

AZORES SUBDIVISION (P14-030)

INITIAL STUDY CHECKLIST FOR ANTICIPATED SUBSEQUENT PROJECTS UNDER THE 2035 GENERAL PLAN MASTER EIR

This Initial Study has been prepared by the City of Sacramento, Community Development Department, 300 Richards Boulevard, Third Floor, Sacramento, CA 95811, pursuant to the California Environmental Quality Act (Public Resources Code Sections 21000 et seq.), the CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations), and the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento.

ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following sections:

SECTION I – BACKGROUND: Provides summary background information about the project name, location, sponsor, and the date this Initial Study was completed.

SECTION II – PROJECT DESCRIPTION: Includes a detailed description of the proposed project.

SECTION III – ENVIRONMENTAL CHECKLIST AND DISCUSSION: Reviews the proposed project and states whether the project would have additional significant environmental effects (project-specific effects) that were not evaluated in the Master EIR for the 2035 General Plan.

SECTION IV – ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: Identifies which environmental factors were determined to have additional potentially significant environmental effects.

SECTION V – DETERMINATION: States whether environmental effects associated with development of the proposed project are significant and what, if any, added environmental documentation may be required.

REFERENCES CITED: Identifies source materials that have been consulted in the preparation of the Initial Study.

SECTION I – BACKGROUND

Project Name and File Number: Azores Subdivision (P14-030)

Project Location: 7446 Pocket Road

Project Applicant: B&B Homes
Contact: Katherine Bardis
10630 Mather Boulevard
Mather, CA 95655
(916) 313-3120

Project Planner: Arwen Wacht, Associate Planner
AWacht@cityofsacramento.org
(916) 808-1964

Environmental Planner: Scott Johnson, Associate Planner
SRJohnson@cityofsacramento.org
(916) 808-5842

Date Initial Study Completed: October 21, 2015

This Initial Study was prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 15000 et seq.). The City of Sacramento is the lead agency.

The City of Sacramento Community Development Department has reviewed the proposed project and on the basis of the whole record before it, has determined that the proposed project is an anticipated subsequent project identified and described in the 2035 General Plan Master EIR and is consistent with the land use designation and the permissible densities and intensities of use for the project site as set forth in the 2035 General Plan. See CEQA Guidelines Section 15176(b) and (d).

The City has prepared the attached Initial Study to (1) review the discussions of cumulative impacts, growth-inducing impacts, and irreversible significant effects in the 2035 General Plan Master EIR to determine their adequacy for the project (see CEQA Guidelines Section 15178(b),(c)); and (2) identify any potential new or additional project-specific significant environmental effects that were not analyzed in the Master EIR and any mitigation measures or alternatives that may avoid or mitigate the identified effects, if any, to a level of insignificance.

As part of the Master EIR process, the City is required to incorporate all feasible mitigation measures or feasible alternatives appropriate to the project as set forth in the Master EIR (CEQA Guidelines Section 15177(d)). The policies that are identified in the Master EIR to reduce impacts associated with buildout of the 2035 General Plan are set forth in the applicable technical sections below.

This analysis incorporates by reference the general discussion portions of the 2035 General Plan Master EIR (CEQA Guidelines Section 15150(a)). The Master EIR is available for public review at the City of Sacramento, Community Development Department, 300 Richards Boulevard, Third Floor, Sacramento, CA 95811, and on the City's website at:

<http://portal.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>.

Based on the findings of the Initial Study, the City determined that potentially significant impacts to sensitive archeological resources could result from implementation of the project. Therefore, a focused EIR will be prepared to analyze potential cultural resource impacts. The City of Sacramento is soliciting the views of interested persons and agencies on the content of the environmental impact report and welcomes public input during the review period, which runs from Wednesday, October 21, 2015, to Friday, November 20, 2015. Because of the time limits mandated by state law, your response must be sent at the earliest possible date, but no later than the 30-day review period ending November 20, 2015.

Please send written responses to:

Scott Johnson
Community Development Department
City of Sacramento
300 Richards Blvd., Third Floor
Sacramento, CA 95811
Direct Line: (916) 808-5842
SRJohnson@cityofsacramento.org

SECTION II – PROJECT DESCRIPTION

Introduction

The City of Sacramento (City) is processing an application for the Azores Subdivision Project (proposed project; project), which requests entitlements for a Rezone and a Tentative Subdivision Map.

Project Location and Setting

The project site is located at 7446 Pocket Road in an area of Sacramento referred to as the “Pocket” (see **Figure 1** for regional location and **Figure 2** for project location) The site is on the west side of Pocket Road across from Nasca Way and immediately east of the Sacramento River and an associated levee. North of the project site is a single-family residential neighborhood situated on a cul-de-sac similar to that proposed by the project. South of the site is a private elementary school facility, which is currently vacant. Additional single-family residences fronting Pocket Road are located east of the site.

The ±3.46-acre project site is undeveloped and composed of relatively flat terrain situated at an elevation of approximately 15 feet above mean sea level and sloping gently from the adjacent Sacramento River levee eastward. The site is vegetated with grasses and scattered trees. There is an existing concrete block wall along the site’s southern boundary developed as part of the adjacent (vacant) school facility.

Project Description

The project proposes a Rezone to change the zoning of the project site from its current designation of A (Agriculture Zone) to R-1 (Standard Single-Family Zone). The proposed Tentative Subdivision Map (see **Figure 3**) would divide the site into seven single-family residential lots for future development and a 0.44-acre open space parcel. The project applicant proposes the use of raised foundations or post-tension mat slab foundations for the homes to reduce depth of ground disturbance required for home construction and trenching for utilities.

Site Access, Parking, and Circulation

The project site would be accessed from Pocket Road, which is a four-lane divided roadway in the vicinity of the project site. A 50-foot left turn pocket would be created on northbound Pocket Road to provide access to the site. The proposed residential lots would be situated on either side of a proposed residential roadway ending in a cul-de-sac. At the terminus of the cul-de-sac, a 20-foot-wide emergency levee access easement is proposed connecting to an existing levee easement that runs parallel to the levee. This existing easement would be extended an additional 20 feet onto the project site (see **Figure 3**).

Utilities

The project would connect to existing water, sewer, and drainage infrastructure located within Pocket Road. The project would connect to an existing 6-inch sewer main and an existing 12-inch water main immediately east of the site and an existing 12-inch storm drain approximately 175 feet to the south.

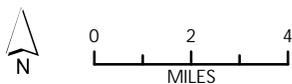
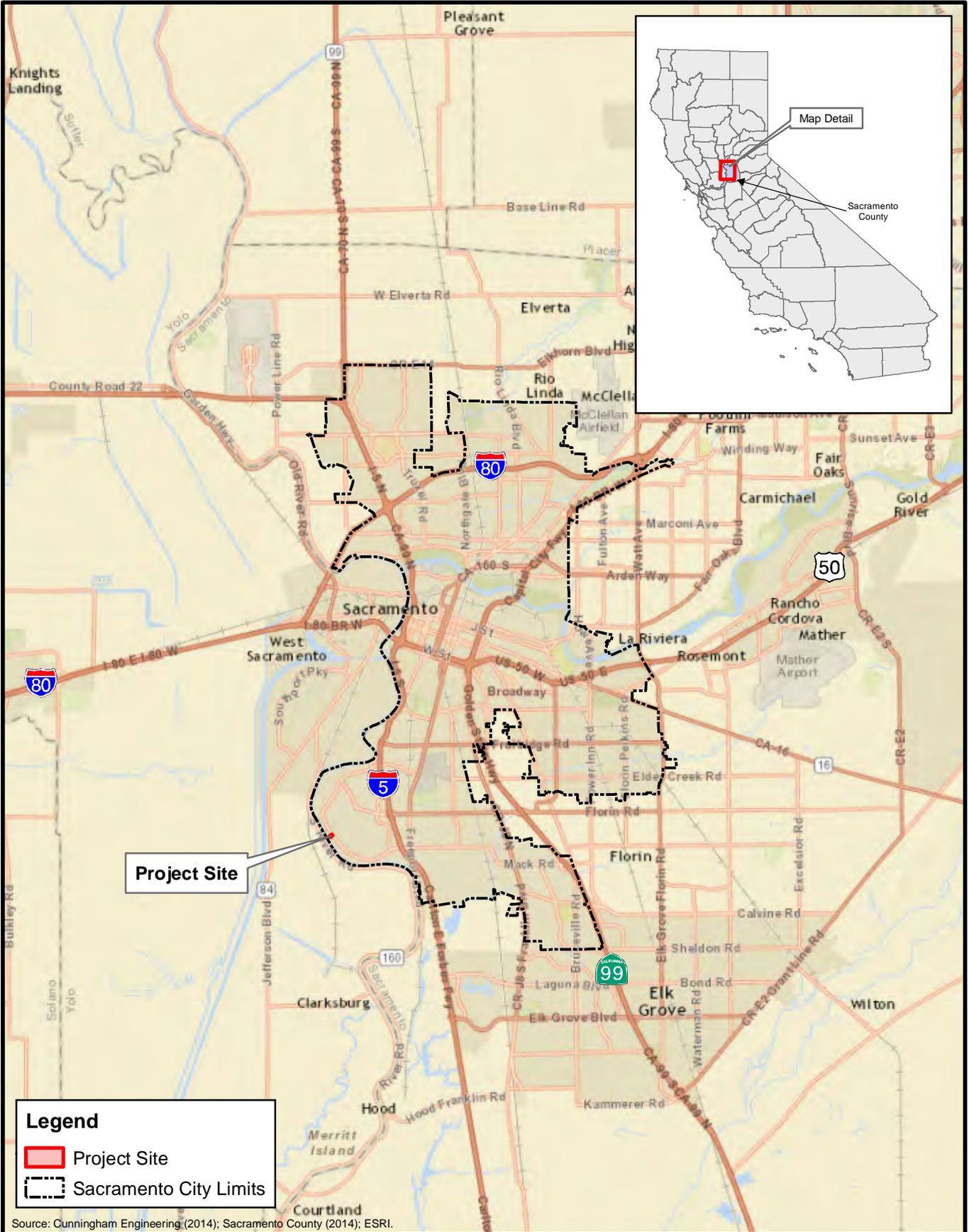
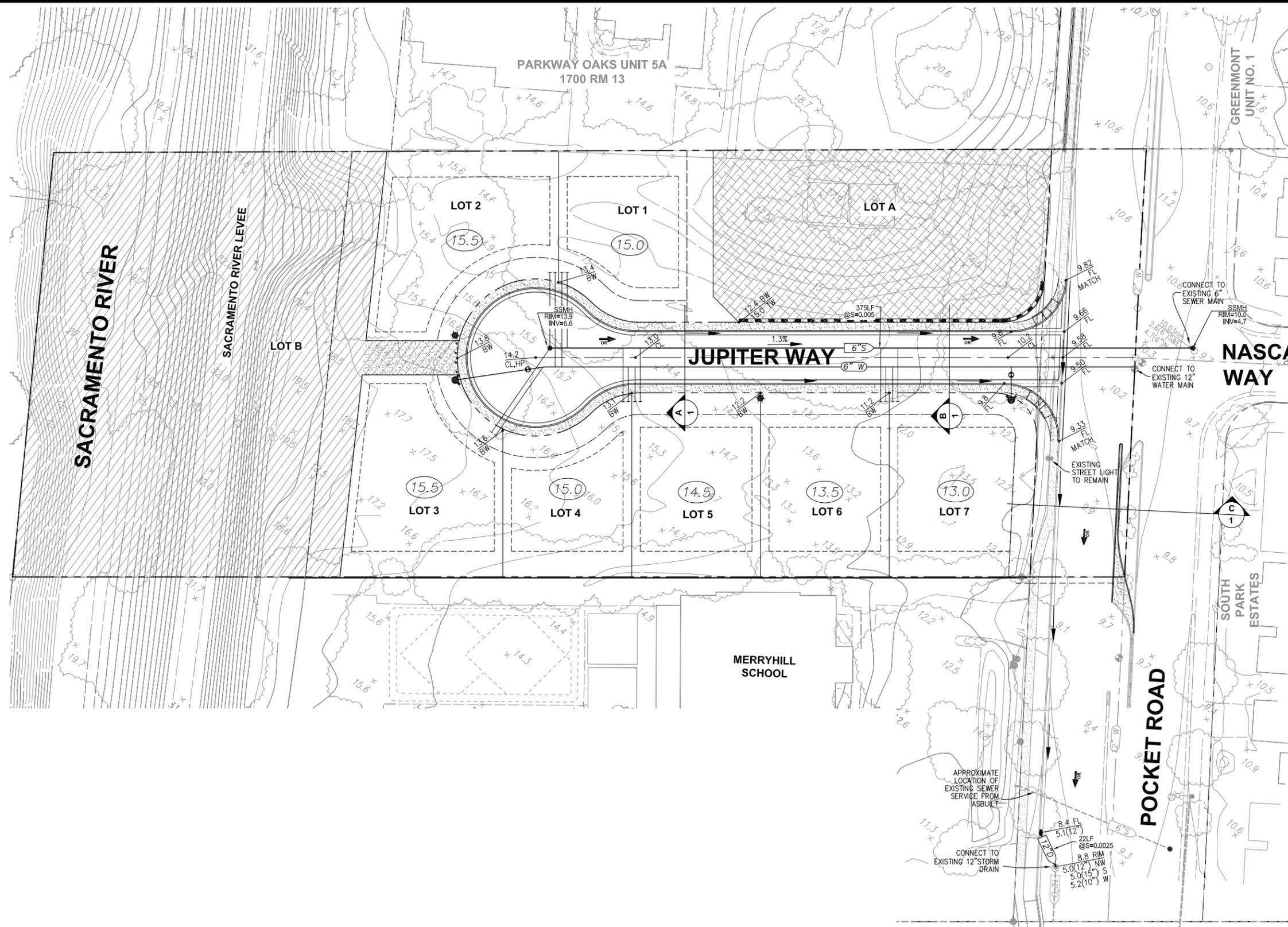


Figure 1
Regional Vicinity



Figure 2
Project Location



Source: Cunningham Engineering

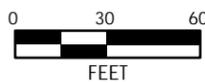


Figure 3
Proposed Site Plan

SECTION III – ENVIRONMENTAL CHECKLIST AND DISCUSSION

LAND USE, POPULATION AND HOUSING, AGRICULTURAL AND FORESTRY RESOURCES, AND ENERGY

Introduction

The California Environmental Quality Act (CEQA) requires the lead agency to examine the effects of a project on the physical conditions that exist in the area which would be affected by the project. CEQA also requires a discussion of any inconsistency between the proposed project and applicable general plans and regional plans.

An inconsistency between the proposed project and an adopted plan for land use development in a community would not constitute a physical change in the environment. When a project diverges from an adopted plan, however, it may affect planning in the community regarding infrastructure and services, and the new demands generated by the project may result in later physical changes in response to the project.

In the same manner, the fact that a project brings new people or demand for housing to a community does not, by itself, change the physical conditions. An increase in population may, however, generate changes in retail demand or demand for governmental services, and the demand for housing may generate new activity in residential development. Physical environmental impacts that could result from implementing the proposed project are discussed in the appropriate technical sections.

This section of the Initial Study identifies the applicable land use designations, plans and policies, and permissible densities and intensities of use, and discusses any inconsistencies between these plans and the proposed project. This section also discusses energy and agricultural and forestry resources and the effect of the project on these resources.

Discussion

Land Use

The project site is designated Suburban Neighborhood Low Density: 3–8/Maximum FAR: 1.5 in the 2035 General Plan and is zoned Agriculture (A). The Suburban Neighborhood Low Density designation provides for low-intensity housing and neighborhood support uses including single-family detached and attached dwellings, accessory second units, limited neighborhood-serving commercial uses, and compatible public, quasi-public, and special uses with a maximum floor area ratio (FAR) of 1.5. The Suburban Neighborhood Low Density designation allows neighborhood support uses (schools, parks, libraries, community centers, and childcare/elderly care facilities).

Development of the site as proposed would alter the existing landscape, but the project site is designated for residential development in the 2035 General Plan, and the proposed development is consistent with the existing land use designation. The proposed gross density for the project is less than 2 units per acre, which is lower than assumed in the 2035 General Plan Master EIR. However, this reduced density is a result of the need to preserve a 0.44-acre portion of the site that has been identified as archeologically sensitive (see Subsection 3, Cultural Resources) as well the need for an additional public easement for levee access and

maintenance. The proposed net density (7 units on ± 1.38 acres) would be approximately 5.1 units per acre, which is consistent with the density range for the R-1 zoning.

The proposed project includes a request to rezone the site from A (Agriculture) to R-1 (Standard Single-Family). This rezone would bring the zoning of the site into conformance with its General Plan designation and would be consistent with the surrounding uses, which are primarily single-family residential and supporting uses. Therefore, the project would not conflict with applicable land use plan, policy, or regulations related to land use. The City has adopted numerous policies for the purpose of avoiding or mitigating an environmental effect. The extent to which the proposed project could result in physical environmental effects, including potential conflicts with such policies, is discussed in the following environmental checklist.

Population and Housing

The project proposes the creation of seven residential lots for the future development of single-family residential units. Based on the City of Sacramento's average household size of 2.66 persons (DOF 2014), the proposed project would provide housing for approximately 19 additional city residents. This represents a 0.004 percent increase of the city's current (2014) population of 475,122, which would be considered negligible. Furthermore, because the project is consistent with the site's current land use designation, this population increase was anticipated in the General Plan and the associated environmental effects were addressed in the Master EIR. The project site is vacant; therefore, the proposed development would not displace any housing or people.

Agricultural and Forestry Resources

The Master EIR discussed the potential impact of development under the 2035 General Plan on agricultural resources and concluded that the impact of the 2035 General Plan on agricultural resources in the city was less than significant (see Master EIR Chapter 4.1). In addition to evaluating the effect of the General Plan on sites in the city, the Master EIR noted that to the extent the 2035 General Plan accommodates future growth within the city limits, the conversion of farmland outside the city limits is minimized (see Master EIR, p. 4.1-3).

The project site and surrounding area are designated by the Farmland Mapping and Monitoring Program as Urban and Built-Up Land. Although the project site is zoned A (Agriculture), the site is designated for residential development in the City's 2035 General Plan and is located in an area surrounded by existing development, making agricultural use of the property unlikely. The project proposes to rezone the site to R-1 (Standard Single-Family), which is consistent with the General Plan land use designation for the site. The site is not subject to a Williamson Act contract. No existing agricultural or timber-harvest uses are located on or in the vicinity of the project site. Development of the site would result in no impacts on agricultural or forestry resources.

Energy

Structures built as part of the project would be subject to Titles 20 and 24 of the California Code of Regulations, which serve to reduce demand for electrical energy by implementing energy-efficient standards for residential and nonresidential buildings. The 2035 General Plan concluded that there are several legislative actions and citywide policies and programs in place to reduce energy consumption and promote conservation. The 2035 General Plan further determined that implementation of these actions, policies, and programs would ensure the proposed General Plan would not result in the wasteful, inefficient, and unnecessary consumption of energy, would not cause the need for additional natural gas or electrical energy-

producing facilities, and, therefore, would result in a less-than-significant impact on energy resources.

The Master EIR evaluated the potential impacts on energy and concluded that the effects would be less than significant (City of Sacramento 2014). The proposed project is consistent with the General Plan land use assumptions and would not result in any impacts not identified and evaluated in the Master EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
1. <u>AESTHETICS, LIGHT AND GLARE</u>			
Would the project:			
A) Have a substantial adverse effect on a scenic vista?			X
B) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X
C) Substantially degrade the existing visual character or quality of the site and its surroundings?			X
D) Create a source of glare that would cause a public hazard or annoyance?			X
E) Create a new source of light that would be cast onto oncoming traffic or residential uses?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

The Master EIR described the existing visual conditions in the General Plan policy area and the potential changes to those conditions that could result from development consistent with the 2035 General Plan. See Master EIR Chapter 4.13, Visual Resources.

The Master EIR discussed potential impacts for glare (Impact 4.13-1) but found that General Plan policies would ensure that the impact would be less than significant. Specifically, Policy ER 7.1.3 requires that misdirected, excessive, or unnecessary outdoor lighting be minimized. In addition, Policy LU 6.1.12 includes a requirement for lighting to be shielded and directed downward to minimize impacts on adjacent residential uses.

Mitigation Measures from 2035 General Plan Master EIR That Apply to Project

General Plan Policies Considered Mitigation

- Policy LU 2.2.1 (World-Class Rivers)
- Policy LU 2.2.2 (Waterway Conservation)
- Policy LU 2.2.3 (Improving River Development and Access)
- Policy LU 2.3.1 (Open Space System)
- Policy LU 2.3.2 (Adjacent Development)
- Policy LU 5.6.5 (Capital View Protection)
- Policy LU 6.1.12 (Compatibility with Adjoining Uses)

- Policy LU 9.1.4 (Open Space Buffers)
- Policy ER 7.1.1 (Protect Scenic Views)
- Policy ER 7.1.2 (Visually Complimentary Development)
- Policy ER 7.1.3 (Lighting)
- Policy ER 7.1.4 (Reflective Glass)
- Policy ER 7.1.5 (Scenic Resources at River Crossings)

Answers to Checklist Questions

Questions A and B

The undeveloped project site is relatively flat and contains open areas of non-native grasses interspersed with mature trees. Because the terrain is flat, views in the project area are local, including adjacent development and landscaping. Views of the Sacramento River corridor are blocked by the adjacent levee. There are no scenic vistas in the vicinity of the project site. Interstate 5 is not designated as a state scenic highway and is located nearly 2 miles east of the project site. No other scenic resources, such as rock outcroppings or historic buildings, exist on or near the project site.

Question C

Project implementation would convert the site from an undeveloped, vacant lot to single family, detached homes and associated roadway, sidewalks, driveways, fencing, lighting, and ornamental landscaping. However, such development would be consistent with the existing development surrounding the project site and the existing General Plan land use designation. Therefore, although the project would change the character of the project site, the change would be a logical extension of and visually compatible with existing residential development along Pocket Road. Furthermore, the project would be subject to the City of Sacramento *Single Family Residential Design Principles* (1998), which would ensure that the development exhibits visually appealing and varied architecture, quality building materials, appropriate color palette, and quality landscaping. Therefore, the proposed project would not substantially degrade the visual character or quality of the project site. This impact would be less than significant.

Questions D and E

Development of the project site as proposed would introduce new reflective surfaces (e.g., window glazing) and new sources of night lighting (e.g., vehicle lights, security lighting, and streetlights). However, the project would be subject to the City's General Plan policies including Policy ER 7.1.3, which requires that misdirected, excessive, or unnecessary outdoor lighting be minimized, and Policy LU 6.1.12, which includes a requirement for lighting to be shielded and directed downward to minimize impacts on adjacent residential uses. Compliance with General Plan policies would ensure that lighting internal to the project would be at appropriate levels and directed in such a way that adjacent uses are not substantially affected by spill light. Shielding and directing light downward would also prevent casting light into oncoming traffic and the nighttime sky.

Regarding the potential for glare, Policy ER 7.1.4 prohibits new development from using reflective glass that exceeds 50 percent of any building surface and on the bottom three floors, using mirrored glass, black glass that exceeds 25 percent of any surface of a building, metal building materials that exceed 50 percent of any street-facing surface of a primarily residential

building, and exposed concrete that exceeds 50 percent of any building. These design features would minimize potential impacts related to daytime glare.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
2. AIR QUALITY <i>Would the proposal:</i>			
A) Result in construction emissions of NO _x (oxides of nitrogen) above 85 pounds per day?			X
B) Result in operational emissions of NO _x or ROG (reactive organic gases) above 65 pounds per day?			X
C) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X
D) Result in PM ₁₀ (particulate matter) concentrations equal to or greater than 5 percent of the state ambient air quality standard (i.e., 50 micrograms/cubic meter for 24 hours) in areas where there is evidence of existing or projected violations of this standard?			X
E) Result in CO (carbon monoxide) concentrations that exceed the one-hour state ambient air quality standard (i.e., 20.0 ppm) or the eight-hour state ambient standard (i.e., 9.0 ppm)?			X
F) Result in exposure of sensitive receptors to substantial pollutant concentrations?			X
G) Result in TAC (toxic air contaminants) exposures creating a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources?			X
H) Impede City or state efforts to meet AB 32 standards for the reduction of greenhouse gas emissions?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

The Master EIR addressed the potential effects of the 2035 General Plan on ambient air quality and the potential for exposure of people, especially sensitive receptors such as children or the elderly, to unhealthy pollutant concentrations. See Master EIR Chapter 4.2.

Policies in the 2035 General Plan were identified as mitigating potential effects of development that could occur under the 2035 General Plan. For example, Policy ER 6.1.1 calls for the City to work with the California Air Resources Board (CARB) and the Sacramento Metropolitan Air Quality Management District (SMAQMD) to meet state and federal air quality standards; Policies ER 6.1.2 and 6.1.3 require the City to review proposed development projects to ensure that the projects incorporate feasible measures that reduce construction and operational

emissions; and Policy ER 6.1.14 requires the City to give preference to contractors using reduced-emission equipment.

The Master EIR identified exposure to sources of toxic air contaminants (TACs) as a potential effect. The following 2035 General Plan policies were identified to reduce this impact to an insignificant level: Policy ER 6.1.2 (described above); Policy ER 6.1.4 requires evaluation of exposure of sensitive receptors to toxic air contaminants and the imposition of appropriate measures to protect public health and safety; and Policy LU 2.7.5 promotes high-quality development adjacent to freeways that protects the public from the adverse effects of vehicle emissions.

The Master EIR found that greenhouse gas (GHG) emissions which would be generated by development consistent with the 2035 General Plan would be a less than significant impact with implementation of the City's adopted Climate Action Plan (CAP). The CAP contains strategies, measures, and actions to reduce GHG emissions and assist the City in adapting to climate change. A complete list of CAP policies and programs is provided as Appendix B to the 2035 General Plan.

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policy

- ER 6.1.1
- ER 6.1.2
- ER 6.1.3
- ER 6.1.4
- LU 2.7.5

Answers to Checklist Questions

Question A

The SMAQMD presents screening criteria in its CEQA Guidelines identifying project sizes by type that could have the potential to result in emissions over criteria levels. According to the SMAQMD, construction of a project that does not exceed the screening level and meets all the screening parameters would be considered to have a less than significant impact on air quality. The SMAQMD screening parameters include the following:

- The construction site must be 35 acres or less.
- The project does not include buildings more than four stories tall.
- The project does not include demolition activities.
- The project does not include significant trenching activities.
- The project does not have a construction schedule that is unusually compact, fast-paced, or involves more than two phases (i.e., grading, paving building construction, and architectural coatings) occurring simultaneously.
- The project does not involve cut-and-fill operations (moving earth with haul trucks and/or flattening or terracing hills).

- The project does not require import or export of soil materials that will require a considerable amount of haul truck activity.
- The project does not involve soil disturbance activity (i.e., grading) that exceeds 15 acres per day.

All construction projects, regardless of the screening level, are required to implement the SMAQMD's Basic Construction Emission Control Practices, which include:

1. Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to, soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
2. Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
3. Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
4. Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
5. All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The project would meet each of the screening parameters provided above and would implement the SMAQMD's Basic Construction Emission Control Practices. Therefore, the project's construction emissions would be considered less than significant.

Questions B through D

For operational pollutants, the SMAQMD screening criteria include screening levels for projects larger than 316 single-family dwelling units. According to the SMAQMD, this operational screening level represents the size of residential development at which the SMAQMD's operational emissions thresholds of significance for reactive organic gases (ROG) and nitrogen oxides (NOx) will not be exceeded. Emissions from the operation of projects below the screening levels will have a less than significant impact on air quality. Since the project proposes seven residential units, there would be a less than significant impact related to long-term operational air quality emissions.

Questions E and F

The SMAQMD provides a project-level screening procedure to determine whether detailed carbon monoxide (CO) hot-spot modeling is required for a proposed development project. This preliminary screening methodology provides lead agencies with a conservative indication of whether project-generated vehicle trips would result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. According to the SMAQMD, the proposed project would result in a less than significant impact to air quality for local CO if:

- Traffic generated by the proposed project would not result in deterioration of intersection level of service (LOS) to LOS E or F;¹ or

¹ Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. LOS is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

- The project would not contribute additional traffic to an intersection that already operates at LOS E or F.

As discussed further in Subsection 11, Transportation and Circulation, the project would generate a minimal number of new vehicle trips and would not result in deterioration of intersection levels of service. Furthermore, all intersections in the vicinity of the project site currently operate at acceptable levels of service. Therefore, the project would not result in CO concentrations that would exceed the applicable standards.

Question G

Land uses such as schools, hospitals, residences, and convalescent homes are considered to be especially sensitive to poor air quality associated with TACs. The most prominent TAC associated with high volumes of traffic on major roadways is diesel particulate matter (PM). The project site is adjacent to Pocket Road, which is classified in the 2035 General Plan as a major collector, and is otherwise surrounded by minor residential roadways. None of these roadways accommodate daily vehicle trips that exceed the SMAQMD TAC-analysis screening protocol of 100,000 vehicles per day on an urban roadway.

In addition, the project site is located approximately 2 miles west of Interstate 5. CARB's Air Quality and Land Use Handbook recommends that sensitive land uses be sited no closer than 500 feet from a freeway or major roadway. This 500-foot buffer area was developed to protect sensitive receptors from exposure to diesel PM and was based on traffic-related studies that showed a 70 percent drop in PM concentrations at a distance of 500 feet from the roadway. Presumably, with increasing distance from the PM source, acute and chronic risks, as well as lifetime cancer risk, due to diesel PM exposure are lowered proportionately. The project site is well beyond 500 feet from Interstate 5 and stationary TAC sources. Therefore, impacts related to TACs would not result in any new significant effect.

Question H

The project would result in the generation of greenhouse gases during construction and operation, as discussed below.

Short-Term Construction Emissions

During construction of the project, GHG emissions would be emitted from the operation of construction equipment and from worker and building supply vendor vehicles. However, because of the small size of the project, the total GHG emissions generated by project construction would be negligible and would represent an insignificant percentage of the estimated annual GHG emissions for all sources in California (459 million metric tons) (CARB 2014). Furthermore, as described above, the project would meet all of the SMAQMD's screening parameters for construction emissions and would be required to implement the SMAQMD's Basic Construction Emissions Control Practices.

Long-Term Operational Emissions

Primary sources of GHG emissions associated with long-term operation of the proposed project would be motor vehicle use and energy consumption. However, because of the small size of the project, the total GHG emissions associated with project operation would be considered negligible. As described above, the project would be well below the SMAQMD's screening threshold for operational emissions. Furthermore, buildings constructed as part of the project

would be required to comply with current California building codes that require structures to incorporate energy-efficient materials and design. Specifically, the California Energy Code (Title 24, Part 6, of the California Code of Regulations, California's Energy Efficiency Standards for Residential and Nonresidential Buildings) provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California. The provisions of the California Energy Code apply to the building envelope, space-conditioning systems, and water-heating and lighting systems of buildings and appliances; they also give guidance on construction techniques to maximize energy conservation. Minimum efficiency standards are given for a variety of building elements, including appliances, water and space heating and cooling equipment, and insulation for doors, pipes, walls, and ceilings.

The California Energy Commission adopted the 2005 changes to the Building Efficiency Standards, which emphasized saving energy during peak periods and seasons, and improving the quality of installation of energy efficiency measures. It is estimated that implementation of the 2005 Title 24 standards has resulted in an increased energy savings of 8.5 percent relative to the previous Title 24 standards. Compliance with Title 24 standards is verified and enforced through the local building permit process. The 2008 Title 24 Standards, which had an effective date beginning August 1, 2009, include added provisions that require, for example, "cool roofs" on commercial buildings; increased efficiency in heating, ventilating, and air conditioning systems; and increased use of skylights and more efficient lighting systems. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2013 Standards, which went into effect on July 1, 2014, continue to improve upon the 2008 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Reductions in energy use achieved through implementation of the California Energy Code would result in corresponding reductions in GHG emissions.

Ongoing Activities

In February 2012, the City of Sacramento adopted the Climate Action Plan (CAP). The CAP provides additional guidance for the City's ongoing efforts to reduce GHG emissions. For instance, the CAP includes 7 strategies and 31 measures to reduce greenhouse gas emissions.

To prevent the continued escalation of GHG emissions, the CAP establishes a 2020 target (15 percent below 2005 levels) and 2030 and 2050 goals (38 percent and 83 percent below 2005 levels, respectively) to reduce annual emissions levels consistent with state laws and guidelines. According to the CAP, the actions that could be quantified, along with those that could not, outline a path to meet the City's 2020 reduction target, consistent with state laws and guidelines. When combined with quantified state and federal legislative reductions, primary actions contained in the CAP offer a potential reduction of about 1.37 million metric tons of carbon dioxide equivalent (CO₂e) annually. This level of reduction exceeds the City's 2020 target of 15 percent by 6,227 metric tons of CO₂e, and is consistent with state law.

In order to evaluate a proposed project's consistency with the CAP, the City has developed the CAP Consistency Review Checklist. The purpose of the CAP Consistency Review Checklist is to provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA). Projects that demonstrate consistency with the CAP and the Sacramento 2030 General Plan are considered less than significant in terms of the contribution of GHG emissions. Projects that do not demonstrate consistency may be required, at the City's discretion, to prepare a more comprehensive project-specific analysis of GHG emissions consistent with CEQA requirements.

Project consistency with the CAP is demonstrated in **Table 1**.

**TABLE 1
CITY OF SACRAMENTO CAP COMPLIANCE**

Checklist Item	Project Compliance
<p>1. Is the proposed project substantially consistent with the City’s over-all goals for land use and urban form, allowable floor area ratio (FAR) and/or density standards in the City’s 2035 General Plan, as it currently exists?</p>	<p>Compliant</p> <p>The project site is designated Suburban Neighborhood Low Density: 3–8/Maximum FAR: 1.5 in the 2035 General Plan. The Suburban Neighborhood Low Density designation provides for low-intensity housing and neighborhood support uses including single-family detached and attached dwellings, accessory second units, limited neighborhood-serving commercial uses, and compatible public, quasi-public, and special uses with a maximum floor area ratio (FAR) of 1.5.</p> <p>The project is consistent with the allowed land uses and densities identified in the 2035 General Plan.</p>
<p>2. Would the project incorporate traffic calming measures? (Examples of traffic calming measures include, but are not limited to: curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers.)</p>	<p>Compliant</p> <p>According to the Consistency Review Checklist, if the proposed project does not include any roadway or facility improvements, traffic calming measures may not apply. For example, certain infill projects may not result in on-street or transportation facility improvements because sufficient infrastructure already exists. The proposed project consists of seven residential units on 3.46 acres of land surrounded by existing urban development. Traffic facilities proposed by the project include a single, 350 foot long road terminating at a cul-de-sac accompanied with curbs, gutters, and sidewalks. Therefore, the proposed project is considered a small infill development that is already accommodated by sufficient traffic calming infrastructure.</p>
<p>3. Would the project incorporate pedestrian facilities and connections to public transportation consistent with the City’s Pedestrian Master Plan?</p>	<p>Compliant</p> <p>Sidewalks are currently provided along Pocket Road adjacent to the project site. The existing sidewalk would be extended onto the project site, thereby enhancing pedestrian access to the numerous bus stop facilities located on Pocket Road. For instance, bus stops for routes traveling in both directions on Pocket Road are located directly adjacent to the project boundary. Two additional bus stops are located 0.1 mile south.</p>
<p>4. Would the project incorporate bicycle facilities consistent with the City’s Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen?</p>	<p>Compliant</p> <p>Bicycle lanes are currently provided along Pocket Road adjacent to the project site. The existing bicycle lane would continue to operate along Pocket Road.</p>

Checklist Item	Project Compliance
<p>5. For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., photovoltaic systems) that would generate at least a minimum of 15% of the project's total energy demand on-site?</p>	<p>Not Applicable The proposed project is less than 10 units.</p>
<p>6. Would the project (if constructed on or after January 1, 2014) comply with minimum CALGreen Tier 1 water efficiency standards?</p>	<p>Compliant According to the Consistency Review Checklist, the City enforces compliance with precise requirements of CALGreen with a condition of approval requiring the project to comply with minimum CALGreen Tier 1 water efficiency and conservation standards. Planning approval of a proposed project will include the following condition: <i>“Project must meet CALGreen Tier 1 water efficiency and conservation standards. Copies of the appropriate CalGreen checklist shall be included on the full-size sheets for building plan check submittals.”</i></p>

As shown in **Table 1**, the proposed project would not impede any of the applicable GHG emissions reduction measures of the City of Sacramento CAP. No inconsistencies between the project and the CAP would occur. There is no impact.

Mitigation Measures

None required.

Findings

The project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<p>3. <u>BIOLOGICAL RESOURCES</u> Would the proposal:</p>			
<p>A) Create a potential health hazard, or use, produce, or dispose of materials that would pose a hazard to plant or animal populations in the area affected?</p>			X
<p>B) Result in substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of plant or animal?</p>		X	
<p>C) Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands)?</p>		X	

Standards of Significance

For the purposes of this document, special-status has been defined to include those species that:

- Are listed, proposed, or candidates for listing under the federal Endangered Species Act.
- Are listed or proposed for listing under the California Endangered Species Act.
- Are designated as Species of Special Concern by the California Department of Fish and Wildlife (CDFW).
- Are designated as Fully Protected by the CDFW.
- Meet the definition of rare or endangered under CEQA, including California Native Plant Society (CNPS) List 1 and 2.

Setting and Methods

A Michael Baker International biologist reviewed the arborist report prepared for the project and performed preliminary database searches to identify special-status species with the potential to occur in the area. A reconnaissance-level survey was conducted on January 26, 2015, to collect site-specific data regarding habitat suitability for special-status species, as well as the identification of potentially jurisdictional waters.

Database searches were performed on the following websites:

- US Fish and Wildlife Service (USFWS) Sacramento Office Species Lists (2015a)
- USFWS Critical Habitat Portal (2015b)
- California Natural Diversity Database (CNDDDB) (CDFW 2015a)
- CNPS Inventory of Rare, Threatened, and Endangered Plants of California (2015)

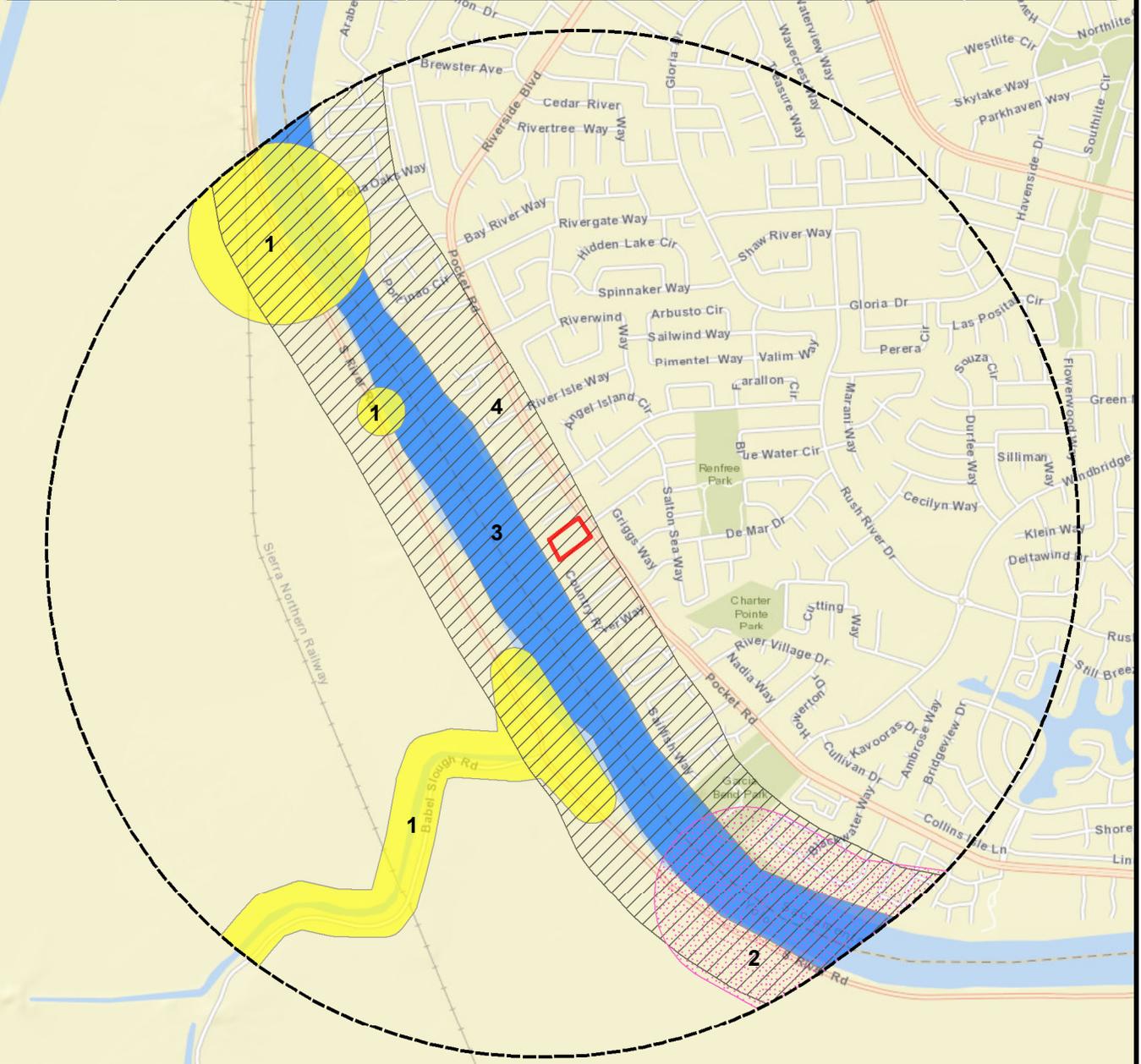
A search of the USFWS database was performed for the Clarksburg and Sacramento West, California, US Geological Survey (USGS) 7.5-minute quadrangles to identify special-status species within USFWS jurisdiction that may be affected by the proposed project. In addition, a query of the USFWS Critical Habitat Portal was conducted to identify potential critical habitat designations in the vicinity of the project. A query of the CNDDDB provided a list of known occurrences for special-status species within a 1- and 5-mile radius of the proposed project (**Figure 4**). Lastly, the CNPS database was queried to identify special-status plant species with the potential to occur in the Clarksburg and Sacramento West USGS 7.5-minute quadrangles. Raw data from the aforementioned database queries is provided in **Appendix A**.

The site review conducted on January 26, 2015, revealed a fallow field with several large trees including valley oak (*Quercus lobata*), black walnut (*Juglans sp.*), black locust (*Robinia pseudoacacia*), and English walnut (*J. regia*). Thick stands of fig (*Ficus carica*) and Himalayan blackberry (*Rubus armeniacus*) dominate the northeast corner of the site. The entire site was characterized by disturbed soils (i.e., disced) with a ground cover composed of weedy annual species such as Johnsongrass (*Sorghum halepense*), wild radish (*Raphanus sativus*), ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), Bermuda grass (*Cynodon dactylon*), prickly lettuce (*Lactuca serriola*), and black mustard (*Brassica nigra*).

The USFWS, CNDDDB, and CNPS database query results identified several special-status species with the potential to occur in the vicinity of the proposed project. In addition, the USFWS Critical Habitat Portal revealed critical habitat in the project vicinity (**Figure 5**). **Table 2** provides a summary of all species identified in the search results, a description of the habitat requirements for each species, and conclusions regarding the potential for each species to be impacted by the proposed project based on existing conditions on the site.

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Map ID	Scientific Name	Common Name	Federal Listing	State Listing	Rare Plant Rank
1	<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	
2	<i>Oncorhynchus mykiss irideus</i>	steelhead - Central Valley DPS	Threatened	None	
3	<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	None	None	
4	<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened	



Legend

Project Site	CNDDB Occurrence Type	Fish
1-Mile Radius of Project Site	Bird	<i>Oncorhynchus mykiss irideus</i>
	<i>Buteo swainsoni</i>	<i>Pogonichthys macrolepidotus</i>
	<i>Spirinchus thaleichthys</i>	<i>Spirinchus thaleichthys</i>

Source: CA Dept of Fish & Wildlife (2015); Sacramento County (2014); ESRI.

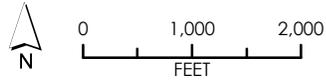


Figure 4
Previously Recorded Occurrences of Special-Status Species Within 1 Mile of Project Study Area



Figure 5
Critical Habitat

Table 2 – Special-Status Species Occurrences

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
Plants							
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris' milk-vetch	—	—	1B.1	Vernally mesic meadows and seeps, and subalkaline flats in valley and foothill grasslands. Elev: 7–246 ft (2–75 m). Blooms: April–May. (CNPS 2015)	A	None. Suitable habitat not present.
<i>Carex comosa</i>	bristly sedge	—	—	2B.1	Marshes, swamps, and lake margins. Elev: 0–2,051 ft (0–625 m). Blooms: May–Sept. (CNPS 2015)	A	None. Suitable habitat not present.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	woolly rose-mallow	—	—	1B.2	Freshwater marshes and swamps. Elev: 0–394 ft (0–120 m). Blooms: June–Sept. (CNPS 2015)	A	None. Suitable habitat not present.
<i>Juglans hindsii</i>	Northern California black walnut	—	—	1B.1	Riparian forest/woodland. Elev: 0–1,444 ft (0–440 m). Blooms: April–May. (CNPS 2015)	A	None. According to the arborist report (Appendix A), this species is not present. Individuals onsite have hybridized with English walnut.
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	—	—	1B.2	Alkaline flats in valley and foothill grasslands. Elev: 7–656 ft (2–200 m). Blooms: March–May. (CNPS 2015)	A	None. Suitable habitat not present.
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	—	SR	1B.1	Riparian scrub, and brackish or freshwater marshes and swamps. Elev: 3–33 ft (0–10 m). Blooms: April–Nov. (CNPS 2015)	A	None. Suitable habitat not present.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	—	—	1B.2	Assorted shallow freshwater marshes and swamps. Elev: 0–2,133 ft (0–650 m). Blooms: May–Oct (CNPS 2015)	A	None. Suitable habitat not present.
<i>Symphotrichum lentum</i>	Suisun Marsh aster	—	—	1B.2	Brackish and freshwater marshes and swamps. Elev: 0–10 ft (0–3 m). Blooms: May–Nov. (CNPS 2015)	A	None. Suitable habitat not present.
<i>Trifolium hydrophilum</i>	saline clover	—	—	1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), and vernal pools. Elev: 0–984 ft (0–300 m). Blooms: April–June. (CNPS 2015)	A	None. Suitable habitat not present.
Invertebrates							
<i>Branchinecta conservatio</i>	conservancy fairy shrimp	FE	—		Vernal pools, often large and turbid pools (USFWS 2005).	A	None. Suitable habitat not present.
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FT	—		Found only in vernal pools and ephemeral wetlands. Distributed throughout the Central Valley, including Sacramento County (USFWS 2005).	A	None. Suitable habitat not present.
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	FT	—		Dependent on host plant, elderberry (<i>Sambucus</i> spp.), which generally grows in riparian woodlands and upland habitats of the Central Valley. Current distribution in the Central Valley from Shasta County to Fresno County (USFWS 1999).	A	None. Host plant not present on project site.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	FE	—		Wide variety of ephemeral wetland habitats, including vernal pools. Distributed throughout Central Valley and San Francisco Bay Area (USFWS 2005).	A	None. Suitable habitat not present.
Fish							
<i>Acispenser medirostris</i>	green sturgeon	FT	SSC		Entire coast of California. Spawning occurs in Sacramento River and Klamath River (USFWS 1996). Oceanic waters, bays, and estuaries during non-spawning season. Spawning habitat = deep pools in large, turbulent, freshwater mainstems (NMFS 2005).	A	None. Suitable habitat not present.
<i>Archoplites interruptus</i>	Sacramento perch	—	SSC		Historically, Central Valley sloughs, slow-moving rivers, and lakes with beds of rooted emergent aquatic vegetation. Current distribution is artificially stocked farm ponds and reservoirs (USFWS 1996).	A	None. Suitable habitat not present.
	delta smelt	FT	SE		Distribution includes the Sacramento River below Isleton, San Joaquin River below Mossdale, and Suisun Bay. Spawning areas include the Sacramento River below Sacramento, Mokelumne River system, Cache Slough, the delta, and Montezuma Slough (USFWS 1996).	A	None. Suitable habitat not present.
<i>Hypomesus transpacificus</i>	Critical Habitat, delta smelt	X	—			A	None. Project site not located within Critical Habitat Unit.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT	—		Spawning habitat = gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning = estuarine, marine waters (Busby et al. 1996).	A	None. Suitable habitat not present.
	Critical Habitat, Central Valley steelhead	X	—			A	None. Sacramento River adjacent to the project site is associated with a critical habitat unit; however, no work would be done on the levee or its river side.
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run chinook salmon	FT	ST		Spawning habitat = fast moving, freshwater streams and rivers. Juvenile habitat = brackish estuaries. Non-spawning = marine waters (Myers et al. 1998).	A	None. Suitable habitat not present.
	Critical Habitat, Central Valley spring-run chinook salmon	X	—			A	None. Sacramento River adjacent to the project site is associated with a critical habitat unit; however, no work would be done on the levee or its river side.
	winter-run chinook salmon, Sacramento River	FE	SE			A	None. Suitable habitat not present.
	Critical Habitat, winter-run chinook salmon, Sacramento River	X	—			A	None. Project site not located within Critical Habitat Unit.
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	—	SSC		Prefer slow-moving sections of freshwater rivers and sloughs. Most abundant in Suisun Bay and Marsh region. Largely absent from Sacramento River except during spawning (USFWS 1996).	A	None. Suitable habitat not present.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Spirinchus thaleichthys</i>	longfin smelt	FC	ST/SSC		Adults and juveniles require salt or brackish estuary waters. Spawning takes place in freshwater over sandy-gravel substrates, rocks, and aquatic plants (Moyle et al 1995).	A	None. Suitable habitat not present.
Amphibians							
<i>Ambystoma californiense</i>	California tiger salamander, central population	FT	ST		Occurs in grasslands of the Central Valley and oak savannah communities in the Central valley, the Sierra Nevada and Coast ranges, and the San Francisco Bay area. Needs seasonal or semi-permanent wetlands to reproduce, and terrestrial habitat with active ground squirrel or gopher burrows (Bolster 2010).	A	None. Suitable habitat not present.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Rana draytonii</i>	California red-legged frog	FT	SSC		Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streambanks with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Breeding habitat is in permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. From sea level to 5,000 feet. (1,525 meters) (Nafis 2015).	A	None. Suitable habitat not present.
Reptiles							
<i>Emys marmorata</i>	western pond turtle	—	SSC		Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 feet (1,800 meters) (Nafis 2015).	A	None. Not known to occur in the Sacramento River (CDFW 2015c).

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Thamnophis gigas</i>	giant garter snake	FT	ST		Marshes, sloughs, ponds, small lakes, low gradient streams, irrigation and drainage canals, rice fields and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November–mid March). Ranges in the Central Valley from Butte County to Buena Vista Lake in Kern County. Endemic to valley floor wetlands (USFWS 2012).	A	None. The Sacramento River may provide suitable aquatic habitat; however, suitable upland habitat is not present as no burrows or other refugia were observed during the reconnaissance-level survey, and the steep levee may act as a barrier between the river and project activities.
Birds							
<i>Agelaius tricolor</i>	tricolored blackbird	—	SSC		Nests in wetlands or in dense vegetation near open water. Dominant nesting substrates: cattails, bulrushes, blackberry, agricultural silage. Nesting substrate must either be flooded, spinous, or in some way defended against predators (Hamilton 2004).	A	None. Suitable habitat not present.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Athene cunicularia</i>	burrowing owl	—	SSC		Open, flat expanses with short, sparse vegetation and few shrubs, level to gentle topography and well-drained soils. Requires underground burrows or cavities for nesting and roosting. Can use rock cavities, debris piles, pipes and culverts if burrows unavailable. Habitats include grassland, shrub steppe, desert, agricultural land, vacant lots and pastures (CDFW 2015b).	A	None. Suitable habitat not present. No suitable burrows or signs of burrowing owl were observed during the reconnaissance-level survey.
<i>Buteo swainsoni</i>	Swainson's hawk	—	ST		Nests in stands with few trees in riparian areas, juniper-sage flats, and oak savannah in the Central Valley. Forages in adjacent grasslands, agricultural fields and pastures (CDFW 2015b).	P	May occur. Suitable nesting habitat present.
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	PT	SE		Requires large, dense tracts of riparian woodland with well-developed understories. Occurs in deciduous trees or shrubs. Prefers willow, but will also nest in orchards adjacent to streams in Sacramento Valley. Restricted to moist habitats along slow-moving waterways during breeding season (CDFW 2015b).	A	None. Suitable habitat not present.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/Absent	Occurrence Potential
<i>Melospiza melodia</i>	song sparrow ("Modesto" population)	—	SSC		Breeds and winters in riparian, fresh or saline emergent wetland, and wet meadows. Breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and fresh or saline emergent vegetation (CDFW 2015b).	A	None. Suitable habitat not present.
<i>Progne subis</i>	purple martin	—	SSC		Woodland and forest habitats with numerous suitable nest cavities, open air space above nest sites, and aerial insect prey (Shuford and Gardali 2008).	A	None. Suitable habitat not present.
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE	SE		Obligate riparian breeder. Cottonwood willow, oak woodlands, and mule fat scrub along watercourses (USFWS 1998).	A	None. Suitable habitat not present.
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	—	SSC		Nest in marshes with tall, emergent vegetation (e.g., tules and cattails) adjacent to deepwater (Shuford and Gardali 2008).	A	None. Suitable habitat not present.

Key
Federal & State Status
(FC) Federal Candidate
(FD) Federally Delisted
(FE) Federal Endangered
(FP) Fully Protected
(FT) Federal Threatened
(PT) Proposed Threatened
(SCE) State Candidate Endangered
(SCT) State Candidate Threatened
(SE) State Endangered
(SR) State Rare
(SSC) State Species of Special Concern
(ST) State Threatened
(X) Federally Designated Critical Habitat
CNPS Rare Plant Rank
<i>Rareness Ranks</i>
(1A) Presumed Extinct in California
(1B) Rare, Threatened, or Endangered in California and Elsewhere
(2B) Rare, Threatened, or Endangered in California, But More Common Elsewhere
<i>Threat Ranks</i>
(0.1) Seriously threatened in California
(0.2) Fairly threatened in California
(0.3) Not very threatened in California

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

Chapter 4.3 of the Master EIR evaluated the effects of the 2035 General Plan on biological resources within the General Plan policy area. The Master EIR identified potential impacts in terms of degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of special-status birds, through the loss of both nesting and foraging habitat.

Policies in the 2035 General Plan were identified as mitigating the effects of development that could occur under the provisions of the 2035 General Plan. For example, Policy ER 2.1.5 calls for the City to preserve the ecological integrity of creek corridors and other riparian resources; Policy ER 2.1.10 requires the City to consider the potential impact on sensitive plants and wildlife for each project and to require preconstruction surveys when appropriate; and Policy 2.1.11 requires the City to coordinate its actions with those of the CDFW, the USFWS, and other agencies in the protection of resources.

The Master EIR concluded that the effects of development that could occur under the 2035 General Plan would be less than significant after policy implementation as they related to effects on special-status plant species (Impact 4.3-1), reduction of habitat for special-status invertebrates (Impact 4.3-2), loss of habitat for special-status birds (Impact 4.3-3), loss of habitat for special-status amphibians and reptiles (Impact 4.3-4), loss of habitat for special-status mammals (Impact 4.3-5), special-status fish (Impact 4.3-6), and, in general, loss of riparian habitat, wetlands, sensitive natural communities, and trees (Impacts 4.3-7 through -10). However, the Master EIR concluded that the contribution to regional loss of special-status species or their habitat (Impact 4.3-11) would be significant and unavoidable.

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policy

- ER 2.1.5
- ER 2.1.10
- ER 2.1.11

Answers to Checklist Questions

Question A

The proposed project is a residential use. Such uses do not typically create a potential health hazard or use, produce, or dispose of materials that would pose a hazard to plant or animal populations in the project area.

Question B

As shown in **Table 2**, based on species identified in database search results and field reconnaissance of the project site taking into consideration the habitat requirements for each species, Swainson's hawk is the only threatened species with potential to occur on the project site. No other threatened or endangered species were identified as having the potential to be adversely impacted by the proposed project. Critical habitat for Central Valley steelhead and Chinook salmon occurs in the Sacramento River; however, no project activities will occur on the river side of the levee, so there would be no impact.

Sixty-four (64) previously recorded occurrences for Swainson's hawk are within a 5-mile radius of the project, and three are within a 1-mile radius (see CNDDDB Output in **Appendix A**). Swainson's hawk is currently listed by the CDFW as a threatened species and is afforded protection under the Migratory Bird Treaty Act. This species' breeding range includes western Canada, the western United States, and northern Mexico. In the Central Valley of California, Swainson's hawks arrive on their breeding grounds beginning in March and leave for their wintering grounds in South America in September and October.

The Central Valley population is concentrated in Yolo, San Joaquin, and Sacramento counties (CDFW 1994). Typical nesting habitats are riparian corridors or isolated trees in proximity to suitable foraging habitat. Tree species commonly selected include valley oak, Fremont's cottonwood, and willow, although a wide variety of exotic and other native tree species have been used (CDFW 1994). Suitable foraging habitat includes open grasslands, agricultural fields, and pastures. Alfalfa, row crops, and grain fields are the Swainson's hawk's preferred foraging habitats, as the frequency of harvest and the soil disturbance associated with these activities facilitates the capture of small mammal prey (e.g., voles).

During the January 26, 2015, site review, it was determined that canopy trees on-site and adjacent to the project site could provide suitable nesting habitat for Swainson's hawk. However, only a scattered occurrence of small mammal burrows was observed, suggesting the project does not support an ample population of suitable forage for this species. High quality foraging habitat occurs across the Sacramento River in the form of expansive agricultural fields. It is unlikely that Swainson's hawk would choose to forage on the project site, which supports a small area of annual grassland surrounded by dense urban cover, over the high quality forage across the river. In addition, according to the CDFW's (1994) Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California, mitigation is not required for infill projects that will result in a loss of less than 5 acres of foraging habitat and are surrounded by existing urban development.

Canopy trees on and adjacent to the project site could provide suitable nesting habitat for the Swainson's hawk, though nest sites were not identified during the site evaluation. Should these trees become occupied with nesting Swainson's hawk prior to or during construction, active nest sites could be removed or nest failure could occur. This could result in a substantial reduction of the quality of the environment or a reduction of the Swainson's hawk population. The mitigation measures included below require training of construction workers to recognize sensitive biological resources and surveys for raptors, which would ensure impacts to Swainson's hawk are less than significant.

Question C

No waters of the State or of the United States were identified as having the potential to be adversely impacted by the proposed project. A letter from the US Army Corps of Engineers can be found in **Appendix A**.

Trees on and adjacent to the project site may provide suitable nesting habitat for birds protected under the Migratory Bird Treaty Act, as well as Fish and Game Code Sections 3503.5 and 3800–3806. Therefore, the proposed project has the potential to adversely impact migratory birds and raptors not included in **Table 2** if there are nests in trees that would be removed to accommodate project construction. The mitigation measures included below require nest and migratory bird surveys, which would ensure impacts to migratory birds and raptors are less than significant.

According to the arborist report provided in **Appendix A**, one on-site tree (#78) could be considered a “heritage tree” under the City’s current tree ordinance (City Code Section 12.64.020). Based on the project design plans, this tree is planned for removal. No other trees are considered City trees or heritage trees and thus are not protected by the tree ordinance. The project is required to comply with the tree ordinance, and the project applicant will be required to obtain a permit prior to tree removal.

Mitigation Measures

BIO-1 Worker Environmental Awareness Training. Before the start of construction activities, the project applicant shall retain a qualified biologist to conduct mandatory contractor/worker awareness training for construction personnel. The awareness training shall be provided to all construction personnel to brief them on the identified location of sensitive biological resources, including how to identify species (visual and auditory) most likely to be present and the need to avoid impacts to biological resources (e.g., special-status wildlife and jurisdictional waters) and to brief them on the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor shall ensure that they receive the mandatory training before starting work.

Timing/Implementation: *Prior to project construction*

Enforcement/Monitoring: *City of Sacramento Community Development Department*

BIO-2 Survey for Active Swainson’s Hawk and Raptor Nests. If clearing and/or construction activities would occur during the raptor nesting season (January 15–August 15), preconstruction surveys to identify active raptor nests shall be conducted by a qualified biologist within 14 days prior to construction initiation in specific project sites. Focused surveys must be performed by a qualified biologist for the purposes of determining the presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500-foot buffer, where accessible. If no active nests are found, no further mitigation is required. Surveys shall be repeated if construction is delayed for more than 15 days.

If active raptor (excluding Swainson’s hawk) nest sites are identified within 500 feet of project activities, the applicant shall impose a 250-foot setback of all active nest sites prior to commencement of any construction activities to avoid construction- or access-related disturbances to nesting raptors. Project-related activities (i.e., vegetation removal, earth moving, and construction) will not occur within the setback until the nest is deemed inactive. Activities permitted within setbacks and the size of setbacks may be adjusted through consultation with the CDFW and/or the City.

If active Swainson’s hawk nest sites are identified within 500 feet of project activities, the applicant shall impose a 500-foot setback of all active nest sites prior to commencement of any construction activities to avoid construction or access-related disturbances to nesting raptors. Project-related activities (i.e., vegetation removal, earth moving, and construction) will not occur within the setback until the nest is deemed inactive. Activities permitted within setbacks and

the size of setbacks may be adjusted through consultation with the CDFW and/or the City.

Timing/Implementation: 14 days prior to any construction occurring between January 15 and August 15

Enforcement/Monitoring: City of Sacramento Community Development Department

BIO-3

Survey for Migratory Birds. If any clearing and/or construction activities will occur during the nesting season (March 15–August 15), preconstruction surveys to identify active migratory bird nests shall be conducted by a qualified biologist within 14 days prior to construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining the presence/absence of active nest sites within the proposed impact area. Surveys shall be repeated if construction is delayed for more than 15 days.

If active nest sites are identified within 200 feet of project activities, the applicant shall impose an exclusionary buffer for all active nest sites prior to commencement of any project construction activities, to avoid construction or access-related disturbances to migratory bird nesting activities. An exclusionary buffer constitutes an area where project-related activities (i.e., vegetation removal, earth moving, and construction) will not occur, and will be imposed within 100 feet of any active nest sites until the nest is deemed inactive by a qualified biologist. Activities permitted within and the size (i.e., 100 feet) of the exclusionary buffer may be adjusted through consultation with the CDFW.

Timing/Implementation: 14 days prior to any construction occurring between March 15 and August 15

Enforcement/Monitoring: City of Sacramento Community Development Department

Findings

All additional significant environmental effects of the project relating to biological resources can be mitigated to a less than significant level with the measures identified above. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
4. CULTURAL RESOURCES Would the project:			
A) Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in Section 15064.5?	X		
B) Directly or indirectly destroy a unique paleontological resource?		X	
C) Adversely affect tribal cultural resources?	X		

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

The Master EIR evaluated the potential effects of development under the 2035 General Plan on prehistoric and historic resources (see Chapter 4.4). The Master EIR identified significant and unavoidable effects on historic resources and archaeological resources.

General Plan policies identified as reducing such effects call for identification of resources on project sites (Policy HCR 2.1.1), implementation of applicable laws and regulations (Policy HCR 2.1.2), early consultation with owners and land developers to minimize effects (Policy HCR 2.1.10), and encouragement of adaptive reuse of historic resources (Policy HCR 2.1.14). Demolition of historic resources is deemed a last resort (Policy HCR 2.1.15).

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- HCR 2.1.1 (Identification)
- HCR 2.1.2 (Applicable Laws and Regulations)
- HCR 2.1.3 (Consultation)
- HCR 2.1.4 (Incentive and Enforcement)
- HCR 2.1.5 (National, California, and Sacramento Registers)
- HCR 2.1.8 (Historic Preservation Enforcement)
- HCR 2.1.10 (Early Project Consultation)
- HCR 2.1.16 (Archaeological & Cultural Resources)
- HCR 2.1.17 (Preservation Project Review)

Answers to Checklist Questions

Questions A and C

Portions of the project site have been the subject of seven previous cultural resource investigations over the past 80 years. A review of these previous studies was conducted as part of the cultural resources report prepared for the proposed project. The collective findings of these previous investigations were used to identify those areas of the site which are most sensitive for the presence of cultural resources. It was determined that the proposed project would result in construction in areas known to be moderately sensitive for the presence of prehistoric resources; therefore, this is considered a potentially significant impact. This issue will be addressed in the EIR.

Question B

The City of Sacramento and surrounding area is not highly sensitive for unique paleontological resources, although some discoveries have been made in the past. Therefore, paleontological resources may be present in fossil-bearing soils and rock formations below the ground surface. Earth-disturbing activities in fossil-bearing soils and rock formations have the potential to damage or destroy paleontological resources that may be present below the ground surface. However, the proposed project would require minimal excavations below the existing grade. Additionally, General Plan Policy HCR 2.1.16 requires adherence to proper protocols if paleontological resources are discovered during excavation or construction. Implementation of these protocols would reduce this impact to a less than significant level.

Findings

With implementation of the identified General Plan policy the project would have no new or additional project-specific significant environmental effects related to paleontological resources. However, potential impacts on archaeological resources will be addressed in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<p><u>5.GEOLOGY AND SOILS</u></p> <p>Would the project allow a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards?</p>			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

Chapter 4.5 of the Master EIR evaluated potential effects related to seismic hazards, underlying soil characteristics, slope stability, erosion, existing mineral resources, and paleontological resources in the General Plan policy area. Implementation of identified policies in the 2035 General Plan reduced all effects to a less than significant level. Policies EC 1.1.1 and EC 1.1.2 require regular review of the City’s seismic and geologic safety standards and geotechnical investigations for project sites.

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- EC 1.1.1 (Review Standards)
- EC 1.1.2 (Geotechnical Investigations)
- ER 1.1.7 (Construction Site Impacts)

Answers to Checklist Question

Surface faulting or ground rupture tends to occur along lines of previous faulting. The project site is not located in an Alquist-Priolo earthquake hazard zone (DOC 2015a). Furthermore, there are no known faults traversing the project site or in the vicinity of the site. The possibility of fault rupture is therefore negligible. However, in the event of an earthquake on a nearby fault, the project site could experience ground shaking.

The California Geological Survey (CGS) probabilistic seismic hazards maps show that the seismic ground-shaking hazard for the city is relatively low and is among the lowest in the state (DOC 2015b). Nonetheless, the State of California provides minimum standards for structural design and site development through the California Building Standards Code (CBS) (California Code of Regulations (CCR), Title 24, Part 2). City Code Section 15.04.050 adopts the 2013 California Building Standards Code, and the City's enforcement of its Building Code ensures the project would be consistent with the CBSC.

A geotechnical engineering report was prepared for the proposed project (Wallace Kuhl 2013) and is provided as **Appendix B**. This report provided seismic design parameters for the project site to be used for seismic design of the proposed residential structures using the 2010 CBSC. Consistency with the CBSC and these site-specific design parameters would ensure that all

proposed structures are designed and constructed to withstand seismic activity and minimize potential hazards to residents.

The geotechnical engineering report also evaluated site soils to ensure they would be adequate to support the proposed development. The report concluded that project site soils possess a low expansion potential (Wallace Kuhl 2013, p. 6). In addition, the report provided recommendations for site clearing, site preparation, utility trench backfill, foundation design, interior floor slab support, and pavement design. These recommendations would be incorporated into the project design. City inspection during construction would ensure that all recommendations are implemented properly.

With the exception of the adjacent levee, the project site is relatively level. The levee is regularly maintained to ensure slope stability. Therefore, the potential for landslide on the site is considered to be minimal.

The project site slopes gently to the southeast. Ground disturbance during construction activities would expose site soils to the effects of wind and water erosion. However, the following regulations control erosion during construction-related activities.

The State Water Resources Control Board (SWRCB) permits all regulated construction activities under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity. As part of the NPDES permit process, the project applicant would be required to prepare and comply with a stormwater pollution prevention plan (SWPPP) that specifies best management practices (BMPs). Examples of typical construction best management practices in SWPPPs include using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drains or surface water. The discharger must also install structural controls, such as sediment control, as necessary, which would constitute Best Available Technologies (BAT) to achieve compliance with water quality standards.

The project's construction activities would also be required to comply with the City's Grading, Erosion, and Sediment Control Ordinance (Chapter 15.88 of the Sacramento City Code), which requires preparation of an erosion and sediment control plan that identifies and implements a variety of BMPs to further reduce the potential for erosion or sedimentation.

The proposed project would be required to connect to the sewer system and would not include the use of septic tanks or other alternative wastewater disposal systems that could be limited by local soils.

Impacts related to geology and soils would be less than significant with implementation of existing State of California and City of Sacramento regulations related to the design-controllable aspects of building foundation support, protection from seismic ground motion, and soil or slope instability. These regulations require that project designs reduce potential adverse soils, geology, and seismicity effects to less than significant levels. The project applicant must demonstrate that the project complies with applicable regulations before permits for project construction would be issued.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
6. <u>HAZARDS AND HAZARDOUS MATERIALS</u> Would the project:			
A) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities?			X
B) Expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials?			X
C) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

The Master EIR evaluated effects of development on hazardous materials, emergency response, and aircraft crash hazards (see Chapter 4.6). Implementation of the 2035 General Plan could result in the exposure of people to hazards and hazardous materials during construction activities, and exposure of people to hazards and hazardous materials during the life of the General Plan. Impacts identified related to construction activities and operations were found to be less than significant. Policies included in the 2035 General Plan, including PHS 3.1.1 (investigation of sites for contamination) and PHS 3.1.2 (preparation of hazardous materials actions plans when appropriate) were determined to reduce the identified impacts.

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- PHS 3.1.1 (Investigate Sites for Contamination)
- PHS 3.1.2 (Hazardous Materials Contamination Management Plan)
- PHS 3.1.3 (Household Hazardous Waste Collection Programs)
- PHS 3.1.4 (Transportation Routes)

Answers to Checklist Questions

Question A

There are no existing structures on the project site; therefore, the project would not require any demolition that could potentially expose workers or others to asbestos, lead paints, or other hazardous building materials. Furthermore, there are no known hazardous materials release sites on or in the vicinity of the project site (SWRCB 2015; DTSC 2015). Therefore, the project would not expose people to existing contaminated soil during construction activities.

Question B

The proposed project would develop housing on a site that is currently undeveloped. Residential uses, like those proposed for the site, do not typically use, store, or transport hazardous materials beyond small quantities of common household materials such as paints, cleaners, pesticides, gasoline, oil, and antifreeze. Residents would be required by law to use and store these materials in accordance with the product labels, and the City provides free drop-off locations for the proper disposal of household hazardous wastes (City of Sacramento Recycling and Solid Waste Division 2015). Diesel fuel, gasoline, oils, paints, and other common hazardous materials would be used during project construction activities. Contractors would also be required to use, store, and dispose of any hazardous materials in accordance with all applicable federal, state, and local regulations. As such, it is assumed that the presence of these materials on the project site would not create hazardous conditions or a risk of upset at the site or in the surrounding area, including at the school (currently vacant) located south of the project site. Therefore, this impact would be less than significant.

Question C

The project proposes the use of post-tensioned slabs or raised foundations for the homes, but would require some subsurface construction for the installation of on- and off-site utilities and building foundations. In the event that construction-related excavation would reach groundwater, dewatering may be required. However, dewatering would be short term and would comply with applicable requirements established by the Central Valley Regional Water Quality Control Board and be coordinated with the City's Flood Control and Sewer Division, which would ensure that potential effects would be less than significant.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
7. <u>HYDROLOGY AND WATER QUALITY</u> Would the project:			
A) Substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the project?			X
B) Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood?			X

Summary of Analysis under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

Chapter 4.7 of the Master EIR evaluates the potential effects of the 2035 General Plan as they relate to surface water, groundwater, flooding, stormwater, and water quality. Potential effects include water quality degradation due to construction and/or operational activities (Impact 4.7-1), generation of new sources of polluted runoff (Impact 4.7-2), and exposure of people to flood risks (Impact 4.7-3). Policies included in the 2035 General Plan, including a directive for regional cooperation (Policies ER 1.1.2 and EC 2.1.1), conservation of open space areas (Policy ER 1.1.1), control sources of stormwater pollution (Policies ER 1.1.3, 1.1.4, and 1.1.7), control of stormwater flow rates and velocities (Policies ER 1.1.5 and 1.1.6), comprehensive floodplain management (Policies EC 2.1.2 through 2.1.16), and construction of adequate drainage facilities with new development (Policy U 4.1.1), were identified to reduce all impacts to a less than significant level.

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- ER 1.1.3 (Stormwater Quality)
- ER 1.1.4 (New Development)
- ER 1.1.5 (Limit Stormwater Peak Flows)
- ER 1.1.6 (Post-Development Runoff)
- ER 1.1.7 (Construction Site Impacts)
- EC 2.1.3 (Interagency Levee Management)
- EC 2.1.11 (New Development)

Answers to Checklist Questions

Question A

Earth-moving activities and soil disturbance during project construction could affect water quality. The Master EIR includes a discussion of water quality and discharges of stormwater from sites within the city; that discussion is incorporated here by reference (see Master EIR page 6.7-13 et seq.). As discussed in the Master EIR, the applicant must comply with the point discharge requirements under the NPDES permits. As part of the project, the applicant would be required to moderate downstream flows of stormwater and to treat runoff from the site to improve water quality prior to its discharge to the stormwater system.

Requirements of the City's NPDES permit include measures in the grading plans to minimize erosion potential and water quality degradation for the project area. The purpose of the NPDES permit is to protect water quality from development areas that would discharge into a surface water body. As noted above, during construction of the project, the construction contractor must eliminate non-stormwater discharges to stormwater systems and must develop and implement a SWPPP and perform monitoring of discharges to stormwater systems. The City uses a set of BMPs for both pre- and post-construction periods, which would be applied to the project. The City's Department of Utilities enforces compliance with the City's BMP requirements. The contractor would identify the appropriate BMPs in coordination with the City's Department of Utilities for the proposed project. These requirements would ensure a less than significant impact to water quality resulting from project construction.

The City's grading ordinance (City Code Chapter 15.88) regulates development conditions to prevent erosion and prevents pollution of watercourses with sediments and other materials. In addition, the City's Department of Utilities implements policies and guidelines regulating grading, erosion control, stormwater drainage design, inspection, and permitting for grading and construction.

Pursuant to City of Sacramento Municipal Code Section 13.08.145(a), the project would be required to mitigate all stormwater and surface runoff drainage impacts to ensure that development of the site does not affect the function of the storm drain system and that there is no increase in flooding or in water surface elevation that could result in adverse affects on other properties. Therefore, potential effects related to increased flows from the project site would be reduced to less than significant with compliance with this existing code provision.

Question B

The portion of the site that contains the levee and adjacent access/maintenance easement ("Lot B") is designated by the Federal Emergency Management Agency (FEMA) as Zone AE, which is defined as an area subject to inundation by the 1-percent-annual-chance flood event. This portion of the site is not proposed for any development. The remainder of the project site is designated Zone X (shaded), indicating that the site is protected from the 1-percent-annual-chance flood by a levee (FEMA 2012, 2015). Based on this designation, the project would not substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood. Development of the site would not result in any new significant environmental effect.

Furthermore, implementation of General Plan Policy ER 1.1.5 would ensure that no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event would occur. Therefore, project implementation would not result in on- or off-site flooding and

would not exceed the capacity of the City's storm drain system. This impact would be less than significant.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
8. NOISE Would the project:			
A) Result in exterior noise levels in the project area that are above the upper value of the normally acceptable category for various land uses due to the project's noise level increases?			X
B) Result in residential interior noise levels of 45 dBA L _{dn} or greater caused by noise level increases due to the project?			X
C) Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance?			X
D) Permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction?			X
E) Permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations?			X
F) Permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to project construction and highway traffic?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

The Master EIR evaluated the potential for development under the 2035 General Plan to increase noise levels in the community. New noise sources include vehicular traffic, aircraft, railways, light rail, and stationary sources. Notwithstanding application of the General Plan policies, noise impacts for exterior noise levels (Impact 4.8-1) and interior noise levels (Impact 4.8-2) and vibration impacts (Impact 4.8-4) were found to be significant and unavoidable.

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- Policy EC 3.1.1 (Exterior Noise Standards)
- Policy EC 3.1.2 (Exterior Incremental Noise Standards)
- Policy EC 3.1.3 (Interior Noise Standards)
- Policy EC 3.1.4 (Interior Noise Review for Multiple, Loud Short-Term Events)
- Policy EC 3.1.5 (Interior Vibration Standards)
- Policy EC 3.1.6 (Effects of Vibration)

- Policy EC 3.1.7 (Vibration)
- Policy EC 3.1.8 (Operational Noise)
- Policy EC 3.1.9 (Compatibility with Park and Recreation Uses)
- Policy EC 3.1.10 (Construction Noise)
- Policy EC 3.1.11 (Alternatives to Sound Walls)
- Policy EC 3.2.1 (Land Use Compatibility)
- Policy EC 3.2.2 (Hazardous Noise Protection)
- Policy LU 2.7.5 (Development along Freeways)
- Policy M 7.1.4 (Train Noise Minimization)
- Policy M 7.1.6 (Truck Traffic Noise Minimization)

Answers to Checklist Questions

Questions A–C

Construction activities associated with the proposed project would generate noise due to grading and construction activities. This increase in noise would be temporary, ceasing upon project completion. The City of Sacramento Noise Ordinance (City Code Title 8, Chapter 8.68 et seq.) exempts construction-related noise if the construction takes place between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday. Operations outside of these hours would be subject to the limits set forth in the ordinance. The Master EIR found that compliance with the General Plan Policy EC 3.1.10 and the City Code would reduce the severity of construction noise to less than significant.

The project consists of the construction of seven single-family residences and associated improvements. Therefore, once completed, the project would generate noise levels consistent with the surrounding residential development and would not exceed applicable standards. Furthermore, operation of the project would generate a negligible increase in traffic on area roadways and would not significantly increase traffic noise.

The school facility immediately south of the project site is currently vacant. However, should the site be reopened, its operation could generate noise at the property line of the proposed residences that could exceed City standards. The school facility would be anticipated to operate primarily during daytime hours and on weekdays. In addition, there is an existing concrete block wall along the project site's southern boundary adjacent to the school site that would reduce noise levels. Therefore, operational noise impacts would be less than significant.

Questions D–F

Table 3 shows typical vibration levels from representative construction equipment. The project site is relatively level, and no buildings have been proposed that would require unusual construction techniques, such as pile driving, that would cause substantial vibration. No operations have been proposed that could generate substantial levels of vibration. There would not be a significant environmental effect related to vibration.

Table 3
Representative Construction Equipment Vibration Levels

Equipment		Peak Particle Velocity at 25 Feet (in/sec)
Pile Driver (Impact)	Upper Range	1.518
	Typical	0.644
Pile Driver (Sonic)	Upper Range	0.734
	Typical	0.170
Hoe Ram		0.089
Caisson Drill		0.089
Large Bulldozers		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozers		0.003

Source: FTA 2006; Caltrans 2004

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
9. PUBLIC SERVICES			
Would the project result in the need for new or altered services related to fire protection, police protection, school facilities, roadway maintenance, or other governmental services beyond what was anticipated in the 2035 General Plan?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

The Master EIR evaluated the potential effects of the 2035 General Plan on various public services including parks (Chapter 4.9) and police, fire protection, schools, libraries, and emergency services (Chapter 4.10).

The Master EIR found that impacts related to parks would be reduced to less than significant with implementation of Implementation Programs 2 and 3, which require review and update of the City’s Park Development Impact Fee Program to ensure that it addresses existing facility rehabilitation and renovation and anticipated parkland land acquisition and construction costs.

The Master EIR found that impacts related to police protection services would be less than significant with implementation of General Plan Policies PHS 1.1.1 through PHS 1.1.7 and Policy PHS 1.1.12 (Impact 4.10-1). Specifically, Policy PHS 1.1.1 calls for the City to prepare a Police Master Plan to address staffing needs, facility needs, deployment strategies, and service goals. Policy PHS 1.1.4 mandates that the City keep pace with all development and growth within the city and that adequate facilities and staffing are available to serve residents prior to occupation of new development.

Implementation of General Plan Policies PHS 2.1.1 through PHS 2.1.7, PHS 2.1.10, PHS 2.2.4, PHS 2.2.7, and PHS 2.2.8 would ensure a less than significant impact related to fire protection services (Impact 4.10-2). Policy PHS 2.1.1 calls for the City to prepare a Fire Strategic Plan. The plan would be the guiding document for the provision of fire services in the city. Policies PHS 2.1.2 and PHS 2.1.3 require that the City maintain emergency response times and staffing levels to ensure optimal fire protection in the community. Policy PHS 2.1.4 further requires additional fire protection resources be supplied when a fire station/company experiences call volumes exceeding 3,500 in a year, and Policy PHS 2.1.6 requires that new fire stations are located strategically throughout the city to provide optimum response times to all areas. Policies PHS 2.1.5 and PHS 2.1.7 require new development to set aside land for future fire stations and ensure that adequate fire protection and emergency medical response facilities, equipment, and staffing are available prior to occupation of new development and redevelopment areas. PHS 2.2.4 ensures that adequate water supplies, pressure, and infrastructure are available in infill and newly developing areas.

Policies PHS 2.2.7 and PHS 2.2.8 require that the City work to inform the Sacramento Fire Department of potential wildland risks and impose a method to increase fire prevention. In addition, Policy PHS 2.1.10 requires that the City work with other agencies to provide regional cooperative delivery of fire protection and emergency medical services.

Impacts on schools were determined to be less than significant with implementation of Policies ERC 1.1.1 through ERC 1.1.3 (Impact 4.10-3) by ensuring that adequate school facilities are provided to serve the anticipated student growth in the city. Those policies, along with the payment of statutory fees by developers under Senate Bill 50, are deemed complete CEQA mitigation to satisfy the impact of development on school facilities.

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- ERC 2.1.1 (Complete System)
- ERC 2.2.1 (Parks and Recreation Master Plan)
- ERC 2.2.2 (Timing of Service)
- ERC 2.2.3 (Service Level Radius)
- ERC 2.2.4 ((Park Acreage Service Level)
- ERC 2.2.5 (Meeting Service Level Goal)
- ERC 2.2.6 (Urban Park Facility Improvements)
- PHS 1.1.1 (Police Master Plan)
- PHS 1.1.2 (Response Time Standards)
- PHS 1.1.3 (Staffing Standards)
- PHS 1.1.4 (Timing of Services)
- PHS 1.1.7 (Development Review)
- PHS 1.1.8 (Development Fees for Facilities and Services)
- PHS 2.1.1 (Fire Department Strategic Plan)
- PHS 2.1.2 (Response Time Standards)
- PHS 2.1.3 (Staffing Standards)
- PHS 2.1.4 (Response Units and Facilities)
- PHS 2.1.5 (Timing of Services)
- PHS 2.1.11 (Development Fees for Facilities and Services)
- PHS 2.2.2 (Development Review)
- PHS 2.2.4 (Water Supply for Fire Suppression)
- PHS 2.2.9 (Development Review for Emergency Response)

Answers to Checklist Questions

The proposed project is consistent with the General Plan and land use designation for the project site. Impacts of development that could be anticipated pursuant to the General Plan were evaluated in the Master EIR. Cumulative effects of development on public services were discussed and evaluated. See Master EIR Chapter 4.10.

Fire and Police Protection

The project site is served by the City of Sacramento Police and Fire departments. All proposed structures would be constructed consistent with the current Uniform Building Code with regard to fire prevention and safety. In addition, the site would be served with adequate water capacity to support fire suppression action if required. Although the project could result in increased calls for fire and/or police protection services, such increases would be negligible due to the project's small size and were anticipated in the Master EIR as part of buildout associated with the General Plan. No new or expanded facilities would be required to serve the project. Therefore, this impact would be less than significant.

Schools

The project site is located within the boundaries of the Sacramento City Unified School District (SCUSD). The SCUSD serves 43,175 students on 75 campuses with a service area spanning 76 square miles (SCUSD 2015). The proposed project would allow the development of seven new single-family residential units, generating additional students who could attend SCUSD schools. Based on the SCUSD's current student generation rates for single-family residential development (SCUSD 2012), the project would generate approximately six new students (three in grades K–6; one in grades 7–8; and two in grades 9–12). This would not represent a significant increase in school enrollment and would not require new or expanded school facilities.

California Government Code Section 65995(h) states that “the payment or satisfaction of a fee, charge or other requirement levied or imposed... [is] deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization as defined in Section 56021 or 56073, on the provision of adequate school facilities.” The proposed project would be subject to the SCUSD residential fee in place at the time an application is submitted for a building permit, and under CEQA, payment of this fee is considered to mitigate the need for school facilities generated by project implementation. Therefore, this impact would be less than significant.

Parks

The project would result in a negligible increase in the city's overall population and would not by itself result in the need for new or expanded parks. Regardless, the addition of new residents would contribute to a cumulative increase in demand for parks and other recreational facilities. The project is consistent with the General Plan and the site's land use designation. Therefore, this increase was anticipated in the Master EIR. Furthermore, the City has implemented development fees that are used to support parks and recreational facilities in the community. Payment of the impact fees would be required at the time of application for building permits as outlined in Chapter 18.44 of the City Code and would help fund new park construction in response to growth. Therefore, this impact would be less than significant.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
Issues:			
10. <u>RECREATION</u> Would the project:			
A) Cause or accelerate substantial physical deterioration of existing area parks or recreational facilities?			X
B) Create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2035 General Plan?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

Chapter 4.9 of the Master EIR considered the effects of the 2035 General Plan on the city’s existing parkland, urban forest, recreational facilities, and recreational services. The General Plan identified a goal of providing an integrated park and recreation system in the city (Goal ERC 2.1). New residential development will be required to dedicate land, pay in-lieu fees, or otherwise contribute a fair share to the acquisition and development of parks and recreation facilities (Policy ERC 2.2.5). Impacts were considered less than significant after application of the applicable policies (Impacts 4.9-1 and 4.9-2).

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- ERC 2.1.1 (Complete System)
- ERC 2.2.1 (Parks and Recreation Master Plan)
- ERC 2.2.2 (Timing of Service)
- ERC 2.2.3 (Service Level Radius)
- ERC 2.2.4 (Park Acreage Service Level)
- ERC 2.2.5 (Meeting Service Level Goal)
- ERC 2.2.6 (Urban Park Facility Improvements)

Answers to Checklist Questions

Questions A and B

As described previously, the project would result in a negligible increase in the city’s overall population and would not by itself result in substantial deterioration of any existing park or require the construction of new or expanded parks. The project is consistent with the General Plan and the project site’s land use designation; demand for parks and recreations from the site was therefore anticipated in the Master EIR. Furthermore, the City has implemented development fees that are used to support parks and recreational facilities in the community. Payment of the impact fees would be required at the time of application for building permits as

outlined in Chapter 18.44 of the City Code and would help fund new park construction in response to cumulative growth. Therefore, this impact would be less than significant.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
11. TRANSPORTATION AND CIRCULATION Would the project:			
A) Roadway segments: degrade peak period level of service (LOS) from A, B, C, or D (without the project) to E or F (with project) or the LOS (without project) is E or F, and project-generated traffic increases the volume to capacity ratio (V/C ratio) by 0.02 or more?			X
B) Intersections: degrade peak period level of service from A, B, C, or D (without project) to E or F (with project) or the LOS (without project) is E or F, and project-generated traffic increases the peak period average vehicle delay by five seconds or more?			X
C) Freeway facilities: off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway; project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service; project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or the expected ramp queue is greater than the storage capacity?			X
D) Transit: adversely affect public transit operations or fail to adequately provide for access to public?			X
E) Bicycle facilities: adversely affect bicycle travel, bicycle paths or fail to adequately provide for access by bicycle?			X
F) Pedestrian: adversely affect pedestrian travel, pedestrian paths or fail to adequately provide for access by pedestrians?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

Transportation and circulation were discussed in the Master EIR in Chapter 4.12. Various modes of travel were included in the analysis, including vehicular, transit, bicycle, pedestrian, and aviation components. The analysis included consideration of roadway capacity and identification of levels of service, as well as the effects of the 2035 General Plan on the public transportation system. Provisions of the 2035 General Plan that provide substantial guidance include Goal Mobility 1.1 calling for a transportation system that is effectively planned, funded, managed, operated, and maintained; promotion of multimodal choices (Policy M 1.2.1); identification of level of service standards (Policy M 1.2.2); a requirement to work with Caltrans and adjacent jurisdictions to identify funding for improvements (Policy M 1.5.7); and development of complete streets (Goal M 4.2).

While the General Plan includes numerous policies that direct the development of the city's transportation system, the Master EIR concluded that the General Plan development would result in significant and unavoidable effects. See Impacts 4.12-3 (roadway segments) and 4.12-4 (freeway segments).

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- M 1.1.2 (Transportation System): The City shall manage the travel system to ensure safe operating conditions.
- M 1.1.4 (Facilities and Infrastructure): The City shall effectively operate and maintain transportation facilities and infrastructure to preserve the quality of the system.
- M 1.2.2 (LOS Standard): The City shall implement a flexible context- sensitive Level of Service (LOS) standard, and will measure traffic operations against the vehicle LOS thresholds established in this policy. The City will measure Vehicle LOS based on the methodology contained in the latest version of the Highway Capacity Manual (HCM) published by the Transportation Research Board. The City's specific vehicle LOS thresholds have been defined based on community values with respect to modal priorities, land use context, economic development, and environmental resources and constraints. As such, the City has established variable LOS thresholds appropriate for the unique characteristics of the City's diverse neighborhoods and communities. The City will strive to operate the roadway network at LOS D or better for vehicles during typical weekday conditions, including AM and PM peak hour with the following exceptions described below and mapped on Figure M-1:

A. Core Area (Central City Community Plan Area) - LOS F allowed

B. Priority Investment Areas – LOS F allowed

C. LOS E Roadways - LOS E is allowed for the following roadways because expansion of the roadways would cause undesirable impacts or conflict with other community values.

- 65th Street: Elvas Avenue to 14th Avenue
- Arden Way: Royal Oaks Drive to I-80 Business
- Broadway: Stockton Boulevard to 65th Street
- College Town Drive: Hornet Drive to La Rivera Drive
- El Camino Avenue: I-80 Business to Howe Avenue
- Elder Creek Road: Stockton Boulevard to Florin Perkins Road
- Elder Creek Road: South Watt Avenue to Hedge Avenue
- Fruitridge Road: Franklin Boulevard to SR 99
- Fruitridge Road: SR 99 to 44th Street
- Howe Avenue: El Camino Avenue to Auburn Boulevard
- Sutterville Road: Riverside Boulevard to Freeport Boulevard

LOS E is also allowed on all roadway segments and associated intersections located within ½ mile walking distance of light rail stations.

D. Other LOS F Roadways - LOS F is allowed for the following roadways because expansion of the roadways would cause undesirable impacts or conflict with other community values.

- 47th Avenue: State Route 99 to Stockton Boulevard
- Arcade Boulevard: Marysville Boulevard to Roseville Road
- Carlson Drive: Moddison Avenue to H Street
- El Camino Avenue: Grove Avenue to Del Paso Boulevard
- Elvas Avenue: J Street to Folsom Boulevard
- Elvas Avenue/56th Street: 52nd Street to H Street
- Florin Road: Havenside Drive to Interstate 5
- Florin Road: Freeport Boulevard to Franklin Boulevard
- Florin Road: Interstate 5 to Freeport Boulevard
- Folsom Boulevard: 47th Street to 65th Street
- Folsom Boulevard: Howe Avenue to Jackson Highway
- Folsom Boulevard: US 50 to Howe Avenue
- Freeport Boulevard: Sutterville Road (North) to Sutterville Road (South)
- Freeport Boulevard: 21st Street to Sutterville Road (North)
- Freeport Boulevard: Broadway to 21st Street
- Garden Highway: Truxel Road to Northgate Boulevard
- H Street: Alhambra Boulevard to 45th Street
- H Street 45th: Street to Carlson Drive
- Hornet Drive: US 50 Westbound On-ramp to Folsom Boulevard
- Howe Avenue: US 50 to Fair Oaks Boulevard
- Howe Avenue: US 50 to 14th Avenue
- Raley Boulevard: Bell Avenue to Interstate 80
- South Watt Avenue: US 50 to Kiefer Boulevard
- West El Camino Avenue: Northgate Boulevard to Grove Avenue

E. If maintaining the above LOS standards would, in the City's judgment be infeasible and/or conflict with the achievement of other goals, LOS E or F conditions may be accepted provided that provisions are made to improve the overall system, promote non-vehicular transportation, and/or implement vehicle trip reduction measures as part of a development project or a city initiated project. Additionally, the City shall not expand the physical capacity of the planned roadway network to accommodate a project beyond that identified in Figure M4 and M4a (2035 General Plan Roadway Classification and Lanes).

- M 1.2.3 (Transportation Evaluation): The City shall evaluate discretionary projects for potential impacts to traffic operations, traffic safety, transit service, bicycle facilities, and pedestrian facilities, consistent with the City's Traffic Study Guidelines.

Standards of Significance

For purposes of this Initial Study, impacts resulting from changes in transportation or circulation may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

Roadway Segments

- the traffic generated by a project degrades peak period Level of Service (LOS) from A,B,C or D (without the project) to E or F (with project) or
- the LOS (without project) is E or F, and project generated traffic increases the Volume to Capacity Ratio (V/C ratio) by 0.02 or more.

Intersections

- the traffic generated by a project degrades peak period level of service from A, B, C or D (without project) to E or F (with project) or
- the LOS (without project) is E or F, and project generated traffic increases the peak period average vehicle delay by five seconds or more.

Freeway Facilities

Caltrans considers the following to be significant impacts.

- off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway;
- project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service;
- project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or
- the expected ramp queue is greater than the storage capacity.

Transit

- adversely affect public transit operations or
- fail to adequately provide for access to public transit.

Bicycle Facilities

- adversely affect bicycle travel, bicycle paths or
- fail to adequately provide for access by bicycle.

Pedestrian Circulation

- adversely affect pedestrian travel, pedestrian paths or
- fail to adequately provide for access by pedestrians.

Answers to Checklist Questions

Questions A–C

None of the roadways in the project vicinity are identified in the 2035 General Plan as operating at an unacceptable level of service (LOS E or F) (City of Sacramento 2015).

As described previously, the project would allow construction of seven single-family residences. Based upon information gathered by the Institute of Transportation Engineers (ITE) *Trip Generation, 9th Edition* the project would generate 91 daily vehicle trips including 15 trips during the AM peak hour and 10 trips during the PM peak hour. The General Plan Master EIR considered development of the site with residential uses. Because the project site contains constraints to development of a portion of the property, the intensity of development and thus the number of trips generated on the site would be less than assumed in the Master EIR. Furthermore, as the roadways in the project vicinity have sufficient capacity, the addition of project trips would not be expected to result in any significant impacts on traffic operations.

Question D

The project area is served by the Sacramento Regional Transit District. The project would not adversely affect existing or planned transit operations. Furthermore, project demand for public transit is expected to be low and could be readily accommodated by the existing transit service. Therefore, project impacts to public transit would be less than significant.

Questions E and F

The project would not adversely affect existing or planned pedestrian or bicycle facilities. Sidewalks and bicycle lanes are currently provided along Pocket Road adjacent to the project site. The existing sidewalk would be extended onto the project site, thereby enhancing pedestrian access. The existing bicycle lane would continue to operate along Pocket Road. Traffic entering and leaving the site could create potential conflicts between vehicles and pedestrians/cyclists traveling along Pocket Road. However, project traffic would be minimal, peaking at 15 trips during the AM peak hour, and would be controlled by a stop sign. Therefore, this impact would be less than significant.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
12. UTILITIES AND SERVICE SYSTEMS			
Would the project:			
A) Result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments?			X
B) Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts?			X

Summary of Analysis Under the 2035 General Plan Master EIR, Including Cumulative Impacts, Growth-Inducing Impacts, and Irreversible Significant Effects

The Master EIR evaluated the effects of development under the 2035 General Plan on water supply, sewer, storm drainage, solid waste, electricity, natural gas, and telecommunications. See Master EIR Chapter 4.11.

The Master EIR evaluated the impacts of increased demand for water that would occur with development under the 2035 General Plan (see Impact 4.11-1). The Master EIR determined that, with implementation of General Plan policies requiring water conservation, sufficient water supplies would be available even during multiple dry years and the impact would be less than significant. Even with implementation of policies in the General Plan, the impact related to water treatment capacity was found to be significant and unavoidable (see Impact 4.11-2).

The potential need for expansion of wastewater and stormwater conveyance (Impact 4.11-3) and treatment (Impact 4.11-4) facilities was identified as having a less than significant impact. Impacts on solid waste facilities were also identified as less than significant (Impact 4.11-5).

Mitigation Measures from 2035 General Plan Master EIR That Apply to the Project

General Plan Policies Considered Mitigation

- U 1.1.1 (Provision of Adequate Utilities)
- U 1.1.4 (Timing of Urban Expansion)
- U 1.1.5 (Growth and Level of Service)
- U 2.1.2 (Increase Water Supply Sustainability)
- U 2.1.3 (Water Treatment Capacity and Infrastructure)
- U 2.1.5 (Comprehensive Water Supply Plans)
- U 2.1.9 (New Development)
- U 2.1.10 (Water Conservation Standards)
- U 2.1.11 (Water Conservation Programs)

- U 2.1.15 (Landscaping)
- U 2.1.18 (Future Water Supply)
- U 3.1.1 (Sufficient Service)
- U 3.1.2 (New Developing Areas)
- U 4.1.1 (Adequate Drainage Facilities)
- U 4.1.2 (Master Planning)
- U 4.1.6 (New Development)
- U 5.1.2 (Landfill Capacity)
- U 5.1.3 (Transfer Stations)
- ER 1.1.5 (Limit Stormwater Peak Flows)
- ER 1.1.6 (Post-Development Runoff)

Answers to Checklist Questions

Questions A and B

As described previously, the project would connect to an existing 12-inch water main and 6-inch sewer main located in Pocket Road immediately east of the project site. The project would also connect to existing storm drainage infrastructure located in Pocket Road.

The project's anticipated demand for potable water supply would be approximately 6 acre-feet per year², which is approximately 0.004 percent of the city's total projected 2035 water demand of 171,100 acre-feet per year (City of Sacramento Department of Utilities 2011) and would be considered a negligible increase. Wastewater generated by the project would result in a comparably minor increase in demand for treatment. Consistent with General Plan Policy ER 1.1.5, the project would contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event. Therefore, project runoff would not exceed the capacity of the existing storm drain system that currently serves the site.

The project proposes uses that are consistent with the 2035 General Plan land use designation for the project site. The proposed density of the project would be less than that envisioned in the General Plan and analyzed in the Master EIR. Therefore, the increased demand for public utilities resulting from project implementation was assumed in the Master EIR, which determined that sufficient water supplies, wastewater and stormwater treatment capacity, and landfill capacity are available to serve development consistent with the 2035 General Plan. Therefore, with implementation of General Plan policies, these impacts would be less than significant.

The Master EIR determined that impacts related to water diversion and treatment capacity would be significant and unavoidable. However, the proposed project would not result in a new or more severe impact than that identified in the Master EIR.

² Based on the City's base daily per capita water use of 279 gallons per capita (City of Sacramento Department of Utilities 2011, p. 3-3)

The project proposes the construction of infrastructure on the project site and associated connections to existing infrastructure in the adjacent roadway. Impacts associated with construction of these improvements are assumed as part of the project and are addressed throughout this Initial Study. Potential impacts include disturbance of biological and/or cultural resources, temporary air emissions, soil erosion and water quality degradation, handling of hazardous materials, temporary construction noise, and temporary construction traffic. This impact would be less than significant.

Mitigation Measures

None required.

Findings

With implementation of identified General Plan policies, the project would have no new or additional project-specific significant environmental effects that were not analyzed in the Master EIR. This topic will not be addressed further in the EIR.

MANDATORY FINDINGS OF SIGNIFICANCE

Issues:	Effect remains significant with all identified mitigation	Effect can be mitigated to less than significant	No additional significant environmental effect
13. MANDATORY FINDINGS OF SIGNIFICANCE			
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?	X		
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.)			X
C.) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X

Answers to Checklist Questions

Question A

As discussed above, mitigation measures have been incorporated into this Initial Study to ensure the project would not 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. However, the proposed project includes an area that is known to contain prehistoric resources that could be negatively affected by project construction and occupancy. This topic will be addressed further in the EIR.

Question B

The proposed project is consistent with the General Plan land use designation and zoning for the project site. The development proposed would contribute to cumulative effects that have been identified and evaluated in the Master EIR prepared and certified for the 2035 General Plan. No additional significant cumulative effects have been identified for the project. This topic will not be addressed further in the EIR.

Question C

The proposed project would develop the project site with residential uses. The activities associated with occupancy of residences would not typically adversely affect human beings. Project impacts relating to air quality and hazards have been considered in the Initial Study. No significant adverse effects on human beings have been identified. This topic will not be addressed further in the EIR.

Section IV – Environmental Factors Potentially Affected

The environmental factors checked below would potentially be affected by this project.

- | | | |
|--------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Hydrology & Water Quality | <input type="checkbox"/> Transportation & Circulation |
| <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Light & Glare | <input type="checkbox"/> Utilities & Service Systems |
| <input type="checkbox"/> Geology & Soils | <input type="checkbox"/> Noise | <input checked="" type="checkbox"/> Mandatory Findings of Significance |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Public Services | |

Section V – Determination
On the basis of the Initial Study:

- I find that (a) the proposed project is an anticipated subsequent project identified and described in the 2035 General Plan Master EIR; (b) the proposed project is consistent with the 2035 General Plan land use designation and the permissible densities and intensities of use for the project site; (c) the discussions of cumulative impacts, growth-inducing impacts, and irreversible significant effects in the Master EIR are adequate for the proposed project; and (d) the proposed project may have additional significant environmental effects not previously examined in the Master EIR. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed (CEQA Guidelines Section 15178(c)).

Signature

Date

Printed Name

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Appendix A – Bio



Plant List

7 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 38121D5

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	2B.1	S2	G5
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	4.2	S3	G3T3
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb	1B.2	S2	G5T2
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	1B.1	S1	G1
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	1B.2	S2	G4T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

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Plant List

4 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 38121E5

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	1B.1	S1	G2T1
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	4.2	S3	G3T3
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb	1B.2	S2	G5T2
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [accessed 23 January 2015].

Search the Inventory

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Information

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1mi

Occurrence Count	Scientific Name	Common Name	Federal Listing	State Listing	Rare Plant Rank
3	<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	
1	<i>Oncorhynchus mykiss irideus</i>	steelhead - Central Valley DPS	Threatened	None	
1	<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	None	None	
1	<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened	

5mi

Occurrence Count	Scientific Name	Common Name	Federal Listing	State Listing	Rare Plant Rank
1	<i>Agelaius tricolor</i>	tricolored blackbird	None	Endangered	
1	<i>Archoplites interruptus</i>	Sacramento perch	None	None	
1	<i>Ardea alba</i>	great egret	None	None	
1	<i>Ardea herodias</i>	great blue heron	None	None	
6	<i>Athene cunicularia</i>	burrowing owl	None	None	
2	<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Threatened	None	
1	<i>Buteo regalis</i>	ferruginous hawk	None	None	
64	<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	
1	<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Threatened	Endangered	
2	<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None	
1	<i>Emys marmorata</i>	western pond turtle	None	None	
2	<i>Falco columbarius</i>	merlin	None	None	
2	<i>Hibiscus lasiocarpus var. occidentalis</i>	woolly rose-mallow	None	None	1B.2
1	<i>Juglans hindsii</i>	Northern California black walnut	None	None	1B.1
4	<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	Endangered	None	
1	<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	None	Rare	1B.1
2	<i>Linderiella occidentalis</i>	California linderiella	None	None	
5	<i>Melospiza melodia</i>	song sparrow ("Modesto" population)	None	None	
3	<i>Oncorhynchus mykiss irideus</i>	steelhead - Central Valley DPS	Threatened	None	
2	<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	
1	<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	None	None	
1	<i>Progne subis</i>	purple martin	None	None	
4	<i>Sagittaria sanfordii</i>	Sanford's arrowhead	None	None	1B.2
1	<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened	
3	<i>Thamnophis gigas</i>	giant garter snake	Threatened	Threatened	
1	<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered	Endangered	
1	<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	None	None	

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 150123014005

Current as of: January 23, 2015

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio*
Conservancy fairy shrimp (E)
- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense*
California tiger salamander, central population (T)
- Rana draytonii*
California red-legged frog (T)

Reptiles

- Thamnophis gigas*
giant garter snake (T)

Birds

- Coccyzus americanus occidentalis*
Western yellow-billed cuckoo (T)
- Vireo bellii pusillus*
Least Bell's vireo (E)

Quads Containing Listed, Proposed or Candidate Species:

CLARKSBURG (497A)
SACRAMENTO WEST (513D)

County Lists

Sacramento County

Listed Species

Invertebrates

Apodemia mormo langei

Lange's metalmark butterfly (E)

Branchinecta conservatio

Conservancy fairy shrimp (E)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

Critical habitat, valley elderberry longhorn beetle (X)

valley elderberry longhorn beetle (T)

Elaphrus viridis

delta green ground beetle (T)

Incisalia mossii bayensis

San Bruno elfin butterfly (E)

Lepidurus packardi

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris

green sturgeon (T) (NMFS)

Hypomesus transpacificus

Critical habitat, delta smelt (X)

delta smelt (T)

Oncorhynchus mykiss

Central Valley steelhead (T) (NMFS)

Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)

Critical Habitat, Central Valley spring-run chinook (X) (NMFS)

Critical habitat, winter-run chinook salmon (X) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Vireo bellii pusillus
Least Bell's vireo (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Sylvilagus bachmani riparius
riparian brush rabbit (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Arctostaphylos myrtifolia
Ione manzanita (T)

Calystegia stebbinsii
Stebbins's morning-glory (E)

Castilleja campestris ssp. *succulenta*
Critical habitat, succulent (=fleshy) owl's-clover (X)
succulent (=fleshy) owl's-clover (T)

Ceanothus roderickii
Pine Hill ceanothus (E)

Cordylanthus mollis ssp. *mollis*
soft bird's-beak (E)

Cordylanthus palmatus

palmate-bracted bird's-beak (E)

Eriogonum apricum var. *apricum*
Ione buckwheat (E)

Eriogonum apricum var. *prostratum*
Irish Hill buckwheat (E)

Erysimum capitatum ssp. *angustatum*
Contra Costa wallflower (E)
Critical Habitat, Contra Costa wallflower (X)

Fremontodendron californicum ssp. *decumbens*
Pine Hill flannelbush (E)

Galium californicum ssp. *sierrae*
El Dorado bedstraw (E)

Lasthenia conjugens
Contra Costa goldfields (E)

Neostapfia colusana
Colusa grass (T)

Oenothera deltooides ssp. *howellii*
Antioch Dunes evening-primrose (E)
Critical habitat, Antioch Dunes evening-primrose (X)

Orcuttia tenuis
Critical habitat, slender Orcutt grass (X)
slender Orcutt grass (T)

Orcuttia viscida
Critical habitat, Sacramento Orcutt grass (X)
Sacramento Orcutt grass (E)

Senecio layneae
Layne's butterweed (=ragwort) (T)

Sidalcea keckii
Keck's checker-mallow (=checkerbloom) (E)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) *Vacated* by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.
During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The

Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 23, 2015.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

May 28, 2014



Regulatory Division (SPK-2014-00075)

B&B Homes
Attn: Ms. Katherine Bardis
10630 Mather Boulevard
Mather, California 95655

Dear Ms. Bardis:

We are responding to your May 5, 2014, submittal of the August 30, 2013, *Preliminary Evaluation of the 7446 Pocket Road Property*, prepared by Gibson & Skordal, LLC for the Azores property. The approximately 2.8-acre site is located Assessor's Parcel Number (APN) 031-0030-001-0000, at 7446 Pocket Road, in Section 10, Township 7 North, Range 4 East, Mount Diablo Meridian, Latitude 38.48643° North, Longitude 121.54873° West, in the City of Sacramento, Sacramento County, California.

Based on available information, we concur with the August 30, 2013, Preliminary Evaluation, and have determined that no waters of the U.S. occur within the review area identified on the enclosed *Figure 1, Vicinity Map*. Therefore, a Department of the Army Permit is not required for the proposed work on the site.

This verification is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331.

A Notification of Appeal Process (NAP) and Request for Appeal (RFA) form is enclosed. If you request to appeal this determination you must submit a completed RFA form to the South Pacific Division Office at the following address: Administrative Appeal Review Officer, Army Corps of Engineers, South Pacific Division, CESPDPDO, 1455 Market Street, 2052B, San Francisco, California 94103-1399, Telephone: 415-503-6574, FAX: 415-503-6646.

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the NAP. Should you decide to submit an RFA form, it must be received at the above address by 60 days from the date of this letter. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This determination has been conducted to identify the limits of Corps of Engineers' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2014-00075 in any correspondence concerning this project. If you have any questions, please contact me at 1325 J Street, Room 1350, Sacramento, California 95814, by email at Lisa.M.Gibson2@usace.army.mil, or by telephone at 916-557-5288. For more information regarding our program, please visit our website at www.spk.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,



Lisa M. Gibson
Senior Project Manager, CA South Branch
Regulatory Division

Enclosure

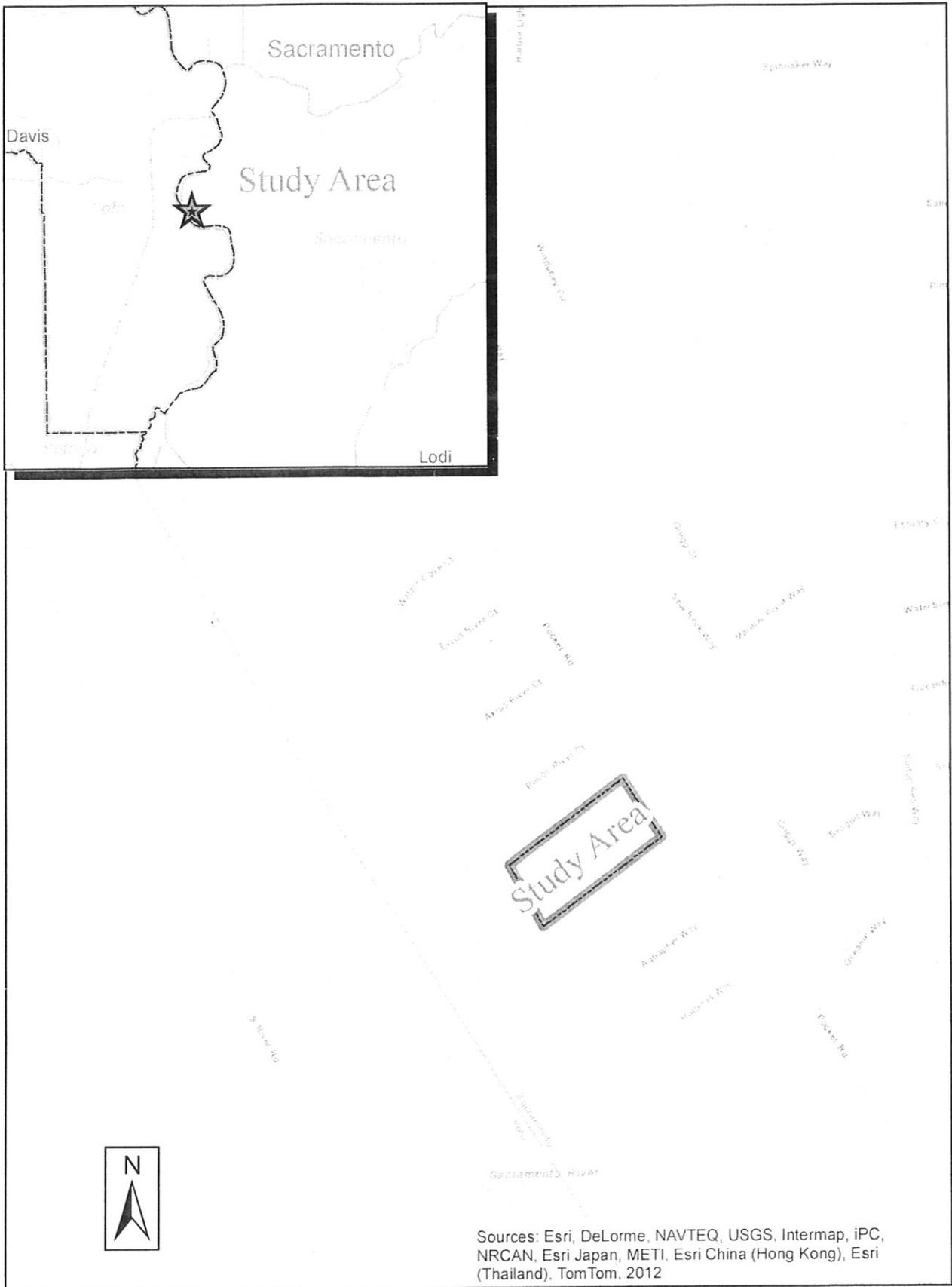
cc: (w/o encl)

Ms. Leana Rosetti, U.S. Environmental Protection Agency, Region IX, Wetlands Regulatory Office (WTR-8), 75 Hawthorne Street, San Francisco, California 94105-3901

Ms. Tina Bartlett, California Department of Fish and Wildlife, Region 2, 1701 Nimbus Road, Rancho Cordova, California 95670-4599

Ms. Elizabeth Lee, Storm Water and Water Quality Certification Unit, Central Valley Regional Water Quality Control Board, 11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114

Ms. Kellie Berry, Sacramento Valley Branch, Endangered Species Division, U.S. Fish and Wildlife Service, 2800 Cottage Way, Suite W2605, Sacramento, California 95825-3901



NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: B&B Homes

File No.: SPK-2014-00075

Date: May 7, 2014

Attached is:

See Section below

	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

**ARBORIST REPORT
AND
TREE INVENTORY SUMMARY**

**7446 POCKET ROAD
APN # 031-0030-001-0000
PROJECT SITE
City of Sacramento, California**

Prepared for:

**B&B HOMES LLC
Attn: Ms. Rachel Bardis
10630 Mather Boulevard
Mather, California 95655**

Prepared by:

**Edwin E. Stirtz
ISA Certified Arborist WE-0510A
Member, American Society of Consulting Arborists**



**SIERRA NEVADA ARBORISTS
5150 Fair Oaks Boulevard
Suite 101-313
Carmichael, California 95608**

May 8, 2013

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COPYRIGHT STATEMENT

This consultant's report, dated May 8, 2013, is for the exclusive and confidential use of B & B HOMES LLC concerning potential development of the 7446 Pocket Road project site located in the City of Sacramento, California. Any use of this report, the accompanying appendices, or portions thereof, other than for project review and approval by appropriate governmental authorities, shall be subject to and require the written permission of Sierra Nevada Arborists. Unauthorized modification, distribution and/or use of this report, including the data or portions thereof contained within the accompanying appendices, is strictly prohibited.

QUALIFICATION STATEMENT

Sierra Nevada Arborists is a fully insured, Loomis-based arboriculture consulting firm founded in January of 1998 by its Principal, Edwin E. Stirtz. Mr. Stirtz is an ISA Certified Arborist, and a member of the American Society of Consulting Arborists and International Society of Arboriculture. In addition, Mr. Stirtz is a member of the Association of Environmental Professionals. Mr. Stirtz possesses in excess of 33 years experience in horticulture and arboriculture, both maintenance and construction, and has spent the last 25 years as a consulting and preservation specialist in the Sacramento and surrounding regions.

INTRODUCTION

Sierra Nevada Arborists is pleased to present to B & B Homes LLC the Arborist Report and Tree Inventory Summary for the trees located within and/or overhanging the 7446 Pocket Road project site located in the City of Sacramento, California. This Arborist Report and Tree inventory Summary memorializes tree data obtained by Edwin E. Stirtz, ISA Certified Arborist WE-0510A, at the time of field reconnaissance and inventory efforts during the period April 29, 2013.

SCOPE OF INVENTORY EFFORT

The City of Sacramento Tree Preservation Ordinance (Sacramento City Code Title 12, Chapter 12.56.060 and following) regulates both the removal of heritage trees and the encroachment of construction activities within their driplines. The City of Sacramento Tree Protection Ordinance defines a “Heritage Tree” as:

1. Any tree of any species with a trunk circumference of one hundred inches or more (i.e. 31.82" DBH)¹, which is of good quality in terms of health, vigor of growth and conformity to generally accepted horticultural standards of shape and location for its species;
2. Any native *Quercus* species, *Aesculus californica* (California Buckeye) or *Platanus racemosa* (California Sycamore) having a circumference of thirty-six inches or greater (i.e. 11.45" DBH) when a single trunk, or a cumulative circumference of thirty-six inches or greater when a multi-trunk;
3. Any tree thirty-six inches in circumference or greater in a riparian zone. The riparian zone is measured from the center line of the water course to thirty feet beyond the high water line; or
4. Any tree, grove of trees or woodland trees designated by resolution of the City Council to be of special historical or environmental value or of significant community benefit.

(Sacramento Municipal Code, Title 12, Chapter 12.64: Heritage Trees; see Appendix A.)

At the request of Ms. Rachel Bardis of B & B Homes LLC the period April 29, 2013, Edwin E. Stirtz of Sierra Nevada Arborists visited the 7446 Pocket Road project site located in the City of Sacramento, California. The purpose of this field reconnaissance effort was to identify, inventory and comment upon the current structure and vigor of the trees within and/or overhanging the proposed project site.

¹ “Diameter at breast height” has been calculated by use of the following formula: circumference measured four and one-half feet above ground level divided by 3.142.

This Arborist Report and Tree Inventory Summary presents information concerning the species, size and current condition of the trees meeting the criteria detailed above within the proposed project area, along with initial pre-development recommendations on a tree-by-tree basis which logically follow the characteristics noted within the trees at the time of field inventory efforts. Information concerning the nature and extent of root system and canopy impacts which will be sustained by the trees from proposed development activities, along with specific tree-by-tree mitigation recommendations for the trees which will sustain encroachment into their protected root zones can be provided in a Supplemental Arborist Report and Construction Impact Assessment once development plans have been refined and finalized for the proposed project area.

METHODOLOGY

During field reconnaissance and inventory efforts Edwin E. Stirtz of Sierra Nevada Arborists conducted a visual review from ground level of the trees within and/or overhanging the proposed project area as observed in the field. The trees which met the defined criteria were identified in the field by affixing to the tree's trunk a round pre-stamped metal numbering tag. The tree numbers utilized in this report and the accompanying tree inventory summary correspond to the tree tag which is affixed to the tree in the field and which are depicted on the "Arborist Tree Exhibit" prepared by Sierra Nevada Arborists.

At the time of field identification and inventory efforts specific data was gathered for each tagged tree including the tree's species, diameter and dripline measurements, and a visual assessment was made of the tree's root crown/collar, trunk, limbs and foliage. Utilizing this data the tree's overall structural condition and vigor were separately assessed ranging from "good"¹ to "poor" based upon the observed characteristics noted within the tree and the Arborist's best professional judgment. Ratings are subjective and are dependent upon both the structure and vigor of the tree. The vigor rating considers factors such as the size, color and density of the foliage; the amount of deadwood within the canopy; bud viability; evidence of wound closure; and the presence or evidence of stress, disease, nutrient deficiency and insect infestation. The structural rating reflects the root crown/collar, trunk and branch configurations; canopy balance; the presence of included bark, weak crotches and other structural defects and decay and the potential for structural failure. Finally, notable characteristics were documented and *initial* recommendations on a tree-by-tree basis were made which logically followed the observed characteristics noted within the trees at the time of the field inventory effort. The initial recommendations are based on the assumption that the tree would be introduced into a developed environment and may require maintenance and/or may not be suitable for retention within a post-development setting.

¹ It should be noted that there were no trees observed within the project area which fell within the criteria of a "good" rating. A complete description of the terms and ratings utilized in this report and accompany inventory summary are found on pages 9-10.

SUMMARY OF INVENTORY EFFORT

Field reconnaissance and inventory efforts found 14 living trees meeting the defined criteria within and/or overhanging the proposed project area. Composition of the 14 inventoried trees included the following species and accompanying aggregate diameter inches:

SPECIES DIVERSIFICATION			
Fig	=	1 tree	(38 aggregate diameter inches)
English Walnut	=	2 trees	(76 aggregate diameter inches)
Valley Oak	=	3 trees	(125 aggregate diameter inches)
California Black Walnut	=	8 trees	(303 aggregate diameter inches)

Initial Recommended Removals

At this time 6 of the 14 inventoried trees have been recommended for removal from the proposed project area due to the nature and extent of defects, compromised health and/or structural instability noted at the time of field inventory efforts. If these trees were retained within the proposed project area it is our opinion that they may be hazardous depending upon their proximity to planned development activities. For reference, the trees which have been recommended for removal due to the severity of noted defects, compromised health and/or structural instability are highlighted in green within the accompanying inventory summary and are briefly summarized as follows:

TREE#	COMMON NAME	SPECIES	SINGLE STEM (inches)	MULTI-STEMS (inches)	TOTAL DBH (sum of inches of all stems)	DLR (feet)	CONDITIONAL ASSESSMENT	
							STRUCTURE	VIGOR
72	Fig	<i>Ficus carica</i>		8,8,10,12	38	40	Poor to fair	Fair
73	California Black Walnut	<i>Juglans californica</i>	62		62	34	Poor to fair	Poor
75	California Black Walnut	<i>Juglans californica</i>	21		21	20	Poor to fair	Poor to fair
76	California Black Walnut	<i>Juglans californica</i>	16		16	22	Poor	Poor to fair
77	California Black Walnut	<i>Juglans californica</i>	19		19	29	Poor	Poor to fair
79	California Black Walnut	<i>Juglans californica</i>	42		42	32	Poor to fair	Poor

Finally, it should also be noted that some of the inventoried trees within the proposed project area are trees which will require periodic/seasonal monitoring to assess the trees' ongoing structural integrity. At this time it is recommended that these trees, and the additional non-heritage trees previously inventoried and evaluated by Connor Arborists, be monitored and thoroughly inspected by a qualified ISA Certified Arborist on at least an annual basis to keep abreast of the trees' changing condition(s) and to assess the trees' ongoing structural integrity and potential for hazard in a developed environment.

CONSTRUCTION IMPACT ASSESSMENT

This Arborist Report and Tree Inventory Summary is intended to provide to B & B Homes LLC, the City of Sacramento and other members of the development team a detailed *pre-development review* of the species, size, and current structure and vigor of the heritage trees within and/or overhanging the proposed project area. It is not an exhaustive review of the impacts which will be sustained from project implementation. At this early stage of the project specific root system and canopy impacts on a tree-by-tree basis cannot be definitively assessed until the site development, grading, and other improvement plans have been refined and finalized and data from the accompanying inventory summary (i.e. tree numbers, dripline radius and root protection zones) is properly depicted on the plans.

Since trees are living organisms whose condition may change at any time a complete assessment of construction impacts and specific recommendations to help mitigate for the adverse impacts which may be sustained by the trees from contemplated construction activities cannot be made until the development plans have been refined and finalized. Once final plans have been developed for the site a qualified ISA Certified Arborist with special expertise and demonstrated experience with construction projects in and among native and non-native trees should review those plans and provide a more detailed assessment of impacts, including identification of trees which may require removal to facilitate construction of structures and other contemplated site development activities. This review will be particularly important if structures and/or pedestrian activities will fall within or near the fall zone of a tree which has been noted as exhibiting structural defects, questionable long-term longevity and/or a conditional rating which is less than “fair”, and for trees which measure 16 inches and greater in diameter which will be retained within close proximity to development as trees of this size may pose a more significant hazard if a sudden limb shed and/or catastrophic failure should occur. In addition, the review should include an assessment of root system and canopy impacts which will be sustained by the trees which will be retained within the proposed development area, along with specific recommendations on a tree-by-tree basis to help reduce adverse impacts of construction on the retained trees. In the meantime, this report provides some *initial* pre-development recommendations which logically follow the observed characteristics noted in the trees at the time of the initial field inventory efforts, as well as General Protection Measures which should be utilized as a guideline for the protection of trees which may be retained within the development area. These initial recommendations will require modification and/or augmentation as development plans are refined and finalized.

GENERAL COMMENTS AND ARBORISTS' DISCLAIMER

The City of Sacramento regulates both the removal of protected “heritage trees” and the encroachment of construction activities within their driplines. Therefore, a tree permit and/or additional development authorization should be obtained from the City of Sacramento prior to the removal of any trees within the proposed project area. All terms and conditions of the tree permit and/or other Conditions of Approval are the sole and exclusive responsibility of the project applicant. It should be noted that prior to final inspection written verification

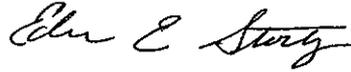
from an ISA Certified Arborist may be required certifying the approved removal activities and/or implementation of other Conditions of Approval outlined for the retained trees on the site. ***Sierra Nevada Arborists cannot provide written Certification of Compliance unless we have been provided with a copy of the approved site development plans, applicable permits and/or Conditions of Approval, and are on site to monitor and observe regulated activities during the course of construction.*** Therefore, it will be necessary for the project applicant to notify Sierra Nevada Arborists well in advance (at least 72-hours prior notice) of any regulated activities which are scheduled to occur on site so that those activities can be properly monitored and documented for compliance certification.

Please bear in mind that implementation of the recommendations provided within this initial report will help to reduce adverse impacts of construction on the retained trees; however, implementation of any recommendations should not be viewed as a guarantee or warranty against the trees' ultimate demise and/or failure in the future. Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of the trees and ***attempt to reduce the risk of living near trees.*** Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced arborist. Entities who choose to develop wooded property are accepting a certain level of risk from unpredictable tree related hazards such as toppling in storms, limbs falling and fires that may damage property at some time in the future. Since trees are living organisms their structure and vigor constantly change over time, and they are not immune to changes in site conditions or seasonal variations in the weather. Further, conditions are often hidden within the tree and/or below ground. Arborists and other tree care professionals cannot guarantee that a tree will be healthy and/or safe under all circumstances or for a specific period of time. Likewise remedial treatments cannot be guaranteed. Trees can be managed but they cannot be controlled. To develop land and live near trees is to accept some degree of risk and the only way to eliminate all risk associated with trees would be to eliminate all of the trees. ***An entity who develops land with a tree in the vicinity should be aware of and inform their future tenants of this Arborists' Disclaimer, and be further advised that the developer and the future tenants assume the risk that a tree could at any time suffer a branch and/or limb failure, blow over in a storm and/or fail for no apparent reason which may cause bodily injury or property damage.*** Sierra Nevada Arborists cannot predict acts of nature including, without limitation, storms of sufficient strength which can even take down a tree with a structurally sound and vigorous appearance.

Finally, the trees preserved within and/or overhanging the proposed project area will experience a physical environment different from the pre-development environment. As a result, tree health and structural stability should be regularly monitored. Occasional pruning, fertilization, mulch, pest management, replanting and/or irrigation may be required. In addition, ***provisions for monitoring both tree health and structural stability following construction must be made a priority.*** As trees age, the likelihood of failure of branches or entire trees increases. Therefore, ***the future management plan must include an annual inspection*** to keep abreast of the trees' changing condition(s) and to assess the trees' ongoing structural integrity and potential for hazard in a developed environment.

Thank you for allowing Sierra Nevada Arborists to assist you with this initial review. Please feel free to give me a call if you have any questions or require additional information and/or clarification.

Sincerely,



Edwin E. Stirtz
ISA Certified Arborist WE-0510A
Member, American Society of Consulting Arborists

EES
Enclosures

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided to the consultant is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations.
3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.
4. The consultant shall not be required to give a deposition and/or attend court by reason of this report unless subsequent contractual arrangements are made for in advance, including payment of an additional fee for such services according to our standard fee schedule, adjusted yearly, and terms of the subsequent contract of engagement.
5. Loss or alteration of any part of this report invalidates the entire report. Ownership of any documents produced passes to the Client only when all fees have been paid.
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7. Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed written or verbal consent of the consultant, particularly as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant as stated in his qualifications.
8. This report and any values expressed herein represent the opinion of the consultant and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
9. Sketches, diagrams, graphs, drawings and photographs within this report are intended as visual aids and are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by other consultants is for coordination and ease of

reference. Inclusion of such information does not constitute a representation by the consultant as to the sufficiency or accuracy of the information.

10. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without laboratory analysis, dissection, excavation, probing or coring, unless otherwise stated.
11. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.
12. This report is based on the observations and opinions of Edwin E. Stirtz, and does not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described herein. Neither this author nor Sierra Nevada Arborists has assumed any responsibility for liability associated with the trees on or adjacent to this project site, their future demise and/or any damage which may result therefrom.
13. The information contained within this report is true to the best of the author's knowledge and experience as of the date it was prepared; however, certain conditions may exist which only a comprehensive, scientific, investigation might reveal which should be performed by other consulting professionals.
14. The legal description, dimensions, and areas herein are assumed to be correct. No responsibility is assumed for matters that are legal in nature.
15. Any changes to an established tree's environment can cause its decline, death and/or structural failure.

DEFINITIONS AND RATINGS

Tree Number:	Corresponds to aluminum tag attached to the tree.
Species Identification:	Scientific and common species name.
Diameter (“DBH”):	This is the trunk diameter measured at breast height (industry standard 4.5 feet above ground level).
Dripline radius (“DLR”):	A radius equal to the horizontal distance from the trunk of the tree to the end of the farthest most branch tip prior to any cutting. When depicted on a map, the dripline will appear as an irregularly shaped circle that follows the contour of the tree’s branches as seen from overhead.
Protected Zone:	A circle equal to the largest radius of a protected tree’s dripline plus 1 foot.
Root Crown:	Assessment of the root crown/collar area located at the base of the trunk of the tree at soil level.
Trunk:	Assessment of the tree’s main trunk from ground level generally to the point of the primary crotch structure.
Limbs:	Assessment of both smaller and larger branching, generally from primary crotch structure to branch tips.
Foliage:	Tree’s leaves.
Overall Condition:	Describes overall condition of the tree in terms of structure and vigor.
Recommendation:	Pre-development recommendations based upon observed characteristics noted at the time of the initial field inventory effort.
Obscured:	Occasionally some portion of the tree may be obscured from visual inspection due to the presence of dense vegetation which, during the course of inspection for the initial arborist report, prevented a complete evaluation of the tree. In these cases, if the tree is to be retained on site the vegetation should be removed to allow for a complete assessment of the tree prior to making final decisions regarding the suitability for retention.

TREE CONDITION RATING CRITERIA

RATING TERM	ROOT CROWN	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR
Good	No apparent injuries, decay, cavities or evidence of hollowing; no anchoring roots exposed; no indications of infestation or disease	No apparent injuries, decay, cavities or evidence of hollowing; no codominant attachments or multiple trunk attachments are observed; no indications of infestation or disease	No apparent injuries, decay, cavities or evidence of hollowing; below average amount of dead limbs or twigs; no major limb failures or included bark; callus growth is vigorous	Leaf size, color and density are typical for the species; buds are normal in size, viable, abundant and uniform throughout the canopy; annual seasonal growth increments are average or above average; no insect or disease infestations/ infections evident	No apparent structural defects; no weak crotches; no excessively weighted branches and no significant cavities or decay	Tree appears healthy and has little or no significant deadwood; foliage is normal and healthy
Fair	Small to moderate injuries, decay, cavities or hollowing may be evident but are not currently affecting the overall structure; some evidence of infestation or disease may be present but is not currently affecting the tree's structure	Small to moderate injuries, decay, cavities or hollowing may be evident; codominant branching or multiple trunk attachments or minor bark inclusion may be observed; some infestation or disease may be present but not currently affecting the tree's structure	Small to moderate injuries, decay or cavities may be present; average or above average dead limbs or twigs may be present; some limb failures or bark inclusion observed; callus growth is average	Leaf size, color and density are typical or slightly below typical for the species; buds are normal or slightly sparse with potentially varied viability, abundance and distribution throughout the canopy; annual seasonal growth increments are average or slightly below average; minor insect or disease infestation/infection may be present	Minor structural problems such as weak crotches, minor wounds and/or cavities or moderate amount of excessive weight; non-critical structural defects which can be mitigated through pruning, cabling or bracing	Tree appears stressed or partially damaged; minimal vegetative growth since previous season; moderate amount of deadwood, abnormal foliage and minor lesions or cambium dieback
Poor	Moderate to severe injuries, decay, cavities or hollowing may be evident and are affecting the overall structure; presence of infestation or disease may be significant and affecting the tree's structure	Moderate to severe injuries, decay, cavities or hollowing may be evident and are affecting the tree's structure; presence of infestation or disease may be significant and affecting the tree's structure	Severe injuries, decay or cavities may be present; major deadwood, twig dieback, limb failures or bark inclusion observed; callus growth is below average	Leaf size, color and density are obviously abnormal; buds are obviously abnormal or absent; annual seasonal growth is well below average for the species; insect or disease problems may be severe	Obvious major structural problems which cannot be corrected with mitigation; potential for major limb, trunk or root system failure is high; significant decay or dieback may be present	Tree health is declining; no new vegetative growth; large amounts of deadwood; foliage is severely abnormal

The ratings "good to fair" and "fair to poor" are used to describe trees that fall between the described major categories and have elements of both

**GENERAL PROTECTION GUIDELINES
FOR TREES PLANNED FOR PRESERVATION**

Great care must be exercised when work is conducted upon or around protected trees. The purpose of these General Protection Measures is to provide guidelines to protect the health of the affected protected trees. These guidelines apply to all encroachments into the protected zone of a protected tree, and may be incorporated into tree permits and/or other Conditions of Approval as deemed appropriate by the applicable governing body.

- ◆ A circle with a radius measurement from the trunk of the tree to the tip of its longest limb, plus one foot, shall constitute the critical root zone protection area of each protected tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each protected tree. Removing limbs that make up the dripline does not change the protected area.
- ◆ Any protected trees on site which require pruning shall be pruned by an ISA Certified Arborist prior to the start of construction work. All pruning shall be in accordance with the American National Standards Institute (ANSI) A300 pruning standards, ANSI Standard 2133.1-2000 regarding safety practices, and the International Society of Arboriculture (ISA) “Tree Pruning Guidelines” and Best Management Practices.
- ◆ Prior to initiating construction, temporary protective fencing shall be installed at least one foot outside the root protection zone of the protected trees in order to avoid damage to the tree canopies and root systems. Fencing shall be installed in accordance with the approved fencing plan prior to the commencement of any grading operations or such other time as determined by the review body. The developer shall contact the Project Arborist and the Planning Department for an inspection of the fencing prior to commencing construction activities on site.
- ◆ Signs shall be installed on the protective fence in four (4) equidistant locations around each individual protected tree. The size of each sign must be a minimum of two (2) feet by two (2) feet and must contain the following language:

**WARNING: THIS FENCE SHALL NOT BE REMOVED OR RELOCATED
WITHOUT WRITTEN AUTHORIZATION FROM THE CITY OF
SACRAMENTO**

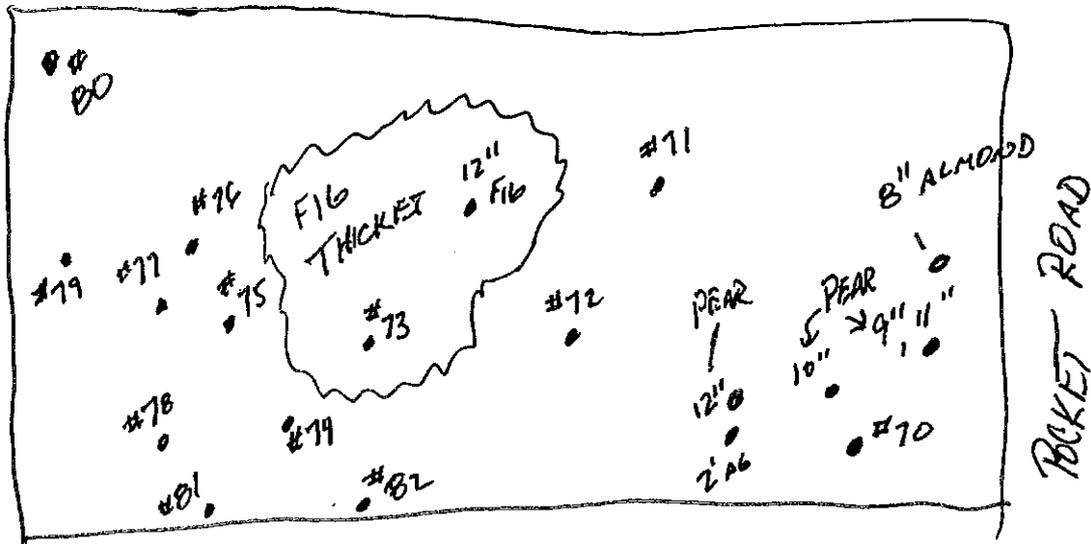
Once approval has been obtained from the City of Sacramento, protective fencing shall remain in place throughout the entire construction period and shall not be removed, relocated, taken down or otherwise modified in whole or in part without prior written authorization from the Agency, or as deemed necessary by the Project Arborist to facilitate approved activities within the root protection zone.

- ◆ Any removal of paving or structures (i.e. demolition) that occurs within the dripline of a protected tree shall be done under the direct supervision of the Project Arborist. To the maximum extent feasible, demolition work within the dripline protection area of the protected tree shall be performed by hand. If the Project Arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.
- ◆ No signs, ropes, cables (except those which may be installed by an ISA Certified Arborist to provide limb support) or any other items shall be attached to the protected trees. Small metallic numbering tags for the purpose of identification in preparing tree reports and inventories shall be allowed.
- ◆ No vehicles, construction equipment, mobile homes/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of protected trees.
- ◆ Drainage patterns on the site shall not be modified so that water collects, stands or is diverted across the dripline of any protected tree.
- ◆ No trenching shall be allowed within the driplines of protected trees, except as specifically approved by the Planning Department as set forth in the project's Conditions of Approval and/or approved tree permit. If it is absolutely necessary to install underground utilities within the dripline of a protected tree the utility line within the protected zone shall be "bored and jacked" or performed utilizing hand tools to avoid root injury under the direct supervision of the Project Arborist.
- ◆ Grading within the protected zone of a protected tree shall be minimized. Cuts within the protected zone shall be maintained at less than 20% of the critical root zone area. Grade cuts shall be monitored by the Project Arborist. Any damaged roots encountered shall be root pruned and properly treated as deemed necessary by the Project Arborist.
- ◆ Minor roots less than one (1) inch in diameter encountered during approved excavation and/or grading activities may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area as deemed necessary by the Project Arborist.
- ◆ Major roots greater than one (1) inch in diameter encountered during approved excavation and/or grading activities may not be cut without approval of the Project Arborist. Depending upon the type of improvement being proposed, bridging techniques or a new site design may need to be employed to protect the roots and the tree.

- ◆ Cut faces, which will be exposed for more than 2-3 days, shall be covered with dense burlap fabric and watered to maintain soil moisture at least on a daily basis (or possibly more frequently during summer months). If any native ground surface fabric within the protected zone must be removed for any reason, it shall be replaced within forty-eight (48) hours.
- ◆ If fills exceed 1 foot in depth up to 20% of the critical root zone area, aeration systems may serve to mitigate the presence of the fill materials as determined by the Project Arborist.
- ◆ When fill materials are deemed necessary on two or three sides of a tree it is critical to provide for drainage away from the critical root zone area of the tree (particularly when considering heavy winter rainfalls). Overland releases and subterranean drains dug outside the critical root zone area and tied directly to the main storm drain system are two options.
- ◆ In cases where a permit has been approved for construction of a retaining wall(s) within the protected zone of a protected tree the applicant will be required to provide for immediate protection of exposed roots from moisture loss during the time prior to completion of the wall. The retaining wall within the protected zone of the protected tree shall be constructed within seventy-two (72) hours after completion of grading within the root protection zone.
- ◆ The construction of impervious surfaces within the dripline of a protected tree shall be minimized. When necessary, a piped aeration system shall be installed under the direct supervision of the Project Arborist.
- ◆ Preservation devices such as aeration systems, tree wells, drains, special paving and cabling systems must be installed in conformance with approved plans and certified by the Project Arborist.
- ◆ No sprinkler or irrigation system shall be installed in such a manner that sprays water or requires trenching within the dripline of a protected tree. An above ground drip irrigation system is recommended. An independent low-flow drip irrigation system may be used for establishing drought-tolerant plants within the protected zone of a protected tree. Irrigation shall be gradually reduced and discontinued after a two (2) year period.
- ◆ All portions of permanent fencing that will encroach into the protected zone of a protected tree shall be constructed using posts set no closer than ten (10) feet on center. Posts shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts in order to reduce impacts to the tree(s).
- ◆ Landscaping beneath native oak trees may include non-plant materials such as bark mulch, wood chips, boulders, etc. Planting live material under protected native oak trees is generally discouraged, and is not recommended within six (6) feet of the trunk

of a native oak tree with a diameter a breast height (DBH) of eighteen (18) inches or less, or within ten (10) feet of the trunk of a native oak tree with a DBH of more than eighteen (18) inches. The only plant species which shall be planted within the dripline of native oak trees are those which are tolerant of the natural, semi-arid environs of the tree(s).

7446 POCKET ROAD



SIERRA NEVADA ARBORISTS

FIELD MAP APRIL 2013

↑
N
NO
SCALE

Appendix B - Geotech

Geotechnical Engineering Report
7446 POCKET ROAD SUBDIVISION
WKA No. 9816.01
August 23, 2013

Prepared For:
B & B Homes, LLC
10630 Mather Boulevard
Sacramento, California 95655

Geotechnical Engineering Report
7446 POCKET ROAD SUBDIVISION
Sacramento, California

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Geotechnical Engineering Report
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Geotechnical Engineering Report
7446 POCKET ROAD SUBDIVISION
Sacramento, California
WKA No. 9816.01
August 23, 2013

INTRODUCTION

We have completed a geotechnical engineering investigation for the proposed 7446 Pocket Road residential subdivision to be constructed on the west side of Pocket Road, approximately 160 feet south of Pinios River Court in Sacramento, California (see Figure 1). The purposes of our investigation have been to explore the existing site, soil and groundwater conditions across the property, and to provide geotechnical engineering conclusions and recommendations regarding residential development of the property. This report presents the results of our work.

Work Scope

Our scope of work has included the following tasks:

1. a site reconnaissance;
2. review of previous work performed near the site;
3. review of historic United States Geological Survey (USGS) topographic maps, aerial photographs, and available groundwater information;
4. subsurface exploration, including the excavation and sampling of six test pits to maximum depths of approximately three to 12 feet below existing site grades;
5. bulk sampling of anticipated pavement subgrade soils;
6. laboratory testing of selected soil samples;
7. engineering analyses; and,
8. preparation of this report.

Previous Work in Vicinity of the Site

Supplemental information used in the preparation of this report included review of the following reports prepared by our firm for other projects in the vicinity of the site:

- *Geotechnical Engineering Report* (WKA No. 9663.01, dated March 11, 2013), prepared for the Welsh residential subdivision located on the south side of Pocket Road, between Greenhaven Drive and River Ranch Way;

- *Geotechnical Engineering Report* (WKA No. 5718.01, dated October 14, 2003), prepared for the Riverlake residential subdivision constructed on the north and south sides of Pocket Road, between Bridgeview Drive and Dutra Bend Way;
- *Geotechnical Engineering Report* (WKA No. 2529.01, dated October 14, 1993), prepared for the Coleman Ranch residential subdivision located on the south side of Pocket Road;

Figures and Attachments

This report contains a Vicinity Map as Figure 1; a Site Plan showing the approximate locations of the test pits as Figure 2; and, the Logs of Test Pits as Figures 3 and 4. An explanation of the symbols and classification system used on the Logs of Test Pits is contained on Figure 5. Appendix A contains general information regarding project concepts, exploratory methods used during our field investigation, and laboratory test results not included on the Logs of Test Pits. Appendix B contains *Earthwork Specifications* that may be used in the preparation of project plans and specifications.

Proposed Development

Review of a drawing titled *Conceptual Grading + Utility Plan, 7446 Pocket Road*, prepared by JTS Engineering Consultants, Inc., dated August 6, 2007, indicates the site will be developed with six lots for construction of single-family homes. We assume the structures will be one- or two-story, wood-frame houses with interior concrete slab-on-grade lower floors. Structural loads for the homes are anticipated to be relatively light based on this type of construction. Associated development will include construction of a new asphalt paved cul-de-sac, underground utilities, exterior flatwork, and typical residential landscaping.

Based on existing site topography and review of the conceptual grading plan, we anticipate maximum excavations and fills on the order of one to three feet will be required for residential development of the site.

FINDINGS

Site Description

The subject property is located on the west side of Pocket Road, approximately 160 feet south of the intersection of Pocket Road and Pinios River Court in Sacramento, California (see Figure 1). The site is bounded to the north by two residences and an undeveloped parcel that is designated as an Indian burial mound; to the east by Pocket Road; to the south by a school;



and, to the west by a levee. The topography across the site is essentially flat with an average surface elevation of approximately +15 feet relative to mean sea level (National Vertical Geodetic Datum 1929), based on review of the USGS 7.5-Minute *Topographic Map of the Clarksburg Quadrangle, California*, dated 1967 (Photorevised 1980).

At the time of our field investigation, July 25, 2013, the subject property consisted of fallow undeveloped land. The upper soils across the site were very loose to depths up to about 1½ feet and appeared to be imported materials. Vegetation across the portion of the site proposed to be developed (outside the archaeological impact boundary) consisted of a moderate growth of weeds approximately four to five feet high. Several mature trees were observed near the western portion of the site and along the southeastern border of the site. A heavy concentration of berry bushes and trees, and a concrete slab were observed at the northern portion of the property, outside the area proposed to be developed.

Historical Aerial Photograph Review

Review of an aerial photograph taken in 1993 indicates the property consisted of undeveloped land surrounded by residential development. A dense cluster of mature trees are visible in the northeastern portion of the property and along the southeastern border of the site. A few mature trees are also visible across the western portion of the site. A house is visible within the dense cluster of trees.

Review of available aerial photographs taken between 1998 and 2003 indicates the property has remained relatively unchanged since 1993.

By 2004, the surface fill material appear to have been spread across the property.

Review of available aerial photographs taken between 2004 and 2006 indicates the property has remained relatively unchanged since 2004.

Review of an aerial photograph taken in 2007 indicates a section of trees or berry bushes within the aforementioned cluster of trees across the northeast portion of the property appears to have been cleared and a semicircular pattern of white linear features appear to the south of the clearing.

By 2008, the house visible in the 1993 aerial photograph appears to have been completely demolished with the exception of the remaining concrete slab.



Review of available aerial photographs taken between 2008 and 2012 indicates the property has remained relatively unchanged since 2008, with the exception of periodic discing.

Subsurface Soil Conditions

The test pits indicate the presence of undocumented fill materials consisting of very loose, gravelly and cobbly sandy silts to a depth up to about 1½ feet below existing grade. Below the fills, the native subsurface profile consists of a layer of silty clay varying in thickness from about one to three feet, underlain by sandy silts to depths up to about six to eight feet. Silty fine sands were encountered below the silt to the maximum depth explored of approximately 12 feet below the existing ground surface.

Please refer to the Logs of Test Pits, Figure 3 and 4, for more detailed information pertaining to the subsurface conditions at a particular location.

Groundwater

Free groundwater was not encountered within the maximum 12-foot depth of our test pits excavated on July 25, 2013. Review of the Spring 2007 Sacramento County Department of Water Resources Groundwater Elevations Map indicates that regional groundwater beneath the site is located at an elevation of about +0 feet relative to mean sea level (msl), or approximately 15 feet below the existing ground surface.

CONCLUSIONS

2010 California Building Code Seismic Design Parameters

Section 1613 of the 2010 California Building Code (CBC) references Chapter 11 (*Seismic Design Criteria*) of the American Society of Civil Engineers (ASCE) Standard 7-05 for the purposes of seismic design. The ASCE Standard 7-05 seismic parameters were determined based on the site latitude and longitude (Latitude 38.4864°N, Longitude -121.5484°W) using the public domain computer program developed by the United States Geological Survey (Version 5.1.0). The following parameters summarized in the table below may be used for seismic design of residential structures using the 2010 CBC.



TABLE 1 2010 CBC SEISMIC DESIGN PARAMETERS				
Latitude: 38.4864° N Longitude: -121.5484° W	ASCE 7-05 Table/Equation	2010 CBC Table/Equation	Factor/ Coefficient	Value
Short-Period MCE at 0.2s	Figure 22-3	Figure 1613.5(3)	S_s	0.692 g
1.0s Period MCE	Figure 22-4	Figure 1613.5(4)	S_1	0.266 g
Site Class	Table 20.3-1	Table 1613.5.2	--	D
Site Coefficient	Table 11.4-1	Table 1613.5.3(1)	F_a	1.246
Site Coefficient	Table 11.4-2	Table 1613.5.3(2)	F_v	1.868
Adjusted MCE Spectral Response Parameters	Equation 11.4-1	Equation 16-36	S_{MS}	0.862 g
	Equation 11.4-2	Equation 16-37	S_{M1}	0.497 g
Design Spectral Acceleration Parameters	Equation 11.4-3	Equation 16-38	S_{DS}	0.575 g
	Equation 11.4-4	Equation 16-39	S_{D1}	0.331 g
Seismic Design Category	Table 11.6-1	Table 1613.5.6(1)	Occupancy I to IV	D
	Table 11.6-2	Table 1613.5.6(2)	Occupancy I to IV	D

Evaluation of the liquefaction of the site soils during seismic events was beyond the scope of our services. However, since this is an "in-fill" subdivision surrounded by existing residential development, we anticipate that a waiver can be requested from the Building Official.

Bearing Capacity

A concern for site development and structural support is the presence of undocumented fill soils placed across the site. These fills are very loose and not suitable for support of structures, unless they are removed and re-compacted as engineered fill in accordance with the recommendations provided in the Site Preparation and Engineered Fill Construction section of this report.

Field and laboratory test results indicate the underlying native undisturbed soils and engineered fills are capable of supporting the proposed structures and pavements, provided the recommendations of this report are carefully followed.



Excavation Conditions

The on-site soils should be readily excavatable with conventional construction equipment. Shallow excavations less than five feet in depth likely will stand at a near-vertical inclination for the short periods of time required for foundation and utility construction. The sidewalls of our test pits remained vertical during excavation to depths up to 12 feet below existing site grades.

It should be noted that localized sloughing and "running" conditions may occur at shallower depths than were observed in our test pits if the soils are saturated, or if zones of clean, cohesionless sands are encountered, and subjected to construction vibrations or allowed to dry significantly. We emphasize excavated materials should not be stockpiled directly adjacent to the open trenches to prevent surcharge loading of trench sidewalls. Excessive equipment traffic should also be avoided near open trenches. Excavations exceeding five feet in depth that will be entered by workers will require shoring, bracing, sloped excavations or the use of a traveling shield conforming to current Cal/OSHA regulations.

Soil Expansion Potential

Laboratory test results of the near-surface clays indicate these materials possess a low expansion potential when tested in accordance with the ASTM D4829 test method (see Figure A1). Based on these laboratory test results, it is our opinion that the near-surface clays are capable of exerting low to moderate expansion pressures on foundations, exterior flatworks, and slabs-on-grade. Specific recommendations to mitigate the effects of expansive soils are provided in the Site Preparation section of this report.

Pavement Subgrade Qualities

The anticipated pavement subgrade soils exhibit relatively poor subgrade qualities for support of asphalt concrete pavements. Laboratory testing of anticipated pavement subgrade soils indicates that these materials possess an equilibrium Resistance ("R") value of 11 when tested in accordance with California Test 301 as shown on Figure A2. We have selected an R-value of 10 for our pavement design analysis.

The native clay soils are anticipated to react well with the addition of quicklime (either dolomitic or high-calcium). The lime-treatment of native clays can be an effective and economical method to increase the capability of the clay soil to support pavements and slab-on-grade concrete; to reduce the moisture content of near-saturated soils, enabling construction to proceed during or shortly after the rainy season; and, to reduce the expansive characteristics of the clays.



The performance of chemically stabilized soils is very dependent on uniform mixing of the quicklime into the subgrade soils, and providing a proper curing period following compaction. An experienced soil stabilization contractor combined with a comprehensive quality control program are essential to achieve the best results with lime stabilized subgrades.

Suitability of On-Site Materials for Engineered Fill Construction

In our opinion, the on-site soils are suitable for use as engineered fill materials provided they are free of debris and organics, and are at moisture content suitable for compaction. The undocumented fill material is also considered suitable for use in engineered fill, provided the material is free of significant organics or debris.

Preliminary Soil Corrosion Potential

One sample of near-surface soil was tested to determine resistivity, pH, chloride, and sulfate concentrations to help evaluate the potential for corrosive attack upon reinforced concrete and buried metal. The results of the corrosivity testing are summarized in Table 2 as follows. A copy of the laboratory test results is presented on Figure A3.

TABLE 2 SOIL CORROSIVITY TESTING		
Analyte	Test Method	TP1 (2'-3½')
pH	CA DOT 643 Modified*	7.87
Minimum Resistivity	CA DOT 643 Modified*	1630 Ω-cm
Chloride	CA DOT 417	16.4 ppm
Sulfate	CA DOT 422	10.8 ppm

* = Small cell method; Ω-cm = Ohm-centimeters; ppm = Parts per million

Published literature¹ defines a corrosive area as an area where the soil and or water contains more than 500 ppm of chlorides, more than 2000 ppm of sulfates, or has a pH of less than 5.5. The corrosivity test results suggest that the native soils may be corrosive to unprotected buried metal but likely not highly corrosive to steel reinforcement properly embedded within Portland cement concrete. Table 4.2.1 *Exposure Categories and Classes* of the American Concrete Institute (ACI) Manual of Concrete Practice Part 3 - 2010, indicates the severity of sulfate exposure for the sample tested is *Not Applicable*. Based upon the chloride and sulfate concentrations, ordinary Type I/II Portland cement is considered suitable for use on this project, assuming minimum concrete cover is maintained over the reinforcement.

¹ California Department of Transportation Corrosion Technology Section, Office of Materials and Foundations, *Interim Corrosion Guidelines for Foundation Investigations*, May 1999.



Wallace-Kuhl & Associates are not corrosion engineers. Therefore, if it is desired to further define the soil corrosion potential at the site, a corrosion engineer should be consulted.

Groundwater

Based upon the groundwater depths encountered during our field exploration and groundwater data we collected during subsurface investigations across the Pocket area, we conclude groundwater could be a significant factor in the design and construction of the proposed structures and shallow utilities. It should be noted that groundwater levels have historically been recorded as shallow as three to four feet below existing grades in the area. Groundwater levels in this area will fluctuate due to subsurface soil conditions, seasonal changes and the close proximity of the Sacramento River. Therefore, it is possible that groundwater could be encountered in excavations at depths of three to four feet, if attempted during times of high water levels on the Sacramento River which would require dewatering. Design of a dewatering system should be performed by a dewatering contractor with local experience.

Levee Seepage

The proposed residential subdivision is located adjacent to an existing levee. Although a seepage analysis was not performed for this investigation, we do not anticipate development of the site will be adversely affected by levee seepage, if any. Nor do we anticipate development of the site will adversely affect the existing levees and/or any seepage that may occur.

Seasonal Water

The near-surface soils will be in a near-saturated condition during and for a considerable period following the rainy season. Grading operations attempted following the onset of winter rains and prior to prolonged periods of drying will be hampered by high soil moisture contents. Such soils, intended for use as engineered fill, will require considerable aeration or an extended period of drying to reach a moisture content to allow the specified degree of compaction to be achieved. This should be considered in the construction schedule.

RECOMMENDATIONS

General

Based on existing site topography, we anticipate maximum excavations and fills on the order of one to three feet for development of the planned residential subdivision. The recommendations contained in this report are based upon this assumption.



Also, the recommendations presented below are appropriate for typical construction in the late spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months, and will not be compactable without drying by aeration or the addition of lime (or a similar product) to dry the soils. Should the construction schedule require work to continue during the wet months, additional recommendations can be provided, as conditions warrant.

Site Clearing

Initially, the site should be cleared of vegetation, trees and bushes including root systems, deleterious materials, and any utilities to be relocated or abandoned. Any existing underground utilities designated to be removed or relocated should include the trench backfill. Trees and shrubs designated to be removed should include the entire rootball and all roots larger than ½-inch in diameter. Excavations or depressions resulting from the removal of these items should be restored to grade with engineered fill placed and compacted in accordance with the recommendations contained in this report.

The upper 12 inches of soil subgrades within areas of removed trees should be thoroughly ripped and cross-ripped to expose any remaining root structures or debris. Exposed remnants should be removed and roots cleared from the site. Adequate removal of tree roots may require laborers and hand-picking to clean the subgrade soils to the satisfaction of our on-site representative. All depressions resulting from the removal of trees, as well as all loose, disturbed or saturated soils, should be cleaned out to firm, undisturbed soil, as determined by our representative and should be restored to grade with engineered fill compacted in accordance with the recommendations of this report.

Remaining surface organics should be stripped from the site. Strippings may be stockpiled for later use or disposed of off-site. *Strippings should not be used in general fill construction, but may be used in landscaped areas, provided they are kept at least five feet from the building pads, moisture conditioned and compacted. Strippings should not be used in landscaped berms that will support sound walls.* Discing of the organics into the surface soils may be a suitable alternate to stripping, depending on the condition and quantity of the organics at the time of grading. **The decision to utilize discing in lieu of stripping should be made by our representative at the time of earthwork construction.** Discing operations, if approved, should be observed by our representative and be continuous until the organics are adequately mixed into the surface soils to provide a compactable mixture of soil containing minor amounts of organic matter. Pockets or concentrations of organics will not be allowed.

Undocumented fills should be excavated to expose undisturbed soils, as determined by our representative. The approximate area of undocumented fills is shown on Figure 2; the fill depth



is about 1 to 1½ feet deep. The bid documents should include a unit cost (per cubic yard) for additional excavation and recompaction as engineered fill. Excavations and depressions should be restored to grade with engineered fill placed in accordance with the recommendations provided in the Site Preparation and Engineered Fill Construction section of this report.

Site Preparation and Engineered Fill Construction

Areas designated to receive fill and at-grade areas should be scarified to a depth of at least 12 inches, moisture conditioned to at least two percent above the optimum moisture content and compacted to not less than 90 percent of the maximum dry density as determined by ASTM D1557.

Compaction activities must be performed in the presence of our representative who will evaluate the performance of the subgrade under compactive load and identify any loose or unstable soil conditions that could require additional excavation. Compaction operations should be accomplished with a heavy, self-propelled, sheepsfoot compactor.

If construction begins during the summer or fall, there is a potential that the surface clays may be desiccated deeper than the recommended depth of scarification. Should this condition exist, the site should be continuously watered for a sufficient period of time to close the desiccation cracks to within 12 inches of the surface. Prewatering of the site should not be necessary if grading operations begin in the early spring months prior to the soils having a chance to dry significantly.

On-site soils are considered suitable for engineered fill construction of building pads, if free from rubbish, rubble greater than three inches, and organic concentrations. Imported fill materials, if required, should be granular soils with an Expansion Index of 40 or less; a Resistance-value of 10 or greater; and, be free of particles greater than three inches in maximum dimension. Imported soils should be approved by our office prior to being transported to the site. Also, if imported fills are required (other than aggregate base) the contractor must provide appropriate documentation that the import is free of known contamination and within acceptable corrosion limits.

Engineered fill should be placed in lifts that do not exceed six inches in compacted thickness. Native materials should be thoroughly moisture conditioned to at least two percent above the optimum moisture content and uniformly compacted to at least 90 percent of the ASTM D1557 maximum dry density. Approved granular import materials should be uniformly compacted to not less than 90 percent relative compaction and at least the optimum moisture content.



The upper 12 inches of final building pad subgrades should be brought to at least two percent above the optimum moisture content and uniformly compacted to not less than 90 percent of the maximum dry density, as determined by ASTM D1557, regardless of whether final grade is completed by excavation, filling or left at existing grade.

The upper six inches of pavement subgrade should be moisture conditioned to at least the optimum moisture content and uniformly compacted to at least 95 percent of the maximum dry density, and must be stable under construction traffic prior to placement of aggregate base. Final pavement subgrade processing and compaction should be performed just prior to placement of aggregate base, after construction of underground utilities is complete.

Permanent excavation and fill slopes should be constructed no steeper than two horizontal to one vertical (2:1), and should be vegetated as soon as practical following grading to minimize erosion.

Site preparation should be accomplished in accordance with the recommendations of this section and the *Earthwork Specifications* provided in Appendix B. A representative from our office should be present during site clearing and all grading operations to observe and test the fill to verify compliance with our recommendations and the job specifications.

Utility Trench Backfill

We recommend only native soils (in lieu of select sand backfill) be used as backfill for utility trenches located within building footprints and extending at least five feet beyond perimeter foundations to minimize water transmission beneath the structures. Utility trench backfill should be uniformly moisture conditioned to two percent above the optimum moisture content and mechanically compacted in lifts to at least 90 percent of the ASTM D1557 maximum dry density. The upper six inches of utility backfill within the limits of pavements should be compacted to at least 95 percent relative compaction at optimum moisture conditions.

We recommend that underground utility trenches that are aligned nearly parallel with foundations be at least three feet from the outer edge of foundations, wherever possible. As a general rule, trenches should not encroach into the zone extending outward at a 1:1 inclination below the foundations. Additionally, trenches near foundations should not remain open longer than 72 hours to prevent drying and potential shrinkage cracks. The intent of these recommendations is to prevent loss of both lateral and vertical support of foundations, resulting in possible settlement.



Foundation Design

Our analysis indicates that conventional shallow foundations are appropriate for the soil conditions at this site. The proposed residential structures may be supported upon continuous and/or isolated spread foundations bearing in undisturbed native surface soils or properly compacted engineered fill. The proposed residential foundations for both one- and two-story residential structures should extend at least 12 inches below lowest adjacent soil grade. All continuous foundations should maintain a minimum width of 12 inches; isolated spread foundations should be at least 18 inches in plan dimension. Foundations so established may be sized for maximum allowable soil bearing pressures of 1500 pounds per square foot (psf) for dead plus live loads with a 1/3 increase for short-term effects of wind or seismic forces. The weight of the foundation concrete extending below lowest adjacent soil grade may be disregarded in sizing computations.

To impede moisture migration beneath the structures, it is crucial that perimeter foundations be continuous around the entire structure. Continuous foundations should be reinforced with a minimum of two No. 4 reinforcing bars, placed one each near the top and bottom, to provide structural continuity and to allow the foundations the ability to span isolated soil irregularities. The structural engineer should evaluate the need for additional reinforcement.

Lateral resistance of foundations may be computed using an allowable friction factor of 0.25, which may be multiplied by the vertical load on the foundation. Additional lateral resistance may be assumed to develop against the vertical face of the foundations and may be computed using a "passive" equivalent fluid pressure of 250 psf per foot of depth. These two modes of resistance should not be added unless the frictional component is reduced by 50 percent, since full mobilization of the passive resistance requires some horizontal movement, which significantly diminishes the frictional resistance.

Interior Floor Slab Support

Interior concrete slab-on-grade floors can be supported upon the soil subgrade prepared in accordance with the recommendations in this report and maintained in that condition (at least two percent above the optimum moisture content). Interior concrete slab-on-grade floors should be at least four inches thick and, as a minimum for crack control, contain chaired No. 3 reinforcing bars placed no wider than 18-inch center-to-center each way throughout the slab, and located at mid-slab depth. This slab reinforcement is suggested as a guide "minimum" only; final reinforcement and joint spacing should be determined by the structural engineer. Proper and consistent location of the reinforcement near mid-slab is essential to its performance. The risk of uncontrolled shrinkage cracking is increased if the reinforcement is not properly located within the slab.



Floor slabs should be underlain by a layer of free-draining crushed rock, serving as a deterrent to migration of capillary moisture. The crushed rock layer should be at least four inches thick and graded such that 100 percent passes a one-inch sieve and less than five percent passes a No. 4 sieve. Additional moisture protection may be provided by placing a vapor retarder membrane (at least 10-mils thick) directly over the crushed rock. The membrane should meet or exceed the minimum specifications as outlined in ASTM E1745, and be installed in strict conformance with the manufacturer's recommendations.

Floor slab construction over the past 25 years or more has included placement of a thin layer of sand over the vapor retarder membrane. The intent of the sand is to aid in the proper curing of the slab concrete. However, recent debate over excessive moisture vapor emissions from floor slabs includes concern for water trapped within the sand. As a consequence, we consider the use of the sand layer as optional. The concrete curing benefits should be weighed against efforts to reduce slab moisture vapor transmission.

Subgrade soils will require special moisture conditioning prior to placement of floor slab concrete. Prior to slab concrete placement, the soils to a depth of at least 12 inches should be brought to a uniform, near-saturated moisture condition by liberal watering or sprinkling. Slab subgrade moisture condition should be field checked by our representative within 48 hours prior to slab placement.

Floor Slab Moisture Penetration Resistance

Presaturation of the subgrade soils prior to slab placement will result in wet floor slab subgrade soils. For this reason, it should be assumed that all slabs in living areas, as well as those intended for moisture-sensitive floor coverings or materials, require protection against moisture or moisture vapor penetration. Standard practice includes the sand/gravel and vapor retarder membrane as suggested above. However, the sand/gravel and vapor membrane offer only a limited, first-line of defense against soil-related moisture. Recommendations contained in this report concerning foundation and floor slab design are presented as *minimum* requirements, only from the geotechnical engineering standpoint.

It is emphasized that the use of a vapor membrane below the slab will not "moisture proof" the slab, nor does it assure that slab moisture transmission levels will be low enough to prevent damage to floor coverings or other building components. If increased protection against moisture vapor penetration of slabs is desired, a concrete moisture protection specialist should be consulted. It is commonly accepted that maintaining the lowest practical water-cement ratio in the slab concrete is one of the most effective ways to reduce future moisture vapor penetration of the completed slabs.



Exterior Flatwork and Driveway Construction

Areas to receive exterior concrete flatwork (e.g., sidewalks, patios, driveways, etc.) should be uniformly compacted and moisture conditioned to at least two percent above the optimum moisture content, prior to the placement of the concrete. *Proper moisture conditioning of the subgrade soils is considered essential to the performance of exterior flatwork.* Uniform moisture conditioning of subgrade soils is important to reduce the risk of non-uniform moisture withdrawal from the concrete and the possibility of plastic shrinkage cracks. Practices recommended by the Portland Cement Association for proper placement and curing of concrete should be followed during exterior concrete flatwork construction. Expansion joints should be provided to allow for minor vertical movement of the flatwork. Exterior flatwork should be constructed independent of perimeter building foundations and isolated column foundations by the placement of a layer of felt material between the flatwork and the foundation.

Design of driveway slabs should consider using thickened edges that are at least 12 inches wide and twice the slab thickness, and should be reinforced with No. 3 reinforcing bars placed on maximum 24-inch centers. Reinforcement must be located at mid-slab depth to be effective.

Consideration also should be given to thickening the edges of sidewalks and patios. Irrigated landscaping adjacent to concrete flatwork will help maintain a more uniform moisture in the soils and reduce the potential for differential movement of the flatwork.

Pavement Design

Based upon laboratory test results on the near-surface soils, our experience in the area, and using City of Sacramento standards for varying street right-of-ways, we have calculated the following alternate pavement sections based on the assumed traffic indices, results of R-value testing; and the procedures contained within Chapters 600 to 670 of the *California Highway Design Manual, 6th edition*. An R-value of 10 was used for untreated native clay subgrades, and an R-value of 30 was assumed for preliminary design of clay subgrades amended with at least four percent high calcium or dolomitic quicklime. (Although our experience with amended clayey soils typically results in R-values greater than 50, the City of Sacramento only allows a maximum R-value of 30 for amended soils). The project civil engineer should determine the appropriate pavement section based on anticipated traffic conditions.



TABLE 3 PAVEMENT DESIGN ALTERNATIVES					
Traffic Index (TI)	Street Classification	Untreated Pavement Subgrade R-value = 10		Lime-treated Pavement Subgrade ^(a) R-value = 30	
		Type B Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Type B Asphalt Concrete (inches)	Class 2 Aggregate Base
6.0	Local Residential (53' Right-of-Way)	4**	13	4**	8**
7.0	Minor Collector (71' Right-of-Way)	4**	16	4**	10
8.0	Major Collector (83' Right-of-Way)	5*	18	5*	11

* = Asphalt concrete thickness includes the Caltrans Safety Factor.

** = Minimum thickness per City of Sacramento Standards.

(a) = Lime-treated subgrade should be at least 12 inches thick and possess a minimum R-value of 30 when tested in accordance with CT 301.

We emphasize that the performance of the pavements is critically dependent upon uniform and adequate compaction of the soil subgrade, as well as all engineered fill and utility trench backfill within the limits of the pavements. We recommend that pavement subgrade preparation (i.e. scarification, moisture conditioning and compaction) be performed after underground utility construction is completed and just prior to aggregate base placement. The upper six inches of pavement subgrade soils should be compacted to at least 95 percent relative compaction at no less than the optimum moisture content. All aggregate base should be compacted to at least 95 percent of the maximum dry density.

Materials quality and construction of the structural section should conform to the applicable provisions of the *Caltrans Standard Specifications* and the City of Sacramento Standards, latest editions.

Lime Treatment of Pavement Subgrade Soils

The native clay soils are anticipated to react well with the addition of quicklime (high-calcium or dolomitic) and will enhance the support characteristics of the subgrade and allow for a reduction in the aggregate base section. Chemical treatment of subgrade soils as part of the pavement section would be subject to approval by the City of Sacramento and should generally be performed in accordance with Section 24 of the *Caltrans Standard Specifications*. For estimating purposes only, we recommend a minimum spread rate of at least 4½ pounds of



quicklime per square foot of mixing depth (at least 12 inches). Lime-treated subgrades should be compacted to not less than 95 percent of the ASTM D1557 maximum dry density, at a moisture content of at least two percent above the optimum moisture content.

If chemical treatment alternates are selected for use at this site, additional testing should be performed during construction to verify that the design parameters are achieved in the field. Samples of the field-mixed soil and lime should be collected and tested for a minimum R-value of 30 when tested in accordance with California Test 301.

Pavement Subdrains

Historically, groundwater elevations in the area have been encountered as shallow as three to four feet below the existing ground surface due to high water levels of the nearby Sacramento River, seasonal precipitation, and local irrigation practices. Therefore, we recommend that pavement subdrains be provided in street cuts that exceed one foot below existing surface grades. The purpose of the subdrains will be to prevent the infiltration and saturation of the supporting aggregate base and subgrade soils.

We recommend that subsurface drainage for pavement subgrade soils consist of a continuous drain constructed at the edges of pavement areas. Subsurface drains should extend at least 50 feet laterally in both directions from each drainage inlet. Additional drainage pipe lengths may be required depending upon actual site conditions.

The subsurface drainage trench should be at least 12 inches in width and should extend to a depth of at least 18 inches below final pavement subgrade elevation. The trench should be filled with Class 2 permeable material (Caltrans Standard Specifications, Section 68-1.025) or crushed rock graded so that 100 percent passes a one-inch sieve. If crushed rock is used, the trench should be lined with a non-woven geotextile filter fabric (Amoco 4545 or equivalent) and properly overlapped in accordance with the manufacturer's recommendations. Four-inch diameter, perforated Schedule 40 PVC should be placed with the perforations down and slope at a gradient no less than one percent fall directed to an appropriate discharge point. The geotextile filter fabric should be overlapped on top. Aggregate base placed above the drainage trenches should be compacted to at least 95 percent of the ASTM D1557 maximum dry density.

In addition, for pavement areas that are excavated less than one foot below existing surface grades and where drop inlets or other surface drainage features are to be constructed, we recommend that weep holes be provided at the base/subgrade level to allow free drainage of collected water.



Site Drainage

Site drainage should provide positive drainage of surface water away from structures and prevent ponding of water adjacent to foundations. The grades adjacent to structures should be sloped away from foundations at a minimum two percent. We suggest consideration be given to connecting all roof downspouts to nonperforated drainage pipes that convey water away from the structures to available drainage features, or discharging downspouts onto concrete or asphalt concrete surfaces that slope away from the structures. Ponding of surface water should not be allowed near foundations.

Geotechnical Engineering Observation and Testing During Earthwork

Site preparation should be accomplished in accordance with the recommendations of this report. Geotechnical testing and observation during construction is considered a continuation of our geotechnical engineering investigation. Wallace-Kuhl & Associates should be retained to provide testing and observation services during site preparation, earthwork, and foundation construction at the project to verify compliance with this geotechnical report and the project plans and specifications, and to provide consultation as required during construction. These services are beyond the scope of work authorized for this investigation.

Section 1803.5.8 Compacted Fill Material of the 2010 CBC requires that the geotechnical engineering report provide a number and frequency of field compaction tests to determine compliance with the recommended minimum compaction. Many factors can effect the number of tests that should be performed during the course of construction, such as soil type, soil moisture, season of the year and contractor operations/performance. Therefore, it is crucial that the actual number and frequency of testing be determined by the Geotechnical Engineer during construction based on their observations, site conditions, and difficulties encountered. As a preliminary guideline we recommend the following minimum tests:

- mass grading: one test per 500 cubic yards of compacted fill or one per day of work, whichever is greater
- final subgrade preparation: one test per 5,000 square feet
- aggregate base compaction: one test per 5,000 square feet
- utility backfill: one test per foot of backfill for every 150 linear feet of trench

In the event that Wallace-Kuhl & Associates is not retained to provide geotechnical engineering observation and testing services during construction, the Geotechnical Engineer retained to provide these services should indicate in writing that they agree with the recommendations of this report, or prepare supplemental recommendations as necessary. A final report by the "Geotechnical Engineer" should be prepared upon completion of the project.



LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed project, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used our engineering judgment based upon the information provided and the data generated from our investigation.

This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report was prepared. No warranty, either express or implied, is provided.

If the proposed construction is modified or re-sited; or, if it is found during construction that subsurface conditions differ from those we encountered at our test pit locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.

We emphasize that this report is applicable only to the proposed construction and the investigated site, and should not be utilized for construction on any other site.

The conclusions and recommendations of this report are considered valid for a period of two years. If design is not completed and construction has not started within two years of the date of this report, the report must be reviewed and updated if necessary.

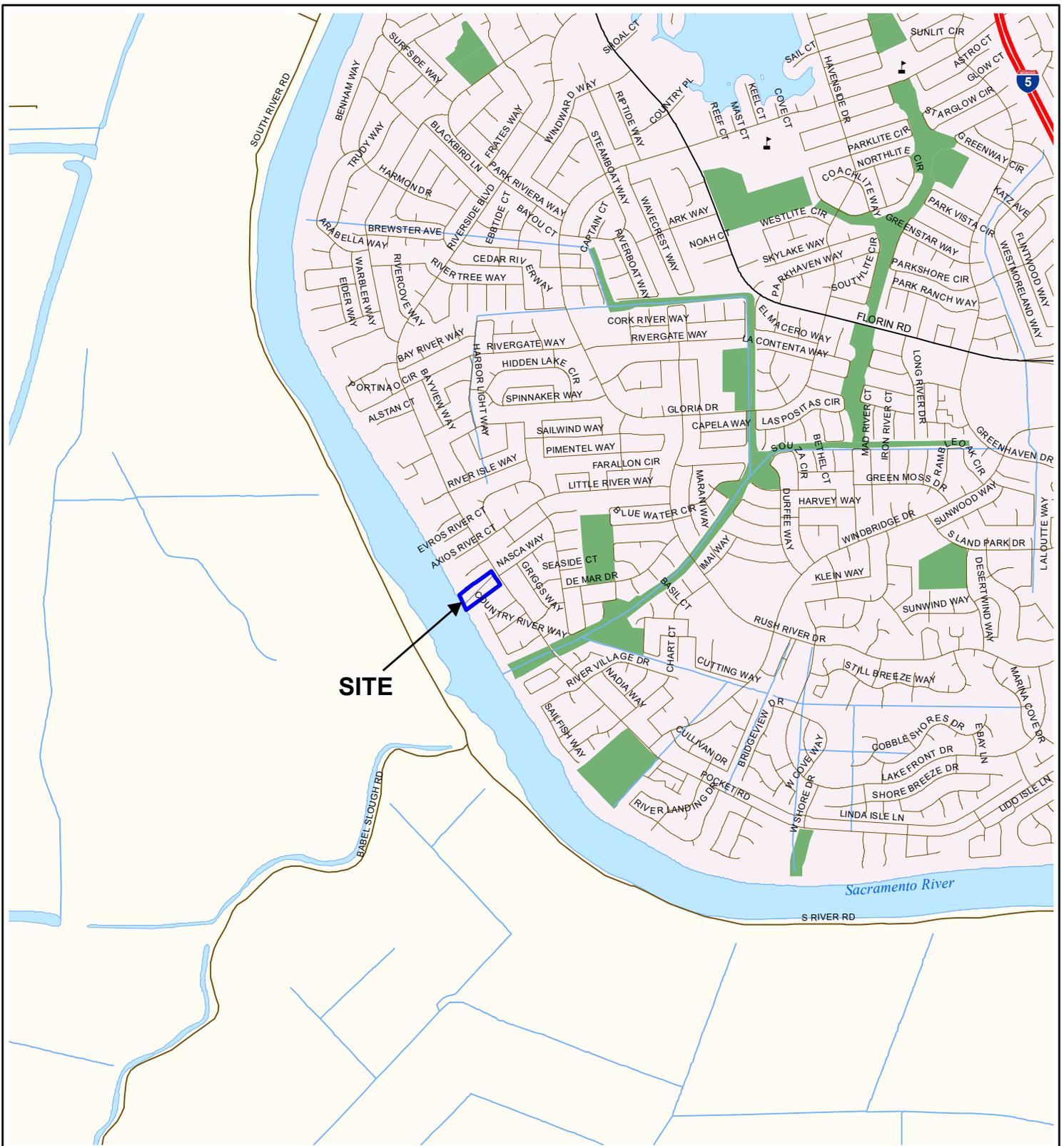
Wallace - Kuhl & Associates



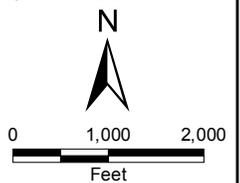
Gerard J. Follettie
Staff Engineer

Stephen L. French
Senior Engineer





Street data courtesy of Sacramento and Yolo Counties.
 Hydrography courtesy of the U.S. Geological Survey
 acquired from the GIS Data Depot, December, 2007.
 Projection: NAD 83, California State Plane, Zone II



VICINITY MAP
 7446 POCKET ROAD
 Sacramento, California

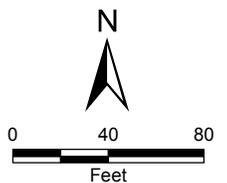
FIGURE 1	
DRAWN BY	TJC
CHECKED BY	SLF
PROJECT MGR	SLF
DATE	8/13
WKA NO. 9816.01	



Adapted from a drawing prepared by JTS Engineering Consultants, Inc., dated August 6, 2007.
 Projection: NAD 83, California State Plane, Zone II

Legend

-  Approximate test pit location
-  Approximate fill boundary



SITE PLAN
 7446 POCKET ROAD
 Sacramento, California

FIGURE 2	
DRAWN BY	TJC
CHECKED BY	SLF
PROJECT MGR	SLF
DATE	8/13
WKA NO. 9816.01	

**LOGS OF TEST PITS
7446 POCKET ROAD
Excavated July 25, 2013
WKA No. 9816.01**

TEST PIT 1

0' to 1½' Brown, slightly moist, very loose, gravelly, cobbly, sandy silt (ML) - FILL
 1½' to 2½' Dark brown, moist, silty clay (CL)
 2½' to 8' Brown, moist, sandy silt (ML)
 8' to 12' Dark brown, very moist, silty fine sand (SM)
 Test Pit terminated at 12 feet
 Excavated sidewalls remained vertical
 Groundwater was not encountered
 Bulk sample TP1 retrieved from 2' to 3½'
 Drive sample retrieved from 2' to 2½'
 Moisture = 21.2%
 Dry Unit Weight = 85 pcf

TEST PIT 2

0' to 1½' Brown, slightly moist, very loose, gravelly, cobbly, sandy silt (ML) - FILL
 1½' to 2' Brown, moist, silty clay (CL)
 2' to 6' Brown, very moist, sandy silt (ML)
 6' to 8' Brown, very moist, clayey silt (ML)
 8' to 12' Brown, very moist, silty fine sand (SM)
 Test Pit terminated at 12 feet
 Excavated sidewalls remained vertical
 Groundwater was not encountered
 Bulk sample TP2 retrieved from 0' to 1½'
 Bulk sample TP2 retrieved from 2' to 3½'
 Drive sample retrieved from 1½' to 2'
 Moisture = 26.4%
 Dry Unit Weight = 78 pcf

TEST PIT 3

0' to 1' Brown, slightly moist, very loose, gravelly, cobbly, sandy silt (ML) - FILL
 1' to 1½' Dark brown, moist, silty clay (CL)
 1½' to 6' Brown, moist, sandy silt (ML)
 6' to 11' Dark brown to brown, very moist, silty fine sand (SM)
 Test Pit terminated at 11 feet
 Excavated sidewalls remained vertical
 Groundwater was not encountered
 Bulk sample TP3 retrieved from 1' to 3'
 Drive sample retrieved from 1' to 1½'
 Moisture = 14.0%
 Dry Unit Weight = 77 pcf



LOGS OF TEST PITS
7446 POCKET ROAD
Sacramento, California

FIGURE 3	
DRAWN BY	TJC
CHECKED BY	SLF
PROJECT MGR	SLF
DATE	8/13
WKA NO. 9816.01	

LOGS OF TEST PITS (continued)
7446 POCKET ROAD
Excavated July 25, 2013
WKA No. 9816.01

TEST PIT 4

0' to 1' Brown, slightly moist, very loose, gravelly, cobbly, sandy silt (ML) - FILL
 1' to 4' Dark brown, moist, silty clay (CL)
 4' to 7' Brown, moist, sandy silt (ML)
 7' to 10' Brown, very moist, silty fine sand (SM)
 Test Pit terminated at 10 feet
 Excavated sidewalls remained vertical
 Groundwater was not encountered
 Bulk sample TP4 retrieved from 2' to 4'
 Drive sample retrieved from 2' to 2½'
 Unconfined Compressive Strength = 0.7 tsf
 Moisture = 17.4%
 Dry Unit Weight = 81 pcf

TEST PIT 5

0' to 1½' Brown, slightly moist, very loose, gravelly, cobbly, sandy silt (ML) - FILL
 1½' to 3½' Dark brown, moist, silty clay (CL)
 3½' to 6' Brown, moist, sandy silt (ML)
 6' to 10' Brown, very moist, silty fine sand (SM)
 Test Pit terminated at 10 feet
 Excavated sidewalls remained vertical
 Groundwater was not encountered
 Bulk sample TP5 retrieved from 1½' to 3½'
 Drive sample retrieved from 1½' to 2'
 Moisture = 14.5%
 Dry Unit Weight = 89 pcf

TEST PIT 6

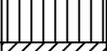
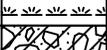
0' to 1' Brown, slightly moist, very loose, gravelly, cobbly, sandy silt (ML) - FILL
 1' to 3' Dark brown, moist, silty clay (CL)
 Test Pit terminated at 3 feet
 Excavated sidewalls remained vertical
 Groundwater was not encountered
 Bulk sample TP6 retrieved from 1' to 3'



LOGS OF TEST PITS
 7446 POCKET ROAD
 Sacramento, California

FIGURE 4	
DRAWN BY	TJC
CHECKED BY	SLF
PROJECT MGR	SLF
DATE	8/13
WKA NO. 9816.01	

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		SYMBOL	CODE	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of soil > no. 200 sieve size)	<u>GRAVELS</u> (More than 50% of coarse fraction > no. 4 sieve size)	GW		Well graded gravels or gravel - sand mixtures, little or no fines
		GP		Poorly graded gravels or gravel - sand mixtures, little or no fines
		GM		Silty gravels, gravel - sand - silt mixtures
		GC		Clayey gravels, gravel - sand - clay mixtures
	<u>SANDS</u> (50% or more of coarse fraction < no. 4 sieve size)	SW		Well graded sands or gravelly sands, little or no fines
		SP		Poorly graded sands or gravelly sands, little or no fines
		SM		Silty sands, sand - silt mixtures
		SC		Clayey sands, sand - clay mixtures
FINE GRAINED SOILS (50% or more of soil < no. 200 sieve size)	<u>SILTS & CLAYS</u> <u>LL < 50</u>	ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL		Organic silts and organic silty clays of low plasticity
	<u>SILTS & CLAYS</u> <u>LL ≥ 50</u>	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH		Inorganic clays of high plasticity, fat clays
		OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS		Pt		Peat and other highly organic soils
ROCK		RX		Rocks, weathered to fresh
FILL		FILL		Artificially placed fill material

OTHER SYMBOLS

	= Drive Sample: 2-1/2" O.D. Modified California sampler
	= Drive Sampler: no recovery
	= SPT Sampler
	= Initial Water Level
	= Final Water Level
- - - - -	= Estimated or gradational material change line
—————	= Observed material change line
<u>Laboratory Tests</u>	
PI = Plasticity Index	
EI = Expansion Index	
UCC = Unconfined Compression Test	
TR = Triaxial Compression Test	
GR = Gradational Analysis (Sieve)	
K = Permeability Test	

GRAIN SIZE CLASSIFICATION

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL coarse (c) fine (f)	3" to No. 4 3" to 3/4"	76.2 to 4.76 76.2 to 19.1
	3/4" to No. 4	19.1 to 4.76
SAND coarse (c) medium (m) fine (f)	No. 4 to No. 200	4.76 to 0.074
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40	2.00 to 0.420
	No. 40 to No. 200	0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074



UNIFIED SOIL CLASSIFICATION SYSTEM

7446 POCKET ROAD
Sacramento, California

FIGURE 5

DRAWN BY	TJC
CHECKED BY	SLF
PROJECT MGR	SLF
DATE	8/13

WKA NO. 9816.01

APPENDICES



APPENDIX A
General Project Information, Field and Laboratory Testing



APPENDIX A

A. GENERAL INFORMATION

The performance of a geotechnical engineering investigation at the site of the proposed 7446 Pocket Road residential subdivision, located on the west side of Pocket Road, approximately 160 south of Pinios River Court in Sacramento, California, was authorized by Rachel Bardis on July 22, 2013. Authorization was for an investigation as described in our proposal letter dated July 16, 2013, sent to our client, B & B Homes LLC, whose mailing address is 10630 Mather Boulevard, Mather, California 95655; telephone (916) 801-9500.

In performing this investigation, we made reference to a drawing titled Conceptual Grading + Utility Plan, 7446 Pocket Road, dated August 6, 2007, prepared by JTS Engineering Consultants, Inc.

B. FIELD EXPLORATION

Six exploratory test pits were excavated across the site on July 25, 2013, utilizing a Case 580M rubber-tire backhoe equipped with a 24-inch wide bucket. The test pits were excavated to maximum depths of three to 12 feet at the approximate locations indicated on Figure 2. At various intervals, relatively undisturbed soil samples were recovered from the test pits with a 6-inch long, 2¼-inch O.D., 2-inch I.D. sampler driven by a 10-pound, hand-operated slide hammer. A bulk sample of the anticipated street subgrade soils also was collected from Test Pit 6.

The samples were retained in clean, 2-inch diameter by 6-inch long, thin-walled brass tubes contained within the sampler. Immediately after recovery, the field engineer visually classified the soil in the tubes and the ends of the tubes were sealed to preserve the natural moisture contents. All samples were taken to our laboratory for additional soil classification and selection of samples for testing.

Descriptions of the soils encountered by the test pits are presented on Figures 3 and 4. An explanation of the Unified Soil Classification System symbols used in the descriptions is presented on Figure 5.

C. LABORATORY TESTING

Selected undisturbed samples of the soils were tested to determine dry unit weight (ASTM D2937), natural moisture content (ASTM D2216) and unconfined compressive tests (ASTM D2166). The results of these tests are included on the Logs of Test Pits at the test pit location each sample was obtained.



One bulk sample of near-surface soil was subjected to Expansion Index tests (ASTM D4829). The results of the test are presented on Figure A1.

The bulk sample of anticipated pavement subgrade soil was subjected to Resistance value testing (CT 301). The results of the R-value test, which were used in the pavement design, are presented on Figure A2.

A near-surface soil sample was submitted to Sunland Analytical to determine the soil pH and minimum resistivity (California Test 643), sulfate concentration (California Test 417) and chloride concentration (California Test 422). The results of these tests are presented on Figure A3.



EXPANSION INDEX TEST RESULTS

ASTM D4829

MATERIAL DESCRIPTION: Brown, silty clay

LOCATION: TP5

Sample Depth	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
1½'-3½'	14.6	29.4	92.9	24

CLASSIFICATION OF EXPANSIVE SOIL *

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
Above 130	Very High

* From ASTM D4829, Table 1



EXPANSION INDEX TEST RESULTS

7446 POCKET ROAD

Sacramento, California

FIGURE A1

DRAWN BY TJC

CHECKED BY SLF

PROJECT MGR SLF

DATE 8/13

WKA NO. 9816.01

RESISTANCE VALUE TEST RESULTS

(California Test 301)

MATERIAL DESCRIPTION: Brown, silty clay

LOCATION: TP6 (1'-3')

Specimen No.	Dry Unit Weight (pcf)	Moisture @ Compaction (%)	Exudation Pressure (psi)	Expansion Pressure		R Value
				(dial)	(psf)	
1	99	22.4	204	41	178	10
2	100	21.3	279	42	182	10
3	105	19.8	481	126	546	29

R-Value at 300 psi exudation pressure = 11



RESISTANCE VALUE TEST RESULTS

7446 POCKET ROAD

Sacramento, California

FIGURE A2

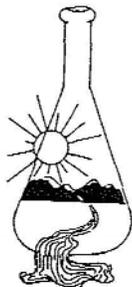
DRAWN BY TJC

CHECKED BY SLF

PROJECT MGR SLF

DATE 8/13

WKA NO. 9816.01



Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 07/31/2013

Date Submitted 07/26/2013

To: Joe Follettie
Wallace-Kuhl & Assoc.
3050 Industrial Blvd.
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney ↗
General Manager \ Lab Manager (

The reported analysis was requested for the following location:
Location : 9816.01-7446 POCKET Site ID : TP1 @ 2-3.5 FT.
Your purchase order number is 3546.
Thank you for your business.

* For future reference to this analysis please use SUN # 65170-134842.

EVALUATION FOR SOIL CORROSION

Soil pH	7.87		
Minimum Resistivity	1.63	ohm-cm (x1000)	
Chloride	16.4 ppm	00.00164	%
Sulfate	10.8 ppm	00.00108	%

METHODS

pH and Min. Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422



CORROSION TEST RESULTS

7446 POCKET ROAD
Sacramento, California

FIGURE A3

DRAWN BY	TJC
CHECKED BY	SLF
PROJECT MGR	SLF
DATE	8/13

WKA NO. 9816.01

APPENDIX B
Earthwork Specification



APPENDIX B
EARTHWORK SPECIFICATIONS
7446 POCKET ROAD SUBDIVISION
Sacramento, California
WKA No. 9816.01

GEOTECHNICAL ENGINEERING REPORT

A Geotechnical Engineering Report (WKA No. 9816.01, dated August 23, 2013), has been prepared for this project by Wallace - Kuhl & Associates of West Sacramento, California; telephone (916) 372-1434; facsimile (916) 372-2565.

CLEARING, GRUBBING AND PREPARING BUILDING PADS AND PAVEMENT AREAS

Initially, the site shall be cleared of vegetation, trees and bushes including root systems, deleterious materials; and, any utilities to be relocated or abandoned. Any underground utilities designated to be removed or relocated shall include the trench backfill. Trees and shrubs designated to be removed shall include the entire rootball and all roots larger than one-half inch ($\frac{1}{2}$ ") in diameter. Excavations and depressions resulting from the removal of such items shall be cleaned out to firm, undisturbed soil and backfilled with suitable materials in accordance with these specifications.

Surfaces upon which fill is to be placed or that will remain at grade or achieved by excavation shall be plowed or scarified to a depth of at least twelve inches (12") and moisture conditioned to at least two percent (2%) above the optimum moisture content.

After the foundation for the fill has been adequately processed, it shall be compacted to not less than ninety percent (90%) of the ASTM D1557 maximum dry density.

MATERIALS

All fill shall be of approved local materials from required excavations, supplemented by imported fill, if necessary. Approved local materials are defined as local soils free from rubble, oversized rocks, rubbish and vegetation, and shall be approved by the Geotechnical Engineer prior to use. Imported fill materials shall have an Expansion Index of forty (40) or less and free of particles greater than three-inches (3") in maximum dimension. Imported fill materials used within pavement areas shall have a minimum Resistance value of not less than ten (10) when tested in accordance with California Test 301.



PLACING, SPREADING AND COMPACTING FILL MATERIAL

The selected fill material shall be placed in layers which when compacted shall not exceed six inches (6") in thickness. Each layer shall be spread evenly, thoroughly mixed and compacted to not less than ninety percent (90%) of ASTM D1557 maximum dry density. The moisture content of native clay fill materials shall be at least two percent (2%) above the optimum moisture content during compaction operations. Compaction shall be undertaken with a heavy, self-propelled, sheepsfoot compactor capable of achieving the specified density and shall be accomplished while the fill material is at the required moisture content. Each layer shall be compacted over its entire area until the desired density has been obtained.

FIELD DENSITY TESTS

Field density tests shall be made by the Geotechnical Engineer or his representative after compaction of each layer of fill. Where compaction equipment has disturbed the surface to a depth of several inches, density tests shall be taken in the compacted material below the disturbed surface. Additional layers of fill shall not be spread until field density tests indicate the specified density has been obtained.

FINAL SUBGRADE PREPARATION

The upper twelve inches (12") of all final building pad subgrades shall be uniformly and firmly compacted to ninety percent (90%) of the ASTM D1557 maximum dry density at a moisture content at least two percent (2%) above the optimum for clayey subgrades or at least optimum for granular subgrades, regardless of whether final subgrade elevation is attained by filling, excavation or left at existing grade.

The upper six inches (6") of final pavement subgrades should be uniformly moisture conditioned to at least the optimum moisture content and uniformly compacted to at least ninety five percent (95%) of the maximum dry density.

TESTING AND OBSERVATION

All grading operations shall be tested and observed by the Geotechnical Engineer, who is serving as the representative of the Owner. Earthwork shall not be performed without prior notification and approval of the Geotechnical Engineer. The Contractor shall notify the Geotechnical Engineer at least two (2) working days prior to commencement of any aspect of the site earthwork.



SEASONAL LIMITS

Fill material shall not be placed, spread or rolled during unfavorable weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until field tests indicate that the moisture contents of the subgrade and fill materials are satisfactory.

/

