281	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1296	1.4963	0.9828	1.2300e-003		0.0717	0.0717		0.0660	0.0660	0.0000	116.3913	116.3913	0.0351	0.0000	117.1286
Total	0.1296	1.4963	0.9828	1.2300e-003	0.0677	0.0717	0.1393	0.0281	0.0660	0.0940	0.0000	116.3913	116.3913	0.0351	0.0000	117.1286

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3700e-003	2.0100e-003	0.0203	5.0000e-005	4.4000e-003	3.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.1900e-003	0.0000	3.7297	3.7297	1.7000e-004	0.0000	3.7333
Total	1.3700e-003	2.0100e-003	0.0203	5.0000e-005	4.4000e-003	3.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.1900e-003	0.0000	3.7297	3.7297	1.7000e-004	0.0000	3.7333

3.4 1st Phase of Home Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1022	0.8552	0.5552	8.0000e-004		0.0590	0.0590		0.0555	0.0555	0.0000	72.6461	72.6461	0.0180	0.0000	73.0244
Total	0.1022	0.8552	0.5552	8.0000e-004		0.0590	0.0590		0.0555	0.0555	0.0000	72.6461	72.6461	0.0180	0.0000	73.0244

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4600e-003	0.0263	0.0308	6.0000e-005	1.8600e-003	4.9000e-004	2.3500e-003	5.3000e-004	4.5000e-004	9.8000e-004	0.0000	5.7292	5.7292	4.0000e-005	0.0000	5.7300
Worker	3.6100e-003	5.2800e-003	0.0532	1.3000e-004	0.0115	7.0000e-005	0.0116	3.0600e-003	7.0000e-005	3.1300e-003	0.0000	9.7904	9.7904	4.6000e-004	0.0000	9.7999
Total	6.0700e-003	0.0316	0.0840	1.9000e-004	0.0134	5.6000e-004	0.0140	3.5900e-003	5.2000e-004	4.1100e-003	0.0000	15.5196	15.5196	5.0000e-004	0.0000	15.5299

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1022	0.8552	0.5552	8.0000e-004		0.0590	0.0590		0.0555	0.0555	0.0000	72.6460	72.6460	0.0180	0.0000	73.0244
Total	0.1022	0.8552	0.5552	8.0000e-004		0.0590	0.0590		0.0555	0.0555	0.0000	72.6460	72.6460	0.0180	0.0000	73.0244

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4600e-003	0.0263	0.0308	6.0000e-005	1.8600e-003	4.9000e-004	2.3500e-003	5.3000e-004	4.5000e-004	9.8000e-004	0.0000	5.7292	5.7292	4.0000e-005	0.0000	5.7300
Worker	3.6100e-003	5.2800e-003	0.0532	1.3000e-004	0.0115	7.0000e-005	0.0116	3.0600e-003	7.0000e-005	3.1300e-003	0.0000	9.7904	9.7904	4.6000e-004	0.0000	9.7999

Total	6.0700e-003	0.0316	0.0840	1.9000e-004	0.0134	5.6000e-004	0.0140	3.5900e-003	5.2000e-004	4.1100e-003	0.0000	15.5196	15.5196	5.0000e-004	0.0000	15.5299
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3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6899					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-003	0.0451	0.0358	6.0000e-005		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	4.8512	4.8512	5.7000e-004	0.0000	4.8632
Total	0.6969	0.0451	0.0358	6.0000e-005		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	4.8512	4.8512	5.7000e-004	0.0000	4.8632

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	6.7000e-004	6.7400e-003	2.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2401	1.2401	6.0000e-005	0.0000	1.2413
Total	4.6000e-004	6.7000e-004	6.7400e-003	2.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2401	1.2401	6.0000e-005	0.0000	1.2413

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6899					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-003	0.0451	0.0358	6.0000e-005		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	4.8512	4.8512	5.7000e-004	0.0000	4.8632
Total	0.6969	0.0451	0.0358	6.0000e-005		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	4.8512	4.8512	5.7000e-004	0.0000	4.8632

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	6.7000e-004	6.7400e-003	2.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2401	1.2401	6.0000e-005	0.0000	1.2413
Total	4.6000e-004	6.7000e-004	6.7400e-003	2.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2401	1.2401	6.0000e-005	0.0000	1.2413

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0575	0.6156	0.4075	6.1000e-004		0.0347	0.0347		0.0319	0.0319	0.0000	57.7880	57.7880	0.0174	0.0000	58.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0575	0.6156	0.4075	6.1000e-004		0.0347	0.0347		0.0319	0.0319	0.0000	57.7880	57.7880	0.0174	0.0000	58.1540

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4200e-003	2.0700e-003	0.0209	5.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.8462	3.8462	1.8000e-004	0.0000	3.8500
Total	1.4200e-003	2.0700e-003	0.0209	5.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.8462	3.8462	1.8000e-004	0.0000	3.8500

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0575	0.6156	0.4075	6.1000e-004		0.0347	0.0347		0.0319	0.0319	0.0000	57.7879	57.7879	0.0174	0.0000	58.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0575	0.6156	0.4075	6.1000e-004		0.0347	0.0347		0.0319	0.0319	0.0000	57.7879	57.7879	0.0174	0.0000	58.1540

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4200e-003	2.0700e-003	0.0209	5.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.8462	3.8462	1.8000e-004	0.0000	3.8500
Total	1.4200e-003	2.0700e-003	0.0209	5.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.8462	3.8462	1.8000e-004	0.0000	3.8500

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6144	2.2109	7.1067	0.0170	1.2091	0.0302	1.2393	0.3231	0.0277	0.3508	0.0000	1,356.3769	1,356.3769	0.0466	0.0000	1,357.3560
Unmitigated	0.6144	2.2109	7.1067	0.0170	1.2091	0.0302	1.2393	0.3231	0.0277	0.3508	0.0000	1,356.3769	1,356.3769	0.0466	0.0000	1,357.3560

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Single Family Housing	932.96	932.96	932.96	3,188,066	3,188,066
Total	932.96	932.96	932.96	3,188,066	3,188,066

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462438	0.069856	0.176572	0.170752	0.045136	0.007399	0.012745	0.042494	0.000970	0.001060	0.006446	0.000893	0.003237

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	215.3706	215.3706	9.9000e-003	2.0500e-003	216.2134
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	215.3706	215.3706	9.9000e-003	2.0500e-003	216.2134
NaturalGas Mitigated	0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	176.5893	176.5893	3.3800e-003	3.2400e-003	177.6640
NaturalGas Unmitigated	0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	176.5893	176.5893	3.3800e-003	3.2400e-003	177.6640

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	3.30916e+006	0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	176.5893	176.5893	3.3800e-003	3.2400e-003	177.6640
Total		0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	176.5893	176.5893	3.3800e-003	3.2400e-003	177.6640

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	3.30916e+006	0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	176.5893	176.5893	3.3800e-003	3.2400e-003	177.6640
Total		0.0178	0.1525	0.0649	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	176.5893	176.5893	3.3800e-003	3.2400e-003	177.6640

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	752605	215.3706	9.9000e-003	2.0500e-003	216.2134

Total		215.3706	9.9000e-003	2.0500e-003	216.2134
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Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	752605	215.3706	9.9000e-003	2.0500e-003	216.2134
Total		215.3706	9.9000e-003	2.0500e-003	216.2134

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7411	0.0120	1.0249	5.0000e-005		7.1700e-003	7.1700e-003		7.1500e-003	7.1500e-003	0.0000	25.1843	25.1843	2.1300e-003	4.3000e-004	25.3629
Unmitigated	0.7411	0.0120	1.0249	5.0000e-005		7.1700e-003	7.1700e-003		7.1500e-003	7.1500e-003	0.0000	25.1843	25.1843	2.1300e-003	4.3000e-004	25.3629

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0690					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.3800e-003	0.0000	1.3000e-004	0.0000		1.6400e-003	1.6400e-003		1.6300e-003	1.6300e-003	0.0000	23.5334	23.5334	4.5000e-004	4.3000e-004	23.6767
Landscaping	0.0323	0.0120	1.0247	5.0000e-005		5.5300e-003	5.5300e-003		5.5300e-003	5.5300e-003	0.0000	1.6509	1.6509	1.6800e-003	0.0000	1.6862
Total	0.7411	0.0120	1.0249	5.0000e-005		7.1700e-003	7.1700e-003		7.1600e-003	7.1600e-003	0.0000	25.1843	25.1843	2.1300e-003	4.3000e-004	25.3629

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.6374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.3800e-003	0.0000	1.3000e-004	0.0000		1.6400e-003	1.6400e-003		1.6300e-003	1.6300e-003	0.0000	23.5334	23.5334	4.5000e-004	4.3000e-004	23.6767
Landscaping	0.0323	0.0120	1.0247	5.0000e-005		5.5300e-003	5.5300e-003		5.5300e-003	5.5300e-003	0.0000	1.6509	1.6509	1.6800e-003	0.0000	1.6862
Architectural Coating	0.0690					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.7411	0.0120	1.0249	5.0000e-005		7.1700e-003	7.1700e-003		7.1600e-003	7.1600e-003	0.0000	25.1843	25.1843	2.1300e-003	4.3000e-004	25.3629

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	38.6157	0.2097	5.2500e-003	44.6478
Unmitigated	38.6157	0.2097	5.2600e-003	44.6510

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	6.38509 / 4.02539	38.6157	0.2097	5.2600e-003	44.6510
Total		38.6157	0.2097	5.2600e-003	44.6510

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	6.38509 / 4.02539	38.6157	0.2097	5.2500e-003	44.6478

Total		38.6157	0.2097	5.2500e-003	44.6478
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8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	23.3034	1.3772	0.0000	52.2243
Unmitigated	23.3034	1.3772	0.0000	52.2243

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	114.8	23.3034	1.3772	0.0000	52.2243
Total		23.3034	1.3772	0.0000	52.2243

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	114.8	23.3034	1.3772	0.0000	52.2243
Total		23.3034	1.3772	0.0000	52.2243

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	35.4000	0.0000	0.0000	35.4000

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	50	35.4000	0.0000	0.0000	35.4000
Total		35.4000	0.0000	0.0000	35.4000

Appendix F

Project Specific Water Quality Management Plan

For: **Tract 36939**

N/W Corner of Sunrise Avenue and Wilson Street

DEVELOPMENT NO.
DESIGN REVIEW NO.

Prepared for:

Banning Wilson 97, LLC
10621 Civic Center Drive
Rancho Cucamonga, CA 91730
Telephone: 909-481-1150

Prepared by:

Robert Otte, PE, QSD
Otte-Berkeley Groupe, Inc.
575 E. Carreon Drive
Colton, CA 92324
Telephone: 909-370-0911

Original Date Prepared: April, 2015

Revision Date(s): Date

OWNER'S CERTIFICATION

This project-specific Water Quality Management Plan (WQMP) has been prepared for:

Banning Wilson 97, LLC
by **Otte-Berkeley Groupe, Inc.**
for the project known as Tract 36939 at Sunrise Avenue and Wilson Street.

This WQMP is intended to comply with the requirements of **Banning** for **Error! Reference source not found.**, which includes the requirement for the preparation and implementation of a project-specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity.

The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under **City of Banning** Water Quality Ordinance (Municipal Code Section 1415 § 6).

If the undersigned transfers its interest in the subject property/project, the undersigned shall notify the successor in interest of its responsibility to implement this WQMP.

"I, the undersigned, certify under penalty of law that I am the owner of the property that is the subject of this WQMP, and that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature

Owner's Printed Name

Owner's Title/Position

Date

10621 Civic Center Drive
Rancho Cucamonga, CA 91730
Telephone: 909-481-1150

ATTEST

Notary Signature

Printed Name

Title/Position

Date

THIS FORM SHALL BE NOTARIZED BEFORE ACCEPTANCE OF THE
FINAL PROJECT SPECIFIC WQMP

Date

Contents

<u>SECTION</u>	<u>PAGE</u>
I. Project Description	1
II. Site Characterization.....	5
III. Pollutants of Concern.....	7
IV. Hydrologic Conditions of Concern	8
V. Best Management Practices	9
V.1 SITE DESIGN BMP CONCEPTS, LID/SITE DESIGN AND TREATMENT CONTROL BMPs	9
V.1.A SITE DESIGN BMP CONCEPTS AND LID/SITE DESIGN BMPs	11
V.1.B TREATMENT CONTROL BMPs	17
V.1.C MEASURABLE GOAL SUMMARY	19
V.2 SOURCE CONTROL BMPs.....	20
V.3 EQUIVALENT TREATMENT CONTROL BMP ALTERNATIVES.....	22
V.4 REGIONALLY-BASED BMPs.....	22
VI. Operation and Maintenance Responsibility for BMPs.....	23
VII. Funding.....	24

TABLES

TABLE 1. POLLUTANT OF CONCERN SUMMARY	7
TABLE 2. BMP SELECTION MATRIX BASED UPON POLLUTANT OF CONCERN REMOVAL EFFICIENCY	10
TABLE 3. IMPLEMENTATION OF SITE DESIGN BMP CONCEPTS	12
TABLE 4. LID/SITE DESIGN BMPs MEETING THE LID/SITE DESIGN MEASURABLE GOAL	16
TABLE 5: TREATMENT CONTROL BMP SUMMARY	18
TABLE 6: MEASURABLE GOAL SUMMARY	19
TABLE 7. SOURCE CONTROL BMPs	20

APPENDICES

A. CONDITIONS OF APPROVAL	
B. VICINITY MAP, WQMP SITE PLAN, AND RECEIVING WATERS MAP	
C. SUPPORTING DETAIL RELATED TO HYDROLOGIC CONDITIONS OF CONCERN (IF APPLICABLE)	
D. EDUCATIONAL MATERIALS	
E. SOILS REPORT (IF APPLICABLE)	
F. STRUCTURAL BMP AND/OR RETENTION FACILITY SIZING CALCULATIONS AND DESIGN DETAILS	
G. AGREEMENTS – CC&RS, COVENANT AND AGREEMENTS, BMP MAINTENANCE AGREEMENTS AND/OR OTHER MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP	
H. PHASE 1 ENVIRONMENTAL SITE ASSESSMENT – SUMMARY OF SITE REMEDIATION CONDUCTED AND USE RESTRICTIONS	
I. PROJECT-SPECIFIC WQMP SUMMARY DATA FORM	

I. Project Description

Project Owner: Banning Wilson 97, LLC
10621 Civic Center Drive
Rancho Cucamonga, CA 91730
909-481-1150

WQMP Preparer: Otte-Berkeley Groupe, Inc
575 E. Carreon Drive
Colton, CA 92324
909-370-0911

Project Site Address: N/W Corner of Sunrise Avenue & Wilson Street
Banning, CA

**Planning Area/
Community Name/
Development Name:** N/A

APN Number(s): 535-430-001 thru 535-430-021
535-431-001 thru 535-431-015
535-432-001 thru 535-432-017
535-070-004 & 535-007-006

Latitude & Longitude: 33.933742° / 116.906562°

Receiving Water: Montgomery Creek

Project Site Size: 34.4 Acres

Standard Industrial Classification (SIC) Code: N/A – Single Family Residential

**Formation of Home Owners' Association (HOA)
or Property Owners Association (POA):** Y N

Additional Permits/Approvals required for the Project:

AGENCY	Permit required
State Department of Fish and Wildlife, Fish and Game Code §1602 Streambed Alteration Agreement	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Certification	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
US Army Corps of Engineers, CWA Section 404 permit	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
US Fish and Wildlife, Endangered Species Act Section 7 biological opinion	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Statewide Construction General Permit Coverage	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Statewide Industrial General Permit Coverage	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Other <i>(please list in the space below as required)</i>	

The project consists of two previously entitled tracts. Tract 30642, recorded in 2007, occupies the Eastern $\frac{1}{3}$ of the site and Tentative Tract 32429, approved by the City in 2005, composes the Western $\frac{2}{3}$. These tracts combined to total 97 lots.

Subsequent to the entitlement of these tracts, a fault was discovered running east-west near the northern boundary of both properties. Geologic investigation has established a recommended fault-setback line consistent with the requirements of the Alquist-Priolo Act. The effect of this setback is to render approximately 25 lots unbuildable in the current configuration.

The project proposes to remap both tracts into a new single map totaling 98 lots. Existing dedications made on recorded Tract 30642 would be vacated and replaced with new dedications on the new map. A substantial portion of Tract 30642 will be identical to the new map.

The western portion of the site, Tentative Tract 32429, will be reconfigured. The project proposes to remove the RL-10,000 zoning overlay that currently exists and revert to the underlying Low Density Residential zone thus allowing lot sizes of 7,000 square-feet consistent with the eastern portion of the site. This will allow the creation of one cohesive community with the same standards rather than two distinct developments.

A lettered lot "A" is proposed to be dedicated to the City. Much of lot "A" is within the seismic setback zone and is unusable for development. The area immediately north of lot "A" is zoned as Open Space. The project proposes to incorporate lot "A" into this adjacent open space. Although no grading is depicted on the accompanying site plan, grading – in form of slopes – will occur within lot "A".

Two Water Quality Basins are proposed. These will serve to retain developed condition runoff and mitigate developed condition flows as required by City Ordinance.

Appendix A of this project-specific WQMP includes a complete copy of the final Conditions of Approval. Appendix B of this project-specific WQMP includes:

- a. A Vicinity Map identifying the project site and surrounding planning areas in sufficient detail; and
- b. A Site Plan for the project. The Site Plan included as part of Appendix B depicts the following project features:
 - Location and identification of all structural BMPs, including Source Control, LID/Site Design and Treatment Control BMPs.
 - Landscaped areas.
 - Paved areas and intended uses (i.e., parking, outdoor work area, outdoor material storage area, sidewalks, patios, tennis courts, etc.).
 - Number and type of structures and intended uses (i.e., buildings, tenant spaces, dwelling units, community facilities such as pools, recreation facilities, tot lots, etc.).

- Infrastructure (i.e., streets, storm drains, etc.) that will revert to public agency ownership and operation.
- Location of existing and proposed public and private storm drainage facilities (i.e., storm drains, channels, basins, etc.), including catch basins and other inlets/outlet structures. Existing and proposed drainage facilities should be clearly differentiated.
- Location(s) of Receiving Waters to which the project directly or indirectly discharges.
- Location of points where onsite (or tributary offsite) flows exit the property/project site.
- Delineation of proposed drainage area boundaries, including tributary offsite areas, for each location where flows exit the project site and existing site (where existing site flows are required to be addressed). Each tributary area should be clearly denoted.
- Pre- and post-project topography.

Appendix I is a one page form that summarizes pertinent information relative to this project-specific WQMP.

II. Site Characterization

Land Use Designation or Zoning: **Low Density Residential (East Half)**
Low Density Residential w/ RL-10,000 overlay (West Half)

Current Property Use: **East half previously rough graded. West half vacant and undeveloped.**

Proposed Property Use: **Single Family Residential Subdivision**

Availability of Soils Report: Y N *Note: A soils report is required if infiltration BMPs are utilized. Attach report in Appendix E.*

Phase 1 Site Assessment: Y N *Note: If prepared, attached remediation summary and use restrictions in Appendix H.*

Receiving Waters for Urban Runoff from Site

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use Designated Receiving Waters
Montgomery Creek	None	None	N/A
San Geronio River	None	AGR, GWR, REC I, REC II, COLD, WILD	N/A
Whitewater River	None	MUN, AGR, GWR, REC I, REC II, COLD, WILD, POW	N/A

III. Pollutants of Concern

Table 1. Pollutant of Concern Summary

Pollutant Category	Potential for Project and/or Existing Site	Causing Receiving Water Impairment
Bacteria/Virus	P	No
Heavy Metals	N	No
Nutrients	P	No
Toxic Organic Compounds	N	No
Sediment/Turbidity	P	No
Trash & Debris	P	No
Oil & Grease	P	No
Other (specify pollutant):		
Other (specify pollutant):		

IV. Hydrologic Conditions of Concern

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

- Yes The project will be required to retain urban runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater"). This section does not need to be completed; however, retention facility design details and sizing calculations must be included in Appendix F.
- No This section must be completed.

This Project meets the following condition:

- Condition A:** 1) Runoff from the Project is discharged directly to a publicly-owned, operated and maintained MS4 or engineered and maintained channel, 2) the discharge is in full compliance with local land use authority requirements for connections and discharges to the MS4 (including both quality and quantity requirements), 3) the discharge would not significantly impact stream habitat in proximate Receiving Waters, **and** 4) the discharge is authorized by the local land use authority.
- Condition B:** The project disturbs less than 1 acre and is not part of a larger common plan of development that exceeds 1 acre of disturbance. The disturbed area calculation must include all disturbances associated with larger plans of development.
- Condition C:** The project's runoff flow rate, volume, velocity and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour and 10-year 24-hour rainfall events. This condition can be achieved by, where applicable, complying with the local land use authority's on-site retention ordinance, or minimizing impervious area on a site and incorporating other Site-Design BMP concepts and LID/Site Design BMPs that assure non-exceedance of pre-development conditions. This condition must be substantiated by hydrologic modeling methods acceptable to the local land use authority.
- None:** Refer to Section 3.4 of the Whitewater River Region WQMP Guidance document for additional requirements.

Supporting engineering studies, calculations, and reports are included in Appendix C.

	2 year – 24 hour		10 year – 24 hour	
	Precondition	Post-condition	Precondition	Post-condition
Discharge (cfs)				
Velocity (fps)				
Volume (cubic feet)				
Duration (minutes)				

V. Best Management Practices

This project implements Best Management Practices (BMPs) to address the Pollutants of Concern that may potentially be generated from the use of the Project Site. These BMPs have been selected and implemented to comply with Section 3.5 of the WQMP Guidance document, and consist of Site Design BMP concepts, Source Control, LID/Site Design and, if/where necessary, Treatment Control BMPs as described herein.

V.1 SITE DESIGN BMP CONCEPTS, LID/SITE DESIGN AND TREATMENT CONTROL BMPs

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes The project will be required to retain Urban Runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater). **The LID/Site Design measurable goal has thus been met (100%), and Sections V.1.A and V.1.B do not need to be completed;** however, retention facility design details and sizing calculations must be included in Appendix F, and '100%' should be entered into Column 3 of Table 6 below.

No Section V.1 must be completed.

This section of the Project-Specific WQMP documents the LID/Site Design BMPs and, if/where necessary, the Treatment Control BMPs that will be implemented on the project to meet the requirements detailed within Section 3.5.1 of the WQMP Guidance document. Section 3.5.1 includes requirements to implement Site Design Concepts and BMPs, and includes requirements to address Pollutants of Concern with BMPs. Further, sub-section 3.5.1.1 specifically requires that Pollutants of Concern be addressed with LID/Site Design BMPs to the extent feasible.

LID/Site Design BMPs are those BMPs listed within Table 2 below which promote retention and/or feature a natural treatment mechanism; off-site and regionally-based BMPs are also LID/Site Design BMPs, and therefore count towards the measurable goal, if they fit these criteria. This project incorporates LID/Site Design BMPs to fully address the Treatment Control BMP requirement where and to the extent feasible. If and where it has been acceptably demonstrated to the local land use authority that it is infeasible to fully meet this requirement with LID/Site Design BMPs, Section V.1.B (below) includes a description of the conventional Treatment Control BMPs that will be substituted to meet the same requirements.

In addressing Pollutants of Concern, BMPs are selected using Table 2 below.

Table 2. BMP Selection Matrix Based Upon Pollutant of Concern Removal Efficiency⁽¹⁾

(Sources: Riverside County Flood Control & Water Conservation District Design Handbook for Low Impact Development Best Management Practices, dated September 2011, the Orange County Technical Guidance Document for Water Quality Management Plans, dated May 19, 2011, and the Caltrans Treatment BMP Technology Report, dated April 2010 and April 2008)

Pollutant of Concern	Landscape Swale ^{2, 3}	Landscape Strip ^{2, 3}	Biofiltration (with underdrain) ^{2, 3}	Extended Detention Basin ²	Sand Filter Basin ²	Infiltration Basin ²	Infiltration Trench ²	Permeable Pavement ²	Bioretention (w/o underdrain) ^{2, 3}	Other BMPs Including Proprietary BMPs ^{4, 6}
Sediment & Turbidity	M	M	H	M	H	H	H	H	H	Varies by Product ⁵
Nutrients	L/M	L/M	M	L/M	L/M	H	H	H	H	
Toxic Organic Compounds	M/H	M/H	M/H	L	L/M	H	H	H	H	
Trash & Debris	L	L	H	H	H	H	H	L	H	
Bacteria & Viruses (also: Pathogens)	L	M	H	L	M	H	H	H	H	
Oil & Grease	M	M	H	M	H	H	H	H	H	
Heavy Metals	M	M/H	M/H	L/M	M	H	H	H	H	
<p>Abbreviations: L: Low removal efficiency M: Medium removal efficiency H: High removal efficiency</p> <p>Notes:</p> <ol style="list-style-type: none"> (1) Periodic performance assessment and updating of the guidance provided by this table may be necessary. (2) Expected performance when designed in accordance with the most current edition of the document, "Riverside County, Whitewater River Region Stormwater Quality Best Management Practice Design Handbook". (3) Performance dependent upon design which includes implementation of thick vegetative cover. Local water conservation and/or landscaping requirements should be considered; approval is based on the discretion of the local land use authority. (4) Includes proprietary stormwater treatment devices as listed in the CASQA Stormwater Best Management Practices Handbooks, other stormwater treatment BMPs not specifically listed in this WQMP (including proprietary filters, hydrodynamic separators, inserts, etc.), or newly developed/emerging stormwater treatment technologies. (5) Expected performance should be based on evaluation of unit processes provided by BMP and available testing data. Approval is based on the discretion of the local land use authority. (6) When used for primary treatment as opposed to pre-treatment, requires site-specific approval by the local land use authority. 										

V.1.A SITE DESIGN BMP CONCEPTS AND LID/SITE DESIGN BMPs

This section documents the Site Design BMP concepts and LID/Site Design BMPs that will be implemented on this project to comply with the requirements detailed in Section 3.5.1 of the WQMP Guidance document.

- Table 3 herein documents the implementation of the Site Design BMP Concepts described in sub-sections 3.5.1.3 and 3.5.1.4.
 - Table 4 herein documents the extent to which this project has implemented the LID/Site Design goals described in sub-section 3.5.1.1.
-

Table 3. Implementation of Site Design BMP Concepts

Design Concept	Technique	Specific BMP	Included			Brief Reason for BMPs Indicated as No or N/A
			Yes	No	N/A	
<i>Site Design BMP Concept 1</i>	Minimize Urban Runoff, Minimize Impervious Footprint, and Conserve Natural Areas (See WQMP Section 3.5.1.3)	Conserve natural areas by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Conserve natural areas by incorporating the goals of the Multi-Species Habitat Conservation Plan or other natural resource plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Preserve natural drainage features and natural depressional storage areas on the site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Use natural drainage systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Where applicable, incorporate Self-Treating Areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Where applicable, incorporate Self-Retaining Areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Increase the building floor to area ratio (i.e., number of stories above or below ground).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Construct streets, sidewalks and parking lot aisles to minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Reduce widths of streets where off-street parking is available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included			Brief Reason for Each BMP Indicated as No or N/A
			Yes	No	N/A	
Site Design BMP Concept 2 Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)		Design residential and commercial sites to contain and infiltrate roof runoff, or direct roof runoff to landscaped swales or buffer areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Incorporate landscaped buffer areas between sidewalks and streets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Use natural or landscaped drainage swales in lieu of underground piping or imperviously lined swales.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Where soil conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Maximize the permeable area by constructing walkways, trails, patios, overflow parking, alleys, driveways, low-traffic streets, and other low-traffic areas with open-jointed paving materials or permeable surfaces such as pervious concrete, porous asphalt, unit pavers, and granular materials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Use one or more of the following:				
		Rural swale system: street sheet flows to landscaped swale or gravel shoulder, curbs used at street corners, and culverts used under driveways and street crossings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Urban curb/swale system: street slopes to curb; periodic swale inlets drain to landscaped swale or biofilter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Dual drainage system: first flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder; high flows connect directly to MS4s.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Use one or more of the following for design of driveways and private residential parking areas:					
	Design driveways with shared access, flared (single lane at street), or wheel strips (paving only under the tires).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Uncovered temporary or guest parking on residential lots paved with a permeable surface, or designed to drain into landscaping.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included			Brief Reason for Each BMP Indicated as No or N/A
			Yes	No	N/A	
Site Design BMP Concept 2 (cont'd)	Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)	Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Use one or more of the following for design of parking areas:				
		Where landscaping is proposed in parking areas, incorporate parking area landscaping into the drainage design.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Overflow parking (parking stalls provided in excess of the Permittee's minimum parking requirements) may be constructed with permeable pavement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Other comparable and equally effective Site Design BMP (or BMPs) as approved by the local land use authority (Note: Additional narrative required describing BMP and how it addresses site design concept).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Project Site Design BMP Concepts:

Insert text here briefly describing how each included Site Design BMP concept will be implemented.

Alternative Project Site Design BMP Concepts:

Insert text here describing any other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority, or indicate N/A.

Justification of infeasibility for sub-areas not addressed with LID/Site Design BMPs

V.1.B TREATMENT CONTROL BMPs

Conventional Treatment Control BMPs shall be implemented to address the project's Pollutants of Concern as required in WQMP Section 3.5.1 where, and to the extent that, Section V.1.A has demonstrated that it is infeasible to meet these requirements through implementation of LID/Site Design BMPs.

- The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP completely address the 'Treatment Control BMP requirement' for the entire project site (and where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP Guidance document. Supporting documentation for the sizing of these LID/Site Design BMPs is included in Appendix F. ***Section V.1.B does not need to be completed.**
 - The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP do **NOT** completely address the 'Treatment Control BMP requirement' for the entire project site (or where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP. ***Section V.1.B must be completed.**
-

The Treatment Control BMPs identified in this section are selected, sized and implemented to treat the design criteria of V_{BMP} and/or Q_{BMP} for all project (and if required, existing site) drainage sub-areas which were not fully addressed using LID/Site Design BMPs. Supporting documentation for the sizing of these Treatment Control BMPs is included in Appendix F.

V.1.C MEASURABLE GOAL SUMMARY

This section documents the extent to which this project has met the measurable goal described in WQMP Section 3.5.1.1 of addressing 100% of the project's 'Treatment Control BMP requirement' with LID/Site Design BMPs. Projects required to retain Urban Runoff onsite in conformance with local ordinance are considered to have met the measurable goal; for these instances, '100%' is entered into Column 3 of the Table.

Table 6: Measurable Goal Summary

<p>(1) Total Area Treated with <u>LID/Site Design</u> BMPs (Last row of Table 4)</p>	<p>(2) Total Area Treated with <u>Treatment Control</u> BMPs (Last row of Table 5)</p>	<p>(3) % of Treatment Control BMP Requirement addressed with LID/Site Design BMPs</p>
		<p>100%</p>

V.2 SOURCE CONTROL BMPs

This section identifies and describes the Source Control BMPs applicable and implemented on this project.

Table 7. Source Control BMPs

BMP Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Non-Structural Source Control BMPs			
Education for Property Owners, Operators, Tenants, Occupants, or Employees	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Activity Restrictions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Irrigation System and Landscape Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Common Area Litter Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Street Sweeping Private Streets and Parking Lots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No private streets/pkng
Drainage Facility Inspection and Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Structural Source Control BMPs			
Storm Drain Inlet Stenciling and Signage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Landscape and Irrigation System Design	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Protect Slopes and Channels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Provide Community Car Wash Racks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed
Properly Design*:			
Fueling Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR
Air/Water Supply Area Drainage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR
Trash Storage Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed
Loading Docks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR
Maintenance Bays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR
Vehicle and Equipment Wash Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR
Outdoor Material Storage Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR
Outdoor Work Areas or Processing Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR
Provide Wash Water Controls for Food Preparation Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None proposed - SFR

*Details demonstrating proper design must be included in Appendix F.

Appendix D includes copies of the educational materials (described in Section 3.5.2.1 of the WQMP Guidance document) that will be used in implementing this project-specific WQMP.

V.3 EQUIVALENT TREATMENT CONTROL BMP ALTERNATIVES

Not Applicable

V.4 REGIONALLY-BASED BMPS

Not Applicable

VI. Operation and Maintenance Responsibility for BMPs

Appendix G of this project-specific WQMP includes copies of CC&Rs, Covenant and Agreements, BMP Maintenance Agreement and/or other mechanisms used to ensure the ongoing operation, maintenance, funding, transfer and implementation of the project-specific WQMP requirements.

VII. Funding

Funding sources are yet to be determined. Possibilities include the formation of a Home Owner's Association, or annexation into a Landscape Maintenance District.

Appendix A

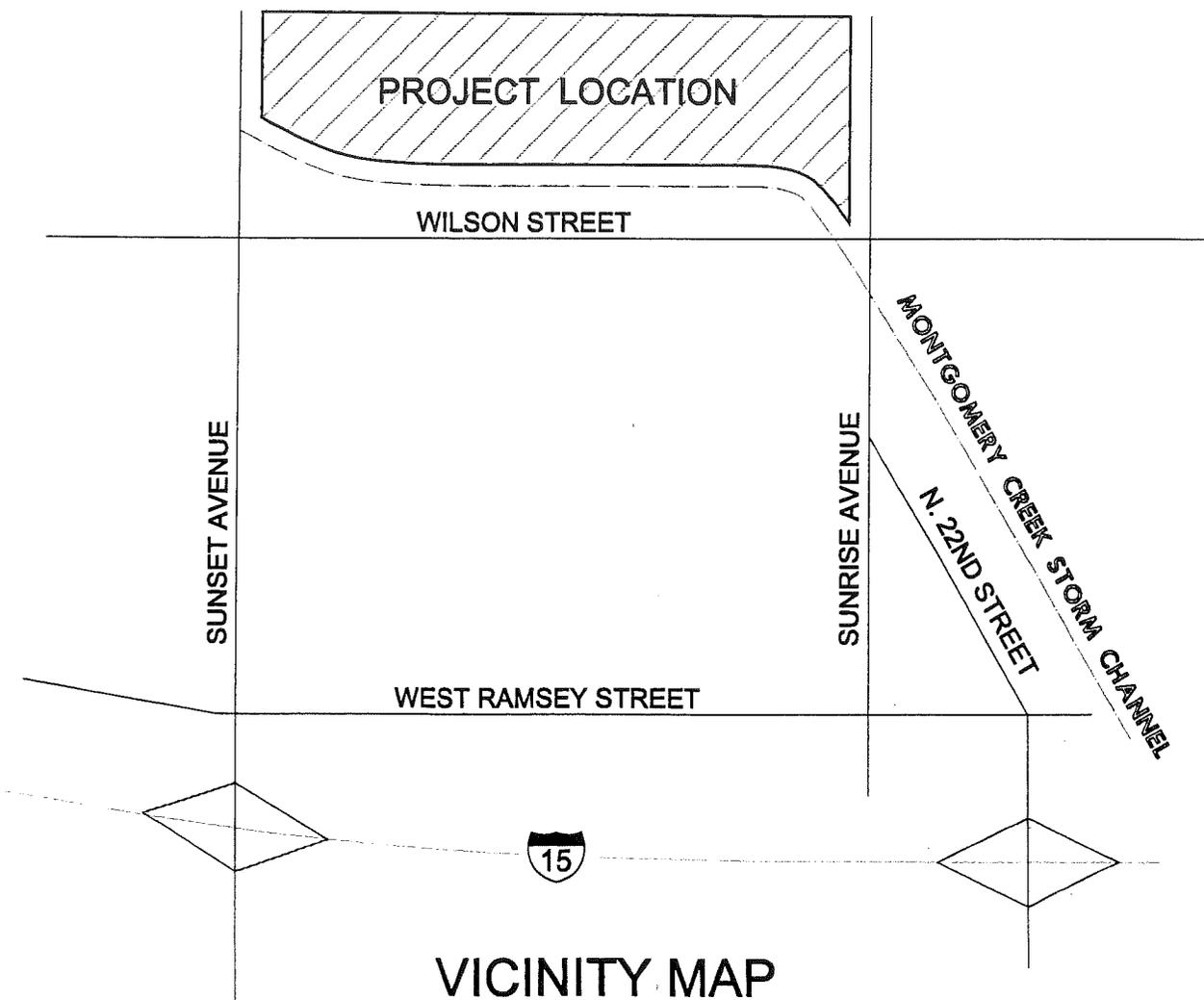
Conditions of Approval

Planning Commission Resolution _____

Dated _____

Appendix B

Vicinity Map, WQMP Site Plan, and Receiving Waters Map



VICINITY MAP
NOT TO SCALE

Appendix C

Supporting Detail Related to Hydrologic Conditions of Concern

Preliminary Drainage Report

Tentative Tract Map No. 36939

City of Banning

Job No.: 15002

Submitted April 2015

Prepared by:



OTTE-BERKELEY GROUPE, INC.

575 E. Carreon Drive
Colton, California 92324-3000
(909) 370-0911

Robert Otte, RCE 44120

TABLE OF CONTENTS

- I. Introduction
- II. Summary of Results
- III. Hydrology

Insert - Hydrology Node Maps

APPENDICES

- | | |
|------------|--------------------------------|
| Appendix A | Vicinity Map |
| Appendix B | Soils and Rainfall Data Sheets |
| Appendix C | Unity Hydrograph Studies |

I. Introduction

Tract Map No. 36939 is a proposed 34.40 acre residential subdivision consisting of 98 single family detached homes on minimum 7,000 SF lots. The development is located in the City of Banning, north of Wilson Street, between Sunset Avenue on the west and Sunrise Avenue on the east. Montgomery Creek Channel forms the southern boundary of the project.

City of Banning Ordinance #1415&6 requires that "all development will make provisions to store runoff from rainfall events up to and including the one-hundred-year, three-hour duration event onsite via storage or infiltration basins for new development and redevelopment. Post-development peak urban runoff discharge rates shall not exceed pre-development peak urban runoff discharge rates."

The purpose of this study is to establish the storage and discharge parameters referenced in the City ordinance.

Hydrologic calculations have been performed based on criteria provided in the County of Riverside Hydrology Manual.

II. Summary of Results

The calculations contained in this report indicate that the following parameters should be used in the design of Tract 36939:

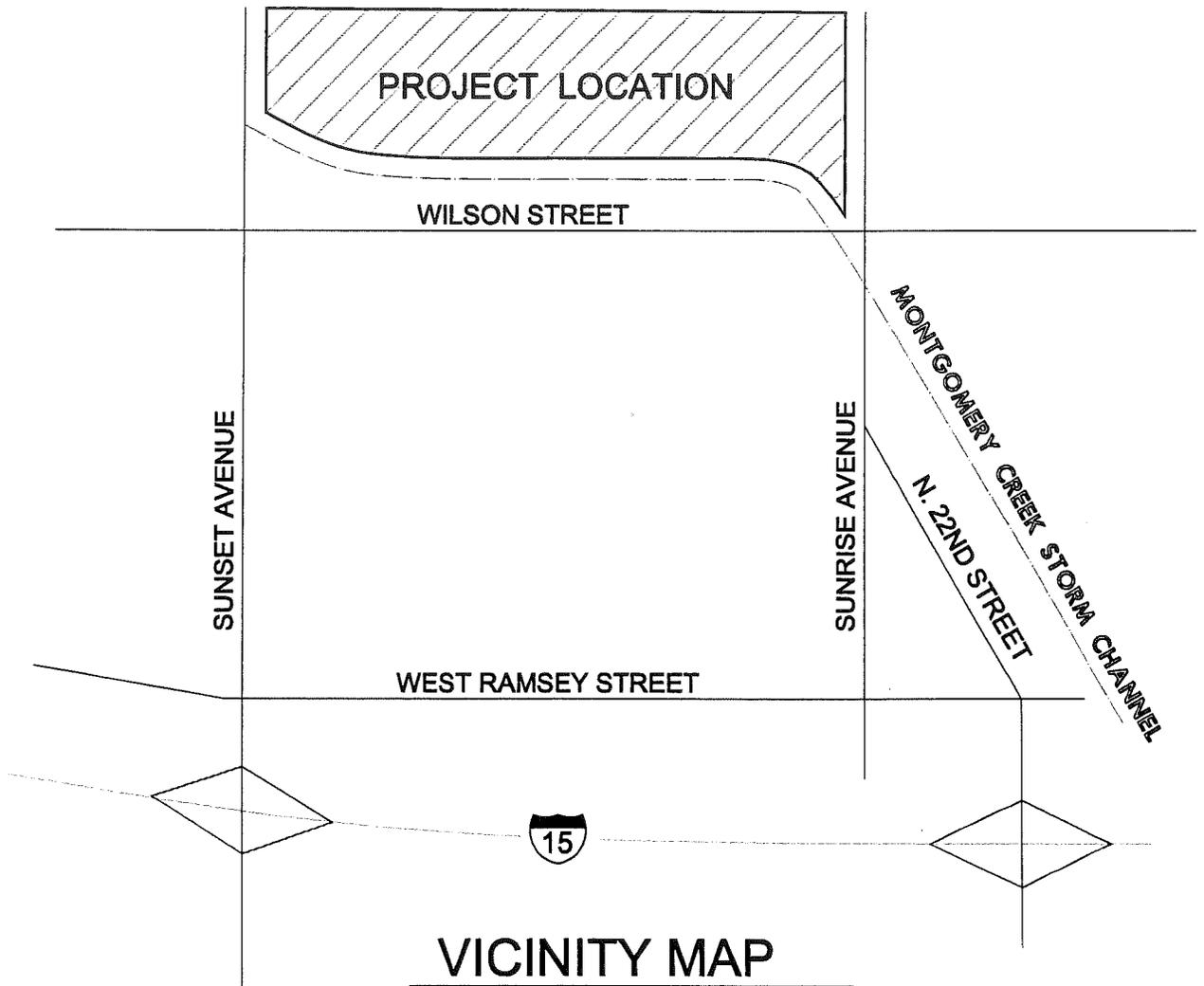
- I. Required Storage (developed condition, Q_{100} 3 hour-volume): 4.6 Ac-Ft
- II. Max Allowable Discharge (existing condition, Q_{100} , 3-hour peak flow): 58.45 CFS

III. Hydrology

A hydrologic analysis was performed using CivilD Unit Hydrograph software (Ver. 9.0) by CIVILCAD/CIVILDESIGN [*Appendix A*]. Per the USDA resource maps, the on-site Soil Type is A: Per NOAA atlas 14, volume 6, the 100-year, 1-hour peak rainfall is 1.78 inches.

APPENDIX A

Vicinity Map



VICINITY MAP
NOT TO SCALE

APPENDIX B

Soils and Rainfall Data Sheets

MAP LEGEND

	Area of Interest (AOI)		Soil Map Unit Polygons		Soil Map Unit Lines		Soil Map Unit Points		Special Point Features		Water Features		Streams and Canals		Transportation		Rails		Interstate Highways		US Routes		Major Roads		Local Roads		Background		Aerial Photography																
	Area of Interest (AOI)		Soil Map Unit Polygons		Soil Map Unit Lines		Soil Map Unit Points		Blowout		Borrow Pit		Clay Spot		Closed Depression		Gravel Pit		Gravelly Spot		Landfill		Lava Flow		Marsh or swamp		Mine or Quarry		Miscellaneous Water		Perennial Water		Rock Outcrop		Saline Spot		Sandy Spot		Severely Eroded Spot		Sinkhole		Slide or Slip		Sodic Spot

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 7, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 25, 2010—Jun 3, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Western Riverside Area, California (CA679)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GmD	Gorgonio gravelly loamy fine sand, 2 to 15 percent slopes	23.8	64.7%
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	0.3	0.7%
HcD2	Hanford coarse sandy loam, 8 to 15 percent slopes, eroded	6.1	16.5%
HfD	Hanford sandy loam, 2 to 15 percent slopes	3.8	10.3%
RsC	Riverwash	2.9	7.8%
TeG	Terrace escarpments	0.0	0.0%
Totals for Area of Interest		36.8	100.0%

Western Riverside Area, California

GmD—Gorgonio gravelly loamy fine sand, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: hcvg
Elevation: 20 to 3,000 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 250 to 310 days
Farmland classification: Not prime farmland

Map Unit Composition

Gorgonio and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gorgonio

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 15 inches: gravelly loamy fine sand
H2 - 15 to 60 inches: stratified gravelly loamy sand to gravelly loamy fine sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: Sandy (1975) (R019XD035CA)

Minor Components

Hanford

Percent of map unit: 5 percent

Soboba

Percent of map unit: 5 percent

Tujunga

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 1 percent

Data Source Information

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 7, Sep 17, 2014

Western Riverside Area, California

HcD2—Hanford coarse sandy loam, 8 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcw3

Elevation: 150 to 900 feet

Mean annual precipitation: 9 to 20 inches

Mean annual air temperature: 63 to 64 degrees F

Frost-free period: 250 to 280 days

Famland classification: Famland of statewide importance

Map Unit Composition

Hanford and similar soils: 85 percent

Minor components: 15 percent

*Estimates are based on observations, descriptions, and transects of the
mapunit.*

Description of Hanford

Setting

Landform: Alluvial fans

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: coarse sandy loam

H2 - 8 to 40 inches: fine sandy loam

H3 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98
to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: Sandy (R020XD012CA)

Minor Components

Tujunga

Percent of map unit: 5 percent

Greenfield

Percent of map unit: 5 percent

Ramona

Percent of map unit: 5 percent

Data Source Information

Soil Survey Area: Western Riverside Area, California

Survey Area Data: Version 7, Sep 17, 2014

Western Riverside Area, California

HfD—Hanford sandy loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: hcw6
Elevation: 150 to 900 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 40 inches: fine sandy loam
H3 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A
Ecological site: Sandy alluvial (1975) (R019XD069CA)

Minor Components

Tujunga

Percent of map unit: 5 percent

Greenfield

Percent of map unit: 5 percent

Ramona

Percent of map unit: 4 percent

Riverwash

Percent of map unit: 1 percent

Landform: Channels

Data Source Information

Soil Survey Area: Western Riverside Area, California

Survey Area Data: Version 7, Sep 17, 2014



NOAA Atlas 14, Volume 6, Version 2
 Location name: Banning, California, US*
 Latitude: 33.9337°, Longitude: -116.9066°
 Elevation: 2589ft*
 * source: Google Maps



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

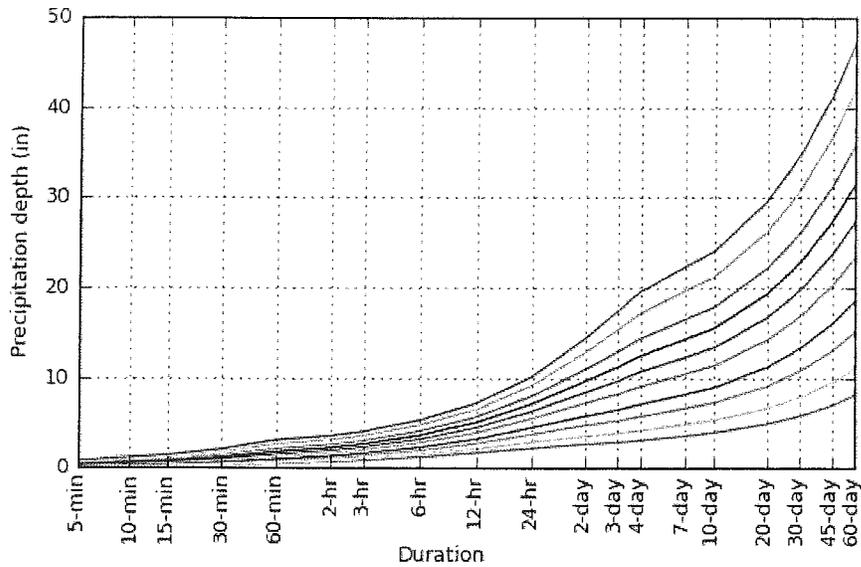
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval(years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.123 (0.102-0.149)	0.157 (0.130-0.190)	0.207 (0.172-0.252)	0.254 (0.209-0.311)	0.326 (0.259-0.414)	0.391 (0.304-0.507)	0.464 (0.352-0.618)	0.551 (0.406-0.754)	0.686 (0.485-0.980)	0.807 (0.551-1.20)
10-min	0.176 (0.147-0.214)	0.224 (0.187-0.272)	0.297 (0.246-0.361)	0.363 (0.299-0.446)	0.468 (0.372-0.594)	0.560 (0.436-0.727)	0.666 (0.505-0.886)	0.789 (0.582-1.08)	0.983 (0.695-1.41)	1.16 (0.789-1.71)
15-min	0.213 (0.178-0.258)	0.271 (0.226-0.329)	0.359 (0.298-0.437)	0.439 (0.362-0.539)	0.565 (0.450-0.718)	0.677 (0.527-0.879)	0.805 (0.611-1.07)	0.954 (0.704-1.31)	1.19 (0.840-1.70)	1.40 (0.955-2.07)
30-min	0.315 (0.263-0.382)	0.402 (0.334-0.487)	0.531 (0.441-0.646)	0.650 (0.535-0.798)	0.837 (0.665-1.06)	1.00 (0.779-1.30)	1.19 (0.904-1.59)	1.41 (1.04-1.93)	1.76 (1.24-2.51)	2.07 (1.41-3.07)
60-min	0.471 (0.392-0.571)	0.599 (0.499-0.728)	0.793 (0.658-0.965)	0.971 (0.799-1.19)	1.25 (0.993-1.59)	1.50 (1.16-1.94)	1.78 (1.35-2.37)	2.11 (1.55-2.89)	2.63 (1.86-3.75)	3.09 (2.11-4.58)
2-hr	0.675 (0.562-0.818)	0.849 (0.706-1.03)	1.10 (0.912-1.34)	1.32 (1.09-1.62)	1.65 (1.31-2.10)	1.93 (1.50-2.51)	2.24 (1.70-2.99)	2.59 (1.91-3.55)	3.11 (2.20-4.45)	3.56 (2.43-5.28)
3-hr	0.831 (0.693-1.01)	1.04 (0.867-1.26)	1.34 (1.11-1.63)	1.60 (1.31-1.96)	1.97 (1.57-2.51)	2.29 (1.78-2.97)	2.63 (2.00-3.50)	3.01 (2.22-4.12)	3.56 (2.52-5.09)	4.02 (2.75-5.96)
6-hr	1.20 (1.00-1.46)	1.51 (1.25-1.83)	1.92 (1.59-2.34)	2.28 (1.87-2.79)	2.78 (2.21-3.53)	3.19 (2.48-4.14)	3.62 (2.75-4.82)	4.09 (3.02-5.61)	4.76 (3.36-6.80)	5.30 (3.62-7.85)
12-hr	1.66 (1.38-2.01)	2.11 (1.75-2.56)	2.71 (2.25-3.30)	3.22 (2.65-3.95)	3.92 (3.12-4.98)	4.48 (3.49-5.81)	5.06 (3.84-6.73)	5.67 (4.18-7.77)	6.52 (4.61-9.32)	7.20 (4.91-10.7)
24-hr	2.18 (1.93-2.52)	2.85 (2.52-3.29)	3.73 (3.29-4.32)	4.46 (3.90-5.20)	5.48 (4.64-6.60)	6.27 (5.20-7.71)	7.09 (5.75-8.93)	7.95 (6.27-10.3)	9.14 (6.93-12.3)	10.1 (7.39-14.1)
2-day	2.64 (2.34-3.04)	3.53 (3.12-4.07)	4.74 (4.18-5.48)	5.77 (5.05-6.73)	7.23 (6.13-8.71)	8.41 (6.98-10.3)	9.66 (7.83-12.2)	11.0 (8.67-14.2)	12.9 (9.76-17.4)	14.4 (10.6-20.1)
3-day	2.84 (2.51-3.27)	3.83 (3.39-4.42)	5.23 (4.61-6.05)	6.44 (5.64-7.51)	8.20 (6.94-9.88)	9.64 (8.00-11.9)	11.2 (9.08-14.1)	12.9 (10.2-16.7)	15.4 (11.6-20.7)	17.4 (12.7-24.3)
4-day	3.07 (2.71-3.53)	4.16 (3.68-4.81)	5.72 (5.04-6.61)	7.07 (6.18-8.24)	9.04 (7.66-10.9)	10.7 (8.86-13.1)	12.4 (10.1-15.7)	14.4 (11.3-18.6)	17.2 (13.0-23.2)	19.6 (14.3-27.3)
7-day	3.56 (3.15-4.11)	4.83 (4.27-5.57)	6.61 (5.83-7.65)	8.16 (7.14-9.52)	10.4 (8.82-12.6)	12.3 (10.2-15.1)	14.3 (11.6-18.0)	16.5 (13.0-21.3)	19.6 (14.9-26.5)	22.3 (16.3-31.1)
10-day	3.90 (3.45-4.50)	5.28 (4.67-6.10)	7.22 (6.37-8.36)	8.90 (7.78-10.4)	11.3 (9.60-13.7)	13.3 (11.1-16.4)	15.5 (12.5-19.5)	17.8 (14.0-23.0)	21.2 (16.0-28.5)	24.0 (17.6-33.4)
20-day	4.88 (4.32-5.63)	6.64 (5.87-7.67)	9.09 (8.02-10.5)	11.2 (9.80-13.1)	14.2 (12.1-17.1)	16.7 (13.9-20.5)	19.3 (15.7-24.4)	22.2 (17.5-28.7)	26.3 (19.9-35.4)	29.7 (21.7-41.3)
30-day	5.79 (5.12-6.67)	7.89 (6.98-9.11)	10.8 (9.53-12.5)	13.3 (11.6-15.5)	16.9 (14.3-20.3)	19.8 (16.4-24.3)	22.9 (18.5-28.8)	26.2 (20.7-33.9)	30.9 (23.4-41.7)	34.8 (25.5-48.5)
45-day	6.95 (6.15-8.01)	9.50 (8.40-11.0)	13.0 (11.5-15.0)	16.0 (14.0-18.6)	20.2 (17.1-24.4)	23.7 (19.6-29.1)	27.3 (22.1-34.4)	31.2 (24.6-40.3)	36.7 (27.8-49.4)	41.2 (30.2-57.4)
60-day	8.09 (7.16-9.33)	11.0 (9.76-12.7)	15.1 (13.3-17.5)	18.5 (16.2-21.6)	23.4 (19.8-28.1)	27.3 (22.6-33.5)	31.4 (25.4-39.5)	35.8 (28.2-46.3)	42.0 (31.8-56.6)	47.1 (34.5-65.6)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

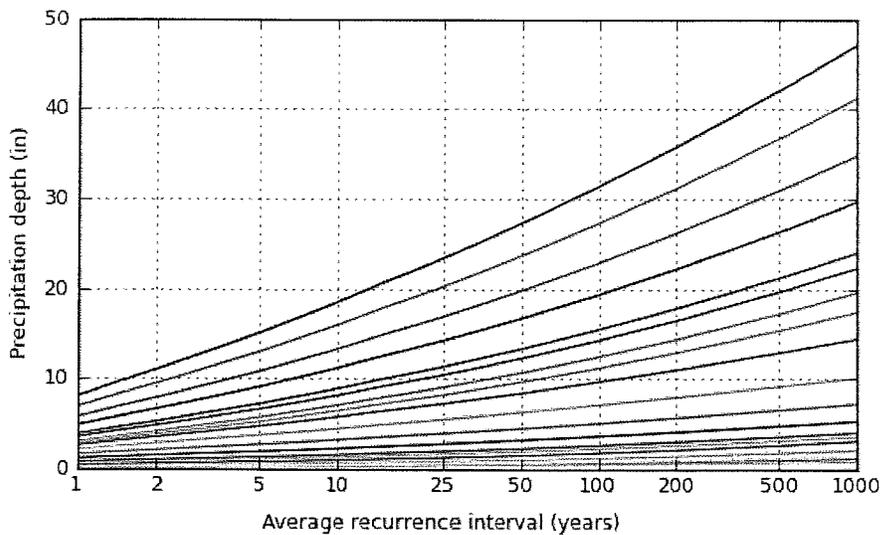
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves
 Latitude: 33.9337°, Longitude: -116.9066°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



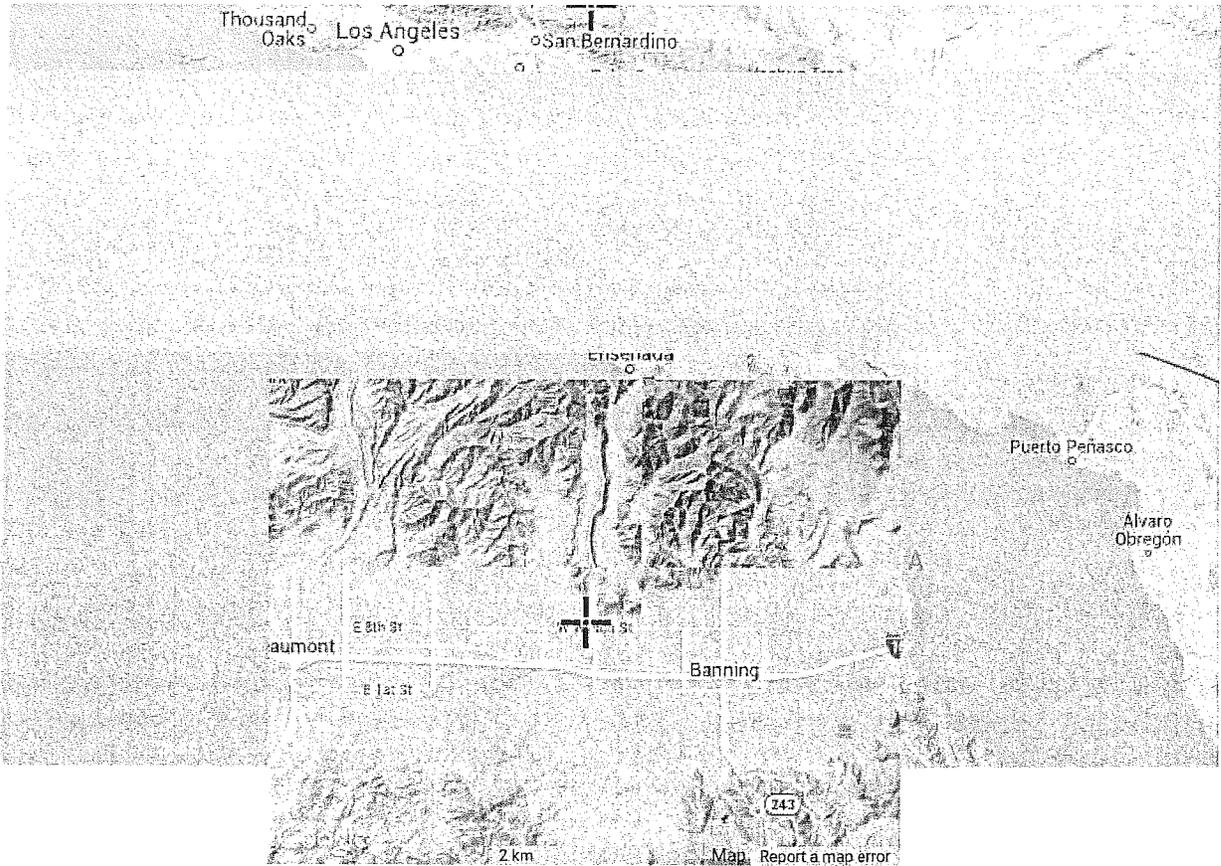
Duration
5-min
10-min
15-min
30-min
60-min
2-hr
3-hr
6-hr
12-hr
24-hr
2-day
3-day
4-day
7-day
10-da
20-da
30-da
45-da
60-da

[Back to Top](#)

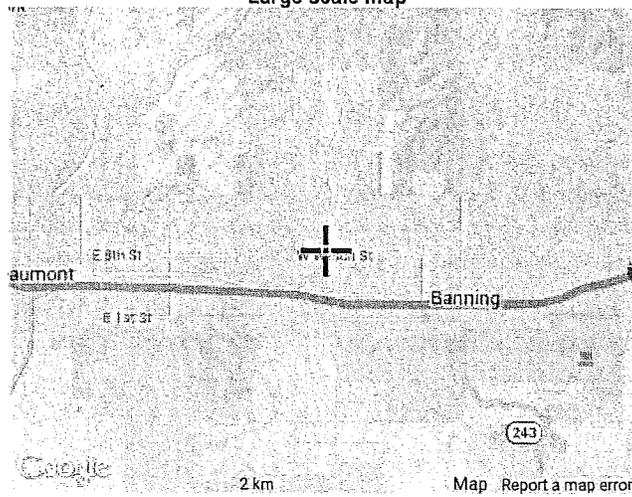
Maps & aerials

Small scale terrain

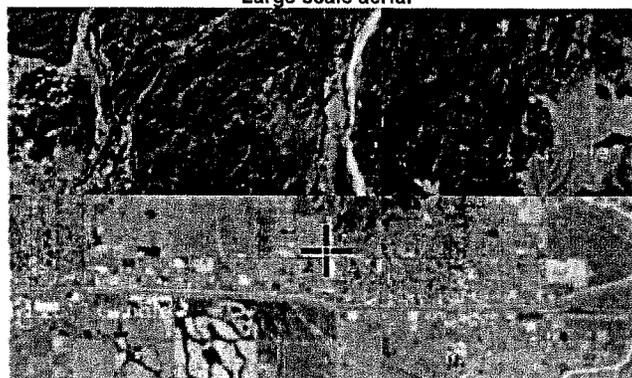




Large scale map



Large scale aerial





US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Time	3-Hour, Q100 (CFS)		
	Subarea "A"	Subarea "B"	Total
100	1.2	0.66	1.86
105	1.41	0.76	2.17
110	1.72	0.94	2.66
115	1.82	0.99	2.81
120	1.76	0.96	2.72
125	2.3	1.24	3.54
130	4.06	2.2	6.26
135	4.4	2.4	6.8
140	4.13	2.25	6.38
145	6	3.25	9.25
150	8.09	4.39	12.48
155	7.81	4.26	12.07
200	7.4	4.04	11.44
205	7.8	4.25	12.05
210	9.98	5.41	15.39
215	15.32	8.29	23.61
220	16.98	9.27	26.25
225	18.31	9.9	28.21
230	29.97	16.22	46.19
235	36.35	19.72	56.07
240	37.82	20.63	58.45
245	25.58	14.11	39.69
250	10.77	6.02	16.79
255	6.19	3.46	9.65
300	3.97	2.26	6.23
305	2.17	1.26	3.43
310	1.06	0.62	1.68

Time	24-Hour, Q100 (CFS)		
	Subarea "A"	Subarea "B"	Total
1200	1.17	0.64	1.81
1205	1.62	0.87	2.49
1210	2.62	1.42	4.04
1215	2.96	1.62	4.58
1220	3.29	1.79	5.08
1225	3.75	2.04	5.79
1230	3.95	2.15	6.1
1235	4.37	2.37	6.74
1240	5.12	2.78	7.9
1245	5.38	2.93	8.31
1250	5.69	3.1	8.79
1255	6.12	3.34	9.46
1300	6.31	3.44	9.75
1305	7.16	3.89	11.05
1310	8.85	4.81	13.66
1315	9.4	5.12	14.52
1320	9.69	5.28	14.97
1325	9.88	5.39	15.27
1330	10.02	5.46	15.48
1335	8.54	4.69	13.23
1340	5.11	2.83	7.94
1345	4.14	2.28	6.42
1350	3.72	2.05	5.77
1355	3.52	1.93	5.45
1400	3.42	1.87	5.29

Unit Hydrograph Analysis

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Study date 04/17/15 File: Tract36939Ex3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6345

Tract 36939 - Existing Condition - Subarea 1
100-Year, 3 Hour Hydrograph to determine max Q allowable

Drainage Area = 22.90(Ac.) = 0.036 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 22.90(Ac.) = 0.036 Sq. Mi.
Length along longest watercourse = 1940.00(Ft.)
Length along longest watercourse measured to centroid = 620.00(Ft.)
Length along longest watercourse = 0.367 Mi.
Length along longest watercourse measured to centroid = 0.117 Mi.
Difference in elevation = 92.00(Ft.)
Slope along watercourse = 250.3918 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.076 Hr.
Lag time = 4.58 Min.
25% of lag time = 1.15 Min.
40% of lag time = 1.83 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
22.90	1.04	23.82

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
22.90	2.63	60.23

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.040(In)
Area Averaged 100-Year Rainfall = 2.630(In)

Point rain (area averaged) = 2.630 (In)
 Areal adjustment factor = 99.99 %
 Adjusted average point rain = 2.630 (In)

Sub-Area Data:

Area (Ac.) Runoff Index Impervious %
 22.900 46.00 0.000
 Total Area Entered = 22.90 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
46.0	46.0	0.611	0.000	0.611	1.000	0.611
						Sum (F) = 0.611

Area averaged mean soil loss (F) (In/Hr) = 0.611
 Minimum soil loss rate ((In/Hr)) = 0.306
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.900

 U n i t H y d r o g r a p h
 VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	109.132	5.072
2	0.167	218.264	11.267
3	0.250	327.396	3.326
4	0.333	436.528	1.521
5	0.417	545.660	0.845
6	0.500	654.792	0.529
7	0.583	763.924	0.310
8	0.667	873.056	0.209
		Sum = 100.000	Sum= 23.079

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate (In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	1.30	0.410	(0.611)	0.369	0.041
2	0.17	1.30	0.410	(0.611)	0.369	0.041
3	0.25	1.10	0.347	(0.611)	0.312	0.035
4	0.33	1.50	0.473	(0.611)	0.426	0.047
5	0.42	1.50	0.473	(0.611)	0.426	0.047
6	0.50	1.80	0.568	(0.611)	0.511	0.057
7	0.58	1.50	0.473	(0.611)	0.426	0.047
8	0.67	1.80	0.568	(0.611)	0.511	0.057
9	0.75	1.80	0.568	(0.611)	0.511	0.057
10	0.83	1.50	0.473	(0.611)	0.426	0.047
11	0.92	1.60	0.505	(0.611)	0.454	0.050
12	1.00	1.80	0.568	(0.611)	0.511	0.057

13	1.08	2.20	0.694	0.611	(0.625)	0.083
14	1.17	2.20	0.694	0.611	(0.625)	0.083
15	1.25	2.20	0.694	0.611	(0.625)	0.083
16	1.33	2.00	0.631	(0.611)	0.568	0.063
17	1.42	2.60	0.820	0.611	(0.738)	0.209
18	1.50	2.70	0.852	0.611	(0.767)	0.241
19	1.58	2.40	0.757	0.611	(0.682)	0.146
20	1.67	2.70	0.852	0.611	(0.767)	0.241
21	1.75	3.30	1.041	0.611	(0.937)	0.430
22	1.83	3.10	0.978	0.611	(0.880)	0.367
23	1.92	2.90	0.915	0.611	(0.824)	0.304
24	2.00	3.00	0.947	0.611	(0.852)	0.336
25	2.08	3.10	0.978	0.611	(0.880)	0.367
26	2.17	4.20	1.325	0.611	(1.193)	0.714
27	2.25	5.00	1.578	0.611	(1.420)	0.967
28	2.33	3.50	1.104	0.611	(0.994)	0.493
29	2.42	6.80	2.146	0.611	(1.931)	1.535
30	2.50	7.30	2.304	0.611	(2.073)	1.692
31	2.58	8.20	2.588	0.611	(2.329)	1.976
32	2.67	5.90	1.862	0.611	(1.676)	1.251
33	2.75	2.00	0.631	(0.611)	0.568	0.063
34	2.83	1.80	0.568	(0.611)	0.511	0.057
35	2.92	1.80	0.568	(0.611)	0.511	0.057
36	3.00	0.60	0.189	(0.611)	0.170	0.019

(Loss Rate Not Used)

Sum = 100.0

Sum = 12.4

Flood volume = Effective rainfall 1.03(In)
times area 22.9(Ac.)/[In]/[Ft.]] = 2.0(Ac.Ft)
Total soil loss = 1.60(In)
Total soil loss = 3.053(Ac.Ft)
Total rainfall = 2.63(In)
Flood volume = 85627.3 Cubic Feet
Total soil loss = 132974.9 Cubic Feet

Peak flow rate of this hydrograph = 37.821(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time (h+m)	Volume Ac.Ft	Q(CFS)	0	10.0	20.0	30.0	40.0
0+ 5	0.0014	0.21	Q				
0+10	0.0061	0.67	Q				
0+15	0.0114	0.78	Q				
0+20	0.0171	0.83	Q				
0+25	0.0239	0.99	Q				
0+30	0.0314	1.09	VQ				
0+35	0.0395	1.17	VQ				
0+40	0.0475	1.16	VQ				
0+45	0.0561	1.26	Q				
0+50	0.0647	1.24	Q				
0+55	0.0727	1.16	Q				
1+ 0	0.0809	1.20	Q				
1+ 5	0.0906	1.41	Q				
1+10	0.1025	1.72	QV				
1+15	0.1150	1.82	QV				
1+20	0.1271	1.76	QV				
1+25	0.1430	2.30	Q				
1+30	0.1709	4.06	VQ				
1+35	0.2012	4.40	Q				
1+40	0.2297	4.13	Q				
1+45	0.2710	6.00	VQ				
1+50	0.3267	8.09	V Q				
1+55	0.3805	7.81	Q				
2+ 0	0.4315	7.40	QV				
2+ 5	0.4852	7.80	Q V				
2+10	0.5540	9.98	Q V				
2+15	0.6595	15.32	V Q				
2+20	0.7765	16.98	VQ				
2+25	0.9026	18.31	Q				
2+30	1.1090	29.97	V				
2+35	1.3593	36.35	V				
2+40	1.6198	37.82	V				
2+45	1.7959	25.58	Q				
2+50	1.8701	10.77	Q				
2+55	1.9127	6.19	Q				
3+ 0	1.9400	3.97	Q				
3+ 5	1.9550	2.17	Q				
3+10	1.9621	1.03	Q				
3+15	1.9648	0.39	Q				
3+20	1.9653	0.08	Q				
3+25	1.9656	0.04	Q				
3+30	1.9657	0.02	Q				
3+35	1.9657	0.00	Q				

Combine Hydrograph above with hydrograph for Subarea 2 (following) to determine maximum allowable discharge.

n i t H y d r o g r a p h A n a l y s i s

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Study date 04/17/15 File: TR36939exb3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6345

Tract 36939 - Existing Condition - Subarea 2
100-Year, 3 Hour Hydrograph to determine max Q allowable

Drainage Area = 12.50 (Ac.) = 0.020 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 12.50 (Ac.) = 0.020 Sq. Mi.
Length along longest watercourse = 1430.00 (Ft.)
Length along longest watercourse measured to centroid = 902.00 (Ft.)
Length along longest watercourse = 0.271 Mi.
Length along longest watercourse measured to centroid = 0.171 Mi.
Difference in elevation = 68.00 (Ft.)
Slope along watercourse = 251.0769 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.078 Hr.
Lag time = 4.70 Min.
25% of lag time = 1.18 Min.
40% of lag time = 1.88 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00 (CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]
12.50	1.04	13.00

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]
12.50	2.63	32.88

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.040 (In)
Area Averaged 100-Year Rainfall = 2.630 (In)

Point rain (area averaged) = 2.630(In)
 Areal adjustment factor = 99.99 %
 Adjusted average point rain = 2.630(In)

Sub-Area Data:

Area(Ac.) Runoff Index Impervious %
 12.500 46.00 0.000
 Total Area Entered = 12.50(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
46.0	46.0	0.611	0.000	0.611	1.000	0.611
						Sum (F) = 0.611

Area averaged mean soil loss (F) (In/Hr) = 0.611

Minimum soil loss rate ((In/Hr)) = 0.306

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.900

Unit Hydrograph
 VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	106.327	21.132
2	0.167	212.655	48.747
3	0.250	318.982	14.754
4	0.333	425.310	6.733
5	0.417	531.637	3.745
6	0.500	637.964	2.382
7	0.583	744.292	1.416
8	0.667	850.619	1.091
		Sum = 100.000	Sum= 12.598

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)	
			Max	Low		
1	0.08	1.30	0.410	(0.611)	0.369	0.041
2	0.17	1.30	0.410	(0.611)	0.369	0.041
3	0.25	1.10	0.347	(0.611)	0.312	0.035
4	0.33	1.50	0.473	(0.611)	0.426	0.047
5	0.42	1.50	0.473	(0.611)	0.426	0.047
6	0.50	1.80	0.568	(0.611)	0.511	0.057
7	0.58	1.50	0.473	(0.611)	0.426	0.047
8	0.67	1.80	0.568	(0.611)	0.511	0.057
9	0.75	1.80	0.568	(0.611)	0.511	0.057
10	0.83	1.50	0.473	(0.611)	0.426	0.047
11	0.92	1.60	0.505	(0.611)	0.454	0.050

12	1.00	1.80	0.568	(0.611)	0.511	0.057
13	1.08	2.20	0.694	0.611	(0.625)	0.083
14	1.17	2.20	0.694	0.611	(0.625)	0.083
15	1.25	2.20	0.694	0.611	(0.625)	0.083
16	1.33	2.00	0.631	(0.611)	0.568	0.063
17	1.42	2.60	0.821	0.611	(0.738)	0.209
18	1.50	2.70	0.852	0.611	(0.767)	0.241
19	1.58	2.40	0.757	0.611	(0.682)	0.146
20	1.67	2.70	0.852	0.611	(0.767)	0.241
21	1.75	3.30	1.041	0.611	(0.937)	0.430
22	1.83	3.10	0.978	0.611	(0.880)	0.367
23	1.92	2.90	0.915	0.611	(0.824)	0.304
24	2.00	3.00	0.947	0.611	(0.852)	0.336
25	2.08	3.10	0.978	0.611	(0.880)	0.367
26	2.17	4.20	1.325	0.611	(1.193)	0.714
27	2.25	5.00	1.578	0.611	(1.420)	0.967
28	2.33	3.50	1.105	0.611	(0.994)	0.493
29	2.42	6.80	2.146	0.611	(1.931)	1.535
30	2.50	7.30	2.304	0.611	(2.073)	1.693
31	2.58	8.20	2.588	0.611	(2.329)	1.977
32	2.67	5.90	1.862	0.611	(1.676)	1.251
33	2.75	2.00	0.631	(0.611)	0.568	0.063
34	2.83	1.80	0.568	(0.611)	0.511	0.057
35	2.92	1.80	0.568	(0.611)	0.511	0.057
36	3.00	0.60	0.189	(0.611)	0.170	0.019

(Loss Rate Not Used)

Sum = 100.0

Sum = 12.4

Flood volume = Effective rainfall 1.03(In)
times area 12.5(Ac.)/[(In)/(Ft.)] = 1.1(Ac.Ft)
Total soil loss = 1.60(In)
Total soil loss = 1.666(Ac.Ft)
Total rainfall = 2.63(In)
Flood volume = 46743.9 Cubic Feet
Total soil loss = 72585.8 Cubic Feet

Peak flow rate of this hydrograph = 20.627(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time (h+m)	Volume Ac.Ft	Q (CFS)	0	7.5	15.0	22.5	30.0
0+ 5	0.0008	0.11	Q				
0+10	0.0032	0.36	Q				
0+15	0.0061	0.42	Q				
0+20	0.0092	0.45	Q				
0+25	0.0129	0.54	Q				
0+30	0.0170	0.59	Q				
0+35	0.0214	0.64	Q				
0+40	0.0258	0.63	Q				
0+45	0.0305	0.68	QV				
0+50	0.0351	0.68	QV				
0+55	0.0395	0.63	QV				
1+ 0	0.0440	0.66	QV				
1+ 5	0.0493	0.76	Q				
1+10	0.0557	0.94	QV				
1+15	0.0626	0.99	QV				
1+20	0.0692	0.96	QV				
1+25	0.0777	1.24	QV				
1+30	0.0929	2.20	QV				
1+35	0.1094	2.40	QV				
1+40	0.1249	2.25	Q V				
1+45	0.1472	3.25	QV				
1+50	0.1775	4.39	QV				
1+55	0.2068	4.26	Q V				
2+ 0	0.2346	4.04	Q V				
2+ 5	0.2639	4.25	Q V				
2+10	0.3011	5.41	Q V				
2+15	0.3582	8.29	Q V				
2+20	0.4220	9.27	Q V				
2+25	0.4902	9.90	Q V				
2+30	0.6020	16.22	QV				
2+35	0.7378	19.72	QV				
2+40	0.8798	20.63	Q			V	
2+45	0.9770	14.11	Q			V	
2+50	1.0185	6.02	Q			V	
2+55	1.0423	3.46	Q			V	
3+ 0	1.0579	2.26	Q			V	
3+ 5	1.0666	1.26	Q			V	
3+10	1.0709	0.62	Q			V	
3+15	1.0725	0.24	Q			V	
3+20	1.0728	0.04	Q			V	
3+25	1.0730	0.02	Q			V	
3+30	1.0731	0.01	Q			V	
3+35	1.0731	0.00	Q			V	

Combine Hydrograph above with hydrograph for Subarea 1 to determine maximum allowable discharge

Unit Hydrograph Analysis

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6345

Tract 36939 - Developed Condition - Subarea 1
100-Year, 3-Hour Hydrograph for Required Retention Volume

Drainage Area = 24.78 (Ac.) = 0.039 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 24.78 (Ac.) = 0.039 Sq.

Mi.

Length along longest watercourse = 2215.00 (Ft.)
Length along longest watercourse measured to centroid = 603.00 (Ft.)
Length along longest watercourse = 0.420 Mi.
Length along longest watercourse measured to centroid = 0.114 Mi.
Difference in elevation = 92.00 (Ft.)
Slope along watercourse = 219.3047 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.068 Hr.
Lag time = 4.07 Min.
25% of lag time = 1.02 Min.
40% of lag time = 1.63 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00 (CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]
24.78	1.04	25.77

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]
24.78	2.63	65.17

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.040 (In)
Area Averaged 100-Year Rainfall = 2.630 (In)

Point rain (area averaged) = 2.630(In)
 Areal adjustment factor = 99.99 %
 Adjusted average point rain = 2.630(In)

Sub-Area Data:

Area(Ac.) Runoff Index Impervious %
 24.780 46.00 0.450
 Total Area Entered = 24.78(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
46.0	46.0	0.611	0.450	0.364	1.000	0.364
						Sum (F) = 0.364

Area averaged mean soil loss (F) (In/Hr) = 0.364
 Minimum soil loss rate ((In/Hr)) = 0.182
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.540

Unit Hydrograph
 VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	122.717	6.488
2	0.167	245.435	12.144
3	0.250	368.152	3.265
4	0.333	490.869	1.473
5	0.417	613.587	0.823
6	0.500	736.304	0.462
7	0.583	859.021	0.318
		Sum = 100.000	Sum= 24.974

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	1.30	0.410	(0.364) 0.222	0.189
2	0.17	1.30	0.410	(0.364) 0.222	0.189
3	0.25	1.10	0.347	(0.364) 0.187	0.160
4	0.33	1.50	0.473	(0.364) 0.256	0.218
5	0.42	1.50	0.473	(0.364) 0.256	0.218
6	0.50	1.80	0.568	(0.364) 0.307	0.261
7	0.58	1.50	0.473	(0.364) 0.256	0.218
8	0.67	1.80	0.568	(0.364) 0.307	0.261
9	0.75	1.80	0.568	(0.364) 0.307	0.261
10	0.83	1.50	0.473	(0.364) 0.256	0.218
11	0.92	1.60	0.505	(0.364) 0.273	0.232
12	1.00	1.80	0.568	(0.364) 0.307	0.261
13	1.08	2.20	0.694	0.364 (0.375)	0.331

14	1.17	2.20	0.694	0.364	(0.375)	0.331
15	1.25	2.20	0.694	0.364	(0.375)	0.331
16	1.33	2.00	0.631	(0.364)	0.341	0.290
17	1.42	2.60	0.820	0.364	(0.443)	0.457
18	1.50	2.70	0.852	0.364	(0.460)	0.488
19	1.58	2.40	0.757	0.364	(0.409)	0.394
20	1.67	2.70	0.852	0.364	(0.460)	0.488
21	1.75	3.30	1.041	0.364	(0.562)	0.678
22	1.83	3.10	0.978	0.364	(0.528)	0.615
23	1.92	2.90	0.915	0.364	(0.494)	0.551
24	2.00	3.00	0.947	0.364	(0.511)	0.583
25	2.08	3.10	0.978	0.364	(0.528)	0.615
26	2.17	4.20	1.325	0.364	(0.716)	0.962
27	2.25	5.00	1.578	0.364	(0.852)	1.214
28	2.33	3.50	1.104	0.364	(0.596)	0.741
29	2.42	6.80	2.146	0.364	(1.159)	1.782
30	2.50	7.30	2.304	0.364	(1.244)	1.940
31	2.58	8.20	2.588	0.364	(1.397)	2.224
32	2.67	5.90	1.862	0.364	(1.005)	1.498
33	2.75	2.00	0.631	(0.364)	0.341	0.290
34	2.83	1.80	0.568	(0.364)	0.307	0.261
35	2.92	1.80	0.568	(0.364)	0.307	0.261
36	3.00	0.60	0.189	(0.364)	0.102	0.087

(Loss Rate Not Used)

Sum = 100.0

Sum = 20.1

Flood volume = Effective rainfall 1.67(In)
times area 24.8(Ac.)/[(In)/(Ft.)] = 3.5(Ac.Ft)
Total soil loss = 0.95(In)
Total soil loss = 1.972(Ac.Ft)
Total rainfall = 2.63(In)
Flood volume = 150647.1 Cubic Feet
Total soil loss = 85899.4 Cubic Feet

Peak flow rate of this hydrograph = 47.189(CFS)

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3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	12.5	25.0	37.5	50.0
0+ 5	0.0084	1.23	Q					
0+10	0.0327	3.52	V Q					
0+15	0.0598	3.95	V Q					
0+20	0.0891	4.25	V Q					
0+25	0.1236	5.01	V Q					
0+30	0.1617	5.53	V Q					
0+35	0.2024	5.90	V Q					
0+40	0.2425	5.83	V Q					
0+45	0.2859	6.30	V Q					
0+50	0.3282	6.15	VQ					
0+55	0.3679	5.76	Q					
1+ 0	0.4093	6.01	Q					
1+ 5	0.4562	6.81	Q					
1+10	0.5095	7.74	VQ					
1+15	0.5646	8.00	Q					
1+20	0.6187	7.86	QV					
1+25	0.6775	8.53	QV					
1+30	0.7509	10.66	Q					
1+35	0.8263	10.94	QV					
1+40	0.9001	10.72	Q V					
1+45	0.9893	12.95	QV					
1+50	1.0933	15.11	Q					
1+55	1.1944	14.68	Q V					
2+ 0	1.2924	14.23	Q V					
2+ 5	1.3936	14.69	Q V					
2+10	1.5135	17.40	Q V					
2+15	1.6745	23.39	QV					
2+20	1.8435	24.54	Q V					
2+25	2.0288	26.91	Q V					
2+30	2.3024	39.72	V				Q	
2+35	2.6231	46.56	V				V	Q
2+40	2.9481	47.19	V				V	Q
2+45	3.1713	32.41	Q				V	V
2+50	3.2818	16.05	Q				V	V
2+55	3.3598	11.32	Q				V	V
3+ 0	3.4142	7.90	Q				V	V
3+ 5	3.4413	3.94	Q				V	V
3+10	3.4516	1.50	Q				V	V
3+15	3.4554	0.56	Q				V	V
3+20	3.4573	0.28	Q				V	V
3+25	3.4582	0.12	Q				V	V
3+30	3.4584	0.03	Q				V	V

Unit Hydrograph Analysis

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6345

Tract 36939 - Developed Condition - Subarea 2
100-Year, 3 Hour Hydrograph for Required Retention Volume

Drainage Area = 9.78 (Ac.) = 0.015 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.78 (Ac.) = 0.015 Sq. Mi.
Length along longest watercourse = 1052.00 (Ft.)
Length along longest watercourse measured to centroid = 567.00 (Ft.)
Length along longest watercourse = 0.199 Mi.
Length along longest watercourse measured to centroid = 0.107 Mi.
Difference in elevation = 68.00 (Ft.)
Slope along watercourse = 341.2928 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.046 Hr.
Lag time = 2.76 Min.
25% of lag time = 0.69 Min.
40% of lag time = 1.10 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00 (CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]
9.78	1.04	10.17

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]
9.78	2.63	25.72

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.040 (In)
Area Averaged 100-Year Rainfall = 2.630 (In)
Point rain (area averaged) = 2.630 (In)

Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.630(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
9.780	46.00	0.300
Total Area Entered = 9.78(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
46.0	46.0	0.611	0.300	0.446	1.000	0.446
						Sum (F) = 0.446

Area averaged mean soil loss (F) (In/Hr) = 0.446
 Minimum soil loss rate ((In/Hr)) = 0.223
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.660

 U n i t H y d r o g r a p h
 VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	181.316	39.978
2	0.167	362.632	44.691
3	0.250	543.948	9.598
4	0.333	725.264	3.919
5	0.417	906.579	1.813
		Sum = 100.000	Sum= 9.856

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max Low	Effective (In/Hr)
1	0.08	1.30	(0.446) 0.271	0.139
2	0.17	1.30	(0.446) 0.271	0.139
3	0.25	1.10	(0.446) 0.229	0.118
4	0.33	1.50	(0.446) 0.312	0.161
5	0.42	1.50	(0.446) 0.312	0.161
6	0.50	1.80	(0.446) 0.375	0.193
7	0.58	1.50	(0.446) 0.312	0.161
8	0.67	1.80	(0.446) 0.375	0.193
9	0.75	1.80	(0.446) 0.375	0.193
10	0.83	1.50	(0.446) 0.312	0.161
11	0.92	1.60	(0.446) 0.333	0.172
12	1.00	1.80	(0.446) 0.375	0.193
13	1.08	2.20	0.446 (0.458)	0.248
14	1.17	2.20	0.446 (0.458)	0.248
15	1.25	2.20	0.446 (0.458)	0.248
16	1.33	2.00	(0.446) 0.417	0.215

17	1.42	2.60	0.821	0.446	(0.542)	0.374
18	1.50	2.70	0.852	0.446	(0.562)	0.406
19	1.58	2.40	0.757	0.446	(0.500)	0.311
20	1.67	2.70	0.852	0.446	(0.562)	0.406
21	1.75	3.30	1.041	0.446	(0.687)	0.595
22	1.83	3.10	0.978	0.446	(0.646)	0.532
23	1.92	2.90	0.915	0.446	(0.604)	0.469
24	2.00	3.00	0.947	0.446	(0.625)	0.501
25	2.08	3.10	0.978	0.446	(0.646)	0.532
26	2.17	4.20	1.325	0.446	(0.875)	0.879
27	2.25	5.00	1.578	0.446	(1.041)	1.132
28	2.33	3.50	1.105	0.446	(0.729)	0.658
29	2.42	6.80	2.146	0.446	(1.416)	1.700
30	2.50	7.30	2.304	0.446	(1.520)	1.858
31	2.58	8.20	2.588	0.446	(1.708)	2.142
32	2.67	5.90	1.862	0.446	(1.229)	1.416
33	2.75	2.00	0.631	(0.446)	0.417	0.215
34	2.83	1.80	0.568	(0.446)	0.375	0.193
35	2.92	1.80	0.568	(0.446)	0.375	0.193
36	3.00	0.60	0.189	(0.446)	0.125	0.064

(Loss Rate Not Used)

Sum = 100.0

Sum = 17.5

Flood volume = Effective rainfall 1.46(In)
times area 9.8(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
Total soil loss = 1.17(In)
Total soil loss = 0.953(Ac.Ft)
Total rainfall = 2.63(In)
Flood volume = 51832.2 Cubic Feet
Total soil loss = 41532.5 Cubic Feet

Peak flow rate of this hydrograph = 18.696(CFS)

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3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0038	0.55	VQ				
0+10	0.0118	1.16	V Q				
0+15	0.0202	1.21	V Q				
0+20	0.0294	1.34	V Q				
0+25	0.0400	1.53	V Q				
0+30	0.0516	1.69	V Q				
0+35	0.0635	1.72	VQ				
0+40	0.0755	1.74	VQ				
0+45	0.0884	1.87	VQ				
0+50	0.1005	1.77	Q				
0+55	0.1120	1.67	Q				
1+ 0	0.1243	1.78	QV				
1+ 5	0.1387	2.09	Q				
1+10	0.1549	2.35	QV				
1+15	0.1715	2.41	QV				
1+20	0.1873	2.30	Q V				
1+25	0.2066	2.80	QV				
1+30	0.2314	3.59	Q				
1+35	0.2554	3.50	Q V				
1+40	0.2798	3.54	Q V				
1+45	0.3119	4.65	QV				
1+50	0.3484	5.30	QV				
1+55	0.3826	4.97	Q V				
2+ 0	0.4160	4.85	Q V				
2+ 5	0.4508	5.06	Q	V			
2+10	0.4960	6.56	Q	V			
2+15	0.5588	9.12	Q	Q			
2+20	0.6188	8.71	Q	V			
2+25	0.6953	11.11	QV				
2+30	0.8057	16.03			V	Q	
2+35	0.9345	18.70				V	Q
2+40	1.0554	17.55				Q	V
2+45	1.1252	10.13			Q		V
2+50	1.1542	4.21	Q				V
2+55	1.1731	2.75	Q				V
3+ 0	1.1843	1.62	Q				V
3+ 5	1.1882	0.58	Q				V
3+10	1.1894	0.17	Q				V
3+15	1.1898	0.06	Q				V
3+20	1.1899	0.01	Q				V

Appendix D

Educational Materials

Appendix E

Soils Report

Appendix F

Structural BMP and/or Retention Facility Sizing Calculations
and Design Details

Appendix G

AGREEMENTS – CC&Rs, COVENANT AND AGREEMENTS, BMP
MAINTENANCE AGREEMENTS AND/OR OTHER
MECHANISMS FOR ENSURING ONGOING OPERATION,
MAINTENANCE, FUNDING AND TRANSFER OF
REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP

Appendix H

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT – SUMMARY OF SITE REMEDATION CONDUCTED AND USE RESTRICTIONS

Appendix I

PROJECT-SPECIFIC WQMP SUMMARY DATA FORM

Project-Specific WQMP Summary Data Form

Applicant Information	
Name and Title	Mr. Peter Pitassi, AIA, LEED AP, Senior Vice President
Company	Banning Wilson 97, LLC
Phone	909-481-1150
Email	ppitassi@diversifiedpacific.com
Project Information	
Project Name <small>(as shown on project application/project-specific WQMP)</small>	Tentative Tract 36939
Street Address	N/W Corner Wilson Street and Sunrise Avenue
Nearest Cross Streets	Wilson / Sunrise
Municipality <small>(City or Unincorporated County)</small>	City of Banning
Zip Code	92220
Tract Number(s) and/or Assessor Parcel Number(s)	Tentative Tract 36939
Other <small>(other information to help identify location of project)</small>	
Indicate type of project.	Priority Development Projects (Use an "X" in cell preceding project type):
	<input type="checkbox"/> SF hillside residence; impervious area \geq 10,000 sq. ft.; Slope \geq 25%
	<input type="checkbox"/> SF hillside residence; impervious area \geq 10,000 sq. ft.; Slope \geq 10% & erosive soils
	<input type="checkbox"/> Commercial or Industrial \geq 100,000 sq. ft.
	<input type="checkbox"/> Automotive repair shop
	<input type="checkbox"/> Retail Gasoline Outlet disturbing > 5,000 sq. ft.
	<input type="checkbox"/> Restaurant disturbing > 5,000 sq. ft.
	<input checked="" type="checkbox"/> Home subdivision \geq 10 housing units
	<input type="checkbox"/> Parking lot \geq 5,000 sq. ft. or \geq 25 parking spaces
Date Project-Specific WQMP Submitted	April 27, 2015 (Preliminary WQMP)
Size of Project Area (nearest 0.1 acre)	34.4 Acres
Will the project replace more than 50% of the impervious surfaces on an existing developed site?	No
Project Area managed with LID/Site Design BMPs (nearest 0.1 acre)	34.4 Acres
Are Treatment Control BMPs required?	No
Is the project subject to onsite retention by ordinance or policy?	Yes
Did the project meet the 100% LID/Site Design Measurable Goal?	Yes
Name of the entity that will implement, operate, and maintain the post-construction BMPs	TBD. Possibly HOA or LMD
Contact Name	Robert Otte
Street or Mailing Address	575 E. Carreon Drive
City	Colton
Zip Code	92324
Phone	909-370-0911
Space Below for Use by City/County Staff Only	
Preceding Information Verified by <small>(consistent with information in project-specific WQMP)</small>	Name: Date:
Date Project-Specific WQMP Approved:	
Data Entered by	Name: Date:
Other Comments	