Draft

RAZNICK MIXED USE PROJECT

Initial Study / Mitigated Negative Declaration

Prepared for
City of Calabasas

July 2017

ESA

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626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300
www.esassoc.com

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TABLE OF CONTENTS

Raznick Mixed Use Initial Study

Appendices

Page

Figures

Tables

SECTION 1
Project and Agency Information

1.	Project Title:	Raznick Mixed Use
2.	Lead Agency Name and Address:	City of Calabasas 100 Civic Center Way Calabasas, CA 91302
3.	Contact Person and Phone Number:	Michael Klein, 818.224.1710
4.	Project Location:	23480 Park Sorrento, Calabasas, CA 91302
5.	Project Sponsor's Name and Address:	Ken Stockton 26500 W. Agoura Road #663 Calabasas, CA 91302
6.	General Plan Designation(s):	Business Professional Office (B-PO)
7.	Zoning Designation(s):	Commercial Office (CO)

8. Description of Project:

   The proposed Raznick Mixed Use project (proposed project) includes the demolition of two existing commercial buildings and a parking lot, and construction of a four-story senior apartment building, a one-story stand-alone commercial building, and associated grade-level parking. The proposed four-story apartment building would be approximately 43,000 square feet (SF) and would include 42 units surrounding a central outdoor courtyard located on the second floor. The ground floor of the apartment building would include two lobbies, mail room, office space, kitchenette, lounge area, recreation room, and a 38-stall parking garage. The apartment building would consist of nine studio units, 21 one-bedroom units, and 12 two-bedroom units. Units would range in size from 703 SF to 1,046 SF. The proposed stand-alone one-story commercial building would be located in the northwest portion of the project site. The approximately 1,620 SF building would consist of two commercial retail units. The project site would be accessible from a newly configured driveway off Park Sorrento. Parking would be in compliance with state law for projects that provide residential units designated for affordable housing, with a total of 70 parking stalls and 48 bicycle stalls for residents, guests, and commercial uses.

9. Surrounding Land Uses and Setting:

The project is located at 23480 Park Sorrento on Assessor Parcel Numbers (APN) 2068-005-012 and 2068-005-011. The project site is north of Calabasas Lake and south of U.S. Highway 101. The approximately two-acre project site is bordered by Park Sorrento to the north, the Calabasas Tennis and Swim Center to the east and south, and a mixed use development to the west.

10. Other public agencies whose approval is required:

- A Section 404 Permit from the U.S. Army Corps of Engineers (USACE)
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB)
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW)
- Compliance with Section 402 to conform to the National Pollution Discharge Elimination System permit requirements, including preparing a Standard Urban Storm Water Mitigation Plan (SUSMP) and Storm Water Pollution Prevention Plan

SECTION 2
Project Description

2.1 Introduction

The proposed Park Sorrento project (proposed project) is located in the City of Calabasas (City). The proposed project would demolish two existing commercial office buildings and a parking lot, and construct a four-story senior apartment building and a stand-alone commercial retail building. The proposed project would include a Site Plan Review; Conditional Use Permit; Oak Tree Permit; a General Plan Amendment to change the land use designation from Business Professional Office (B-PO) to Mixed Use 0.95 (MU 0.95); a Zone Change from Commercial Office (CO) to Commercial Mixed Use (CMU); and a height concession for providing affordable housing.

2.2 Project Location and Site Characteristics

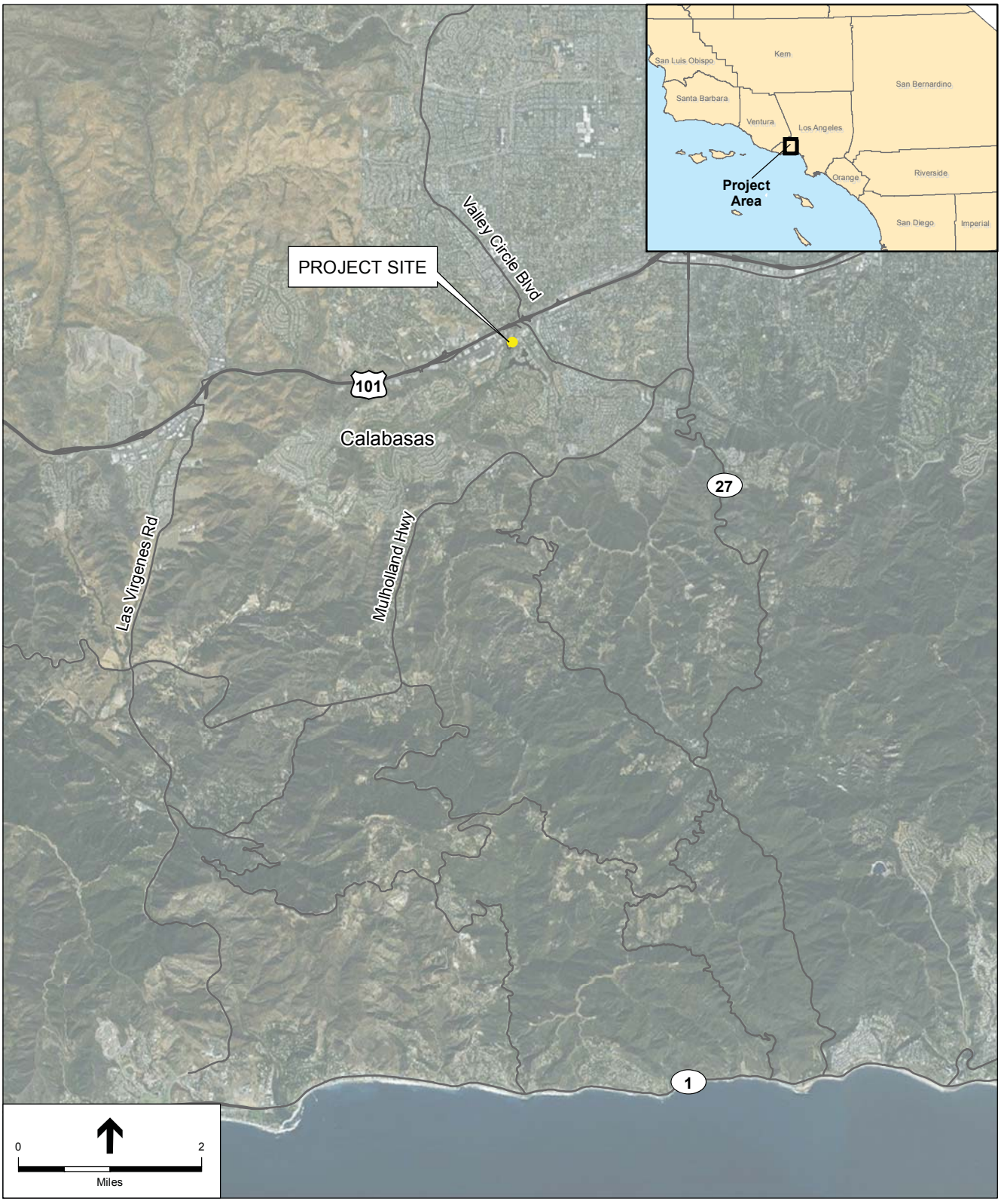
Regional Location

The City encompasses a land area of approximately 13.3 square miles, and is located in the southwestern region of the San Fernando Valley. The City is approximately 22 miles northwest of downtown Los Angeles, located between the foothills of the Santa Monica and Santa Susanna Mountains (see **Figure 2-1**). The City is bordered by the community of Hidden Hills to the north, the community of Woodland Hills to the northeast, the Santa Monica Mountains Recreation area to the south and southeast, the City of Agoura Hills to the west.

Project Location and Site Characteristics

The project is located at 23480 Park Sorrento on Assessor Parcel Numbers (APN) 2068-005-012 and 2068-005-011. The project site is north of Calabasas Lake and south of Highway 101. The approximately two-acre project site is bordered by Park Sorrento to the north, the Calabasas Tennis and Swim Center to the east and south, and a mixed-use development to the west (see **Figure 2-2**).

A majority of the project site is developed with an existing parking lot and two commercial office buildings, constructed in 1974. The two-story commercial buildings are approximately 26,360 square feet (SF) in total building size and have a footprint of approximately 14,000 SF. The commercial buildings are located at the center of the site, with a parking lot located along the western portion of the project site. The parking lot is approximately 17,000 SF.

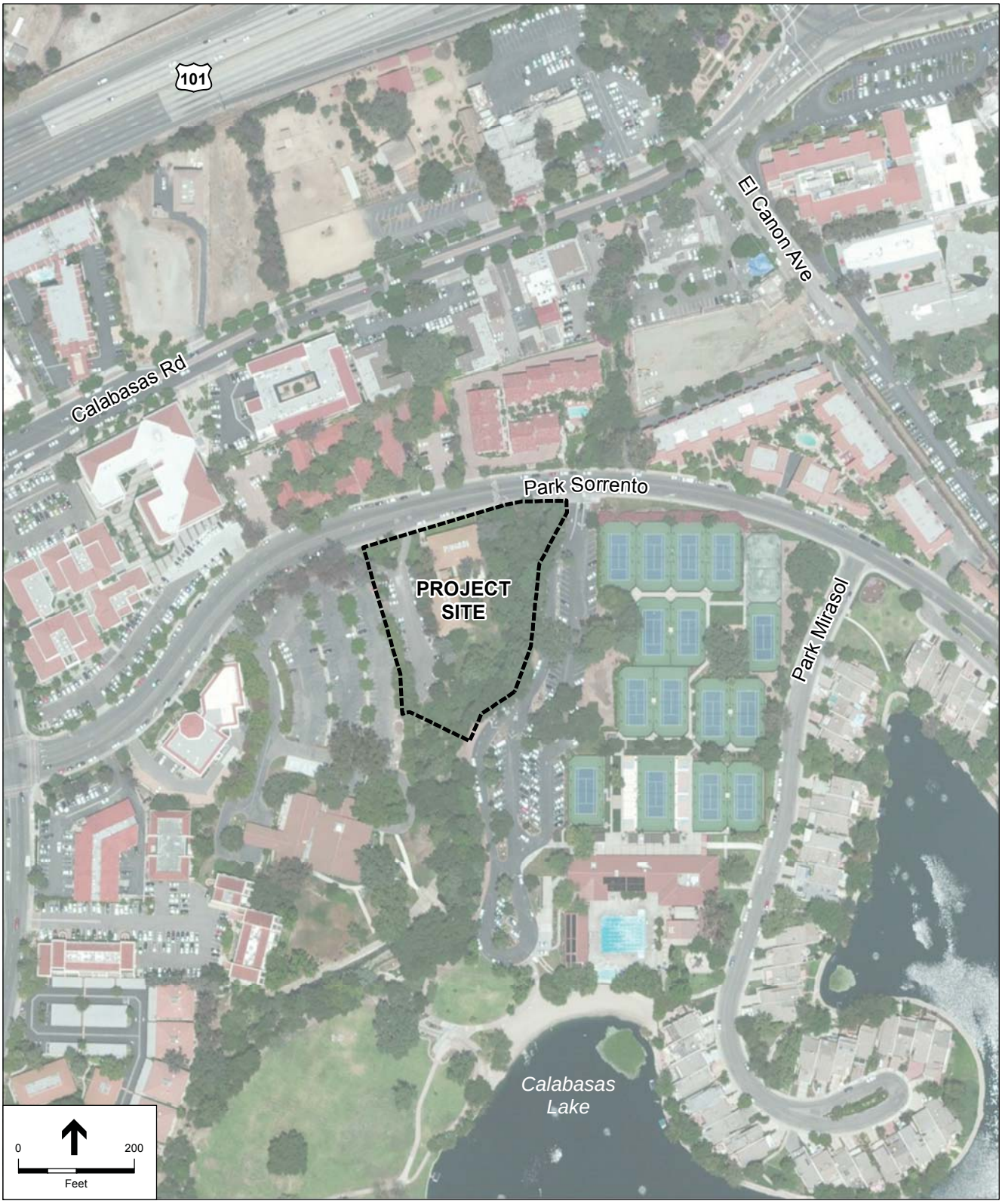


SOURCE: ESRI Imagery

Park Sorrento . 140358.45

Figure 2-1

Regional Location Map



SOURCE: ESRI Imagery

Park Sorrento . 140358.45

Figure 2-2

Project Vicinity Map

The project is located north of McCoy Canyon Creek which bounds the eastern and southern boundaries of the project site. The stream contains a steady flow of water throughout the year and connects to Arroyo Calabasas, which is a direct tributary to the Los Angeles River. The project site contains 66 native oak trees, including ten Heritage oaks. The trees are concentrated along the drainage in the southeast portion of the site.

2.3 Project Objectives

Section 15124(b) of the California Environmental Quality Act (CEQA) Guidelines states that the project description shall contain "*a statement of the objectives sought by the proposed project*." Section 15124(b) further states that "*the statement of objectives should include the underlying purpose of the project.*" As set forth by the CEQA Guidelines, the list of objectives that the project applicant and City seek to achieve for the proposed project is provided below:

- Provide senior housing with 10 percent of the units dedicated to affordable housing.
- Provide commercial retail space.

2.4 Project Components

The project applicant proposes to demolish two existing commercial buildings and remove a parking lot, and develop a four-story senior apartment building, a one-story stand-alone commercial building, and associated grade level parking. **Figure 2-3** depicts the site plan for the proposed project.

The proposed four-story apartment building would be approximately 43,000 SF and would include 42 age restricted (ages 55 or older) units surrounding a central outdoor courtyard. The ground floor of the apartment building would include two lobbies, mail room, office space, kitchenette, lounge area, recreation room, and a 38-stall parking garage. Apartment units would be located on the second through fourth floors, each with private balconies. The apartment building would consist of nine studio units, 21 one-bedroom units, and 12 two-bedroom units. Units would range in size from 703 SF to 1,046 SF. The proposed project would include five affordable housing units for very low income residents. The proposed stand-alone one-story commercial building would be located in the northwest portion of the project site. The approximately 1,620 SF building would consist of two commercial retail units. **Table 2-1** provides a square footage breakdown of the proposed residential and commercial components.

SOURCE: Ken Stockton Architects, Inc.

Park Sorrento . 140358.45

Figure 2-3
Site Plan

TABLE 2-1
PROPOSED BUILDING SQUARE FOOTAGE

Use	Area SF	Units
Lobby 1	2,683 SF	-
Lobby 2	847 SF	-
Mail Room	69 SF	-
Office	203 SF	-
Recreation Room	1,106 SF	-
Parking Garage	14,738 SF	-
Residential Units		
Plan A (1 bedroom/1 bathroom)	729 SF	6
Plan B (1 bedroom/1 bathroom)	703 SF	6
Plan C (2 bedroom/2 bathroom)	950 SF	6
Plan C – Alt (2 bedroom/2 bathroom)	935 SF	3
Plan D (1 bedroom/1.5 bathroom)	1,046 SF	3
Plan E (1 bedroom/1.5 bathroom)	936 SF	3
Plan F (1 bedroom/1 bathroom)	820 SF	3
Plan G (2 bedroom/2 bathroom)	921 SF	3
Plan H (Studio/1 bathroom)	723 SF	9
Commercial	1,620 SF	-

NOTE: Area SF = Total Gross Square Footage
SOURCE: Ken Stockton Architects, Inc., 2016.

The project site would be accessible from a newly configured driveway off Park Sorrento. Parking would be in compliance with state law for projects that provide senior housing and residential units designated for affordable housing, with a total of 70 parking stalls and 48 bicycle stalls for residents, guests, and commercial uses. There would be a 38-stall parking garage on the first floor of the residential building, and a surface parking lot split by a sliding electric gate. The northern portion of the surface parking lot would provide 11 parking spaces for commercial uses and the public, while the southern portion of the surface parking lot would provide 21 covered and uncovered parking spaces to residents and guests. A carport structure would be located within the southern half of the surface parking lot. The proposed project would include the required ADA compliant spaces.

The proposed buildings would be constructed with neutral earth tones, stone veneer, exposed wood, arched and square windows, and Spanish roof tiles. The commercial component would achieve a minimum Leadership in Energy and Environmental Design (LEED) “Certified” certification or equivalent.

Development of the proposed project would include the provision of utility infrastructure, including storm water drains, sewer, water, electricity, natural gas, and telecommunications. The

infrastructure for the proposed project would tie into the existing utility lines and upgrade as necessary to accommodate the proposed development.

Retaining walls would be constructed east and south of the proposed residential building below a walking path adjacent to McCoy Canyon Creek to protect the proposed project from potential flooding. A retaining wall would also be located west of the proposed parking lot to accommodate the proposed development. Other drainage improvements would include a stormwater capture and use system in the southwest portion of the project site, filtered catch basins within the surface parking lots and within the parking garage, pervious paving stones, walls drains, and concrete gutters.

Landscaping would consist of pervious paving stones and a mix of trees, shrubs, and groundcover. Pervious surfaces would cover approximately 60 percent of the project site. The proposed project's landscaping would not require a permanent irrigation system beyond a maximum two-year establishment period.

Construction Process and Timeline

Preparation of the project site would include the demolition of two commercial structures, land clearing, grading, and excavation activities. Construction would occur over a 12-month period, beginning in the first quarter of 2018. If approved, the allowed days and hours for construction activity are Monday through Friday 7:00 a.m. to 6:00 p.m., and Saturday from 8:00 a.m. to 5:00 p.m. No construction would be permitted on Sunday or on City holidays without prior written request and approval from the Community Development Department.

The proposed project would require approximately 1,775 cubic yards of soil export. No soil would be imported for the proposed project. Exported fill and demolition materials would be recycled and transported from the site to the Calabasas landfill, located at 5300 Lost Hills Road, which is located approximately four miles west of the project site.

Heavy equipment such as backhoes, excavators, compactors, crawler tractors, dump trucks, loaders, haul trucks, paving equipment, rollers, tractors, and trenchers would be used during construction. Approximately 28 construction workers would be expected to work onsite at any given time.

2.5 Required Approvals

Actions and approvals required from the City in association with the proposed project include:

- Approval of a Site Plan Review;
- Approval of a Conditional Use Permit;
- Approval of a General Plan Amendment;
- Approval of a Zone Change;
- Approval of an Oak Tree Permit; and

- Approval of associated building and engineering permits.
- Approval of Demolition Permits

Actions and approvals that may be required from other agencies for the proposed project include:

- A Section 404 Permit from the United States Army Corp of Engineers (USACE)
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB)
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW)
- Compliance with Section 402 to conform to the National Pollution Discharge Elimination System permit requirements, including preparing a Standard Urban Storm Water Mitigation Plan (SUSMP) and Construction General Permit.

2.6 Project Baseline

Baseline assumptions used for the project impact analysis includes the project site as two currently developed and operational commercial buildings and its associated parking lot.

SECTION 3
Environmental Checklist

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

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

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Signature	Date
Michael Klein	City of Calabasas
Printed Name	For

Aesthetics

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
1. AESTHETICS — Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☒	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Discussion

a) *Would the project have a substantial adverse effect on a scenic vista?*

A scenic vista generally provides focal views of objects, settings, or features of visual interest; or panoramic views of large geographic areas of scenic quality, primarily from a given vantage point. A significant impact to a scenic vista would occur if the proposed project introduced an incompatible use that would obstruct, interrupt, or diminish a valued focal and/or panoramic view. The primary scenic vistas in the vicinity of the project site are of the Santa Monica Mountains to the south; the San Fernando Valley to the north; and the rural open character of lands along Las Virgenes Road south of Lost Hills Road, and lands along Mulholland Highway west of Old Topanga Canyon (City of Calabasas 2015). However, there are no publicly available scenic vistas of the Santa Monica Mountains, San Fernando Valley, Las Virgenes Road, or Mulholland Highway through the project site. Existing buildings and landscaping block potential views to these scenic vistas. In addition, the riparian vegetation along McCoy Canyon Creek blocks views to and from Calabasas Lake and the surrounding parkland. Therefore, the proposed project would not block, disrupt, or otherwise have adverse effects on a scenic vista, and less than significant impacts would occur.

Less-than-Significant Impact.

b) *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

Highway 101 is the nearest highway to the proposed project, located approximately 850 feet north of the project site. While Highway 101 is not officially designated as a scenic highway by the California Highway Mapping System, it is listed as being eligible (Caltrans 2016). In addition, the City's 2030 General Plan describes Highway 101 as a heavily traveled scenic corridor (City of Calabasas 2015). Preservation of significant ridgelines, rolling hills, and oak woodlands, specifically along the Calabasas Grade, are a

priority. The project site is located east of the Calabasas Grade, where existing obstructions along Highway 101 include freeway oriented signs, residential and commercial development. The proposed project would not be visible from Highway 101 due to intervening buildings and landscaping.

The proposed project would be required to be developed in accordance with the City of Calabasas Oak Tree Ordinance, which would requires the preservation of all healthy oak trees, unless reasonable and conforming use of a property justifies the removal, transplanting, altering, and/or encroachment into the oak tree's protected zone. An Oak Tree Permit would be required for the proposed project, as construction activities would require the removal of one non-Heritage oak tree and encroachment within the protected zones of seven others, including five Heritage oaks (Greenley 2015). A total of 56 oak trees would not experience any direct impacts. Implementation of Mitigation Measures BIO-4 through BIO-8, as described below within Issue 4(e), would be required to mitigate impacts to oak trees to a less than significant level. With implementation of these mitigation measures, the proposed project would not substantially alter the scenic resources of the site. Therefore, impacts would be less-than-significant with Mitigation Measures BIO-4 through BIO-8 incorporated.

Less-than-Significant Impact with Mitigation.

c) *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

A significant impact to the visual character/quality of the area would occur if the project removed or destroyed features or structures that are of aesthetic value (such as architectural value), or if the project altered the visual character of the surrounding setting by introducing an incompatible use. Implementation of the proposed project would change the character of the project site from the existing two-story commercial office buildings to a four-story residential apartment building and a one-story commercial building. As shown in **Figure 3-1** and **Figure 3-2**, the proposed project would be designed in the Italian style architecture, which lends continuity to the prevalent architectural styles of the surrounding community. The proposed project would be constructed with neutral earth tones, stone veneer, exposed wood, arched and square windows, and red roof tiles. As shown in **Figure 3-3** and **Figure 3-4,** the proposed project would have similar scale, massing, and architectural style as the adjacent three- and four-story mixed-use project. While the proposed project would result in an increase in height and scale from the existing development, its massing would not be visually dominant in the area and its scale would be compatible with its surroundings. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the project site or surroundings and impacts would be less than significant.

Less-than-Significant Impact.

SOURCE: Ken Stockton Architects, Inc.

Park Sorrento . 140358.45

Figure 3-1
Aerial View South

SOURCE: Ken Stockton Architects, Inc.

Park Sorrento . 140358.45

Figure 3-2
Aerial View North

SOURCE: Ken Stockton Architects, Inc.

Park Sorrento . 140358.45

Figure 3-3
View West on Park Sorrento

SOURCE: Ken Stockton Architects, Inc.

Park Sorrento . 140358.45

Figure 3-4

View East on Park Sorrento

d) *Would the project create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?*

A significant impact would occur if the project caused a substantial increase in ambient illumination levels beyond the property line or caused new lighting to spill-over onto light-sensitive land uses such as residential, some commercial, institutional, and natural areas. Construction hours of the proposed project would be limited to 7:00 a.m. to 6:00 p.m. during week days and 8:00 a.m. to 5:00 p.m. on Saturdays, in accordance with the City of Calabasas Municipal Code. No nighttime construction would be required. Implementation of the proposed project would include feature lighting and lighting for security along pathways and parking areas. The project site is adjacent to a multi-family residential and commercial development, which would generate similar amounts of light as the proposed project. The proposed project would be required to adhere to lighting regulations in Chapter 17.27 of the City of Calabasas Municipal Code, including but not limited to, shielding, light levels, and placement of landscaping to reduce glare. The proposed exterior lighting and interior window glow would be of a relatively low-intensity nature comparable to the existing levels of lighting created by the existing nearby commercial and residential uses. In addition, the existing vegetation along McCoy Canyon Creek would continue to screen the project site lighting from the residential uses to the south of Calabasas Lake. As a result, there would be no new lighting or glare that would affect day or nighttime views in the area, and impacts would be less than significant.

Less-than-Significant Impact.

References

California Department of Transportation (Caltrans) Scenic Highway Mapping Program, Site Accessed December, 2016: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/.

City of Calabasas. 2015. General Plan 2030 Update. Accessed November 30, 2016 at: http://www.cityofcalabasas.com/general-plan.html.

Greeley, Kay J., Oak Tree Report, Park Sorrento Mixed-Use, 23480 Park Sorrento, Calabasas, California 91302, April 14, 2015.

Agricultural and Forest Resources

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

Discussion

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

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) shows the extent of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance within Los Angeles County. According to the FMMP, the project site is located within a heavily developed area of Los Angeles, and does not include any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation 2016). Therefore, no impact on the conversion of farmland or agricultural resources would occur.

No Impact.

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

The City does not have any agriculture-oriented zoning designations and contains no Williamson Act Contracted land. The project site is located in a developed area and is zoned as CO. Therefore, there would be no impact related to agricultural zoning or Williamson Act contracts.

No Impact.

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

The proposed project is in a developed area and is zoned as CO. No forest land or timberland zoning is present on the project site, in the surrounding area, or anywhere in the City. Therefore, the proposed project would not conflict with existing zoning for forest land or timberland and no impact would occur with regards to this issue.

No Impact.

d) *Expose sensitive receptors to substantial pollutant concentrations?*

As described within Biological Resources below, approximately 0.87 acre of the project site consist of southern coast live oak riparian forest. However, the proposed project is not located on land zoned as "forest land." Further, the oak trees located on site are not used for timber production, nor have they been used for timber production in the recent past, and, therefore, would not be converted into a non-forest use. Thus, the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use and impacts would be less than significant.

Less-than-Significant Impact.

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

As there are no agricultural uses or related operations on or in proximity to the project sites, or anywhere within the City, the proposed project would not involve the conversion of farmland to other uses, either directly or indirectly. No impacts involving the conversion of farmland to non-agricultural use would occur.

No Impact.

References

California Department of Conservation, Farmland Mapping and Monitoring Program, official website, ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/los14.pdf, Accessed December 2016.

Air Quality

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

Discussion

a) *Conflict with or obstruct implementation of the applicable air quality plan?*

The project site is located within the South Coast Air Basin (SCAB). Air quality planning for the SCAB is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The project would be subject to the SCAQMD's Air Quality Management Plan (AQMP), which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the Southern California Association of Governments (SCAG).

When project construction commences, the existing offices would be vacated and the site would no longer provide long-term employment. Project construction would result in short-term or temporary employment. Construction jobs under the project would generally be small in number, temporary in nature, and filled by local construction workers already living in the SCAB, and therefore, would not conflict with the long-term employment projections upon which the AQMP are based. The project could potentially lead to temporary periods of construction where the number of employees on-site may be greater than the number of daily employees from the existing offices; however, this

would be a temporary occurrence and would not affect long-term employment projections.

Control strategies in the AQMP, potentially applicable to control temporary emissions from construction activities, include ONRD-04 and OFFRD-01,[1] which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating the replacement of older, emissions-prone engines with newer engines that meet more stringent emission standards. In accordance with such strategies, the project would use construction contractors that are in compliance with state regulations to reduce emissions from heavy-duty equipment including the California Air Resources Board (CARB) Air Toxics Control Measure (ATCM) that limits diesel powered equipment and vehicle idling to no more than five minutes at a location (Title 13 California Code of Regulations [CCR], Section 2485), and the CARB In-Use Off-Road Diesel Vehicle Regulation (13 CCR, Section 2449) that aims to reduce emissions through the installation of diesel particulate matter filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. Under the In-Use Off-Road Diesel Vehicle Regulation, construction equipment fleet operators are required to replace higher emitting models with lower emitting models based on a phased-in schedule with full compliance by 2023 for large and medium fleets (fleets with greater than 5,000 total equipment horsepower or with 2,501 to 5,000 horsepower, respectively) and by 2028 for small fleets (fleets with 2,500 or less total equipment horsepower). Contractors would also be required to comply with the CARB Truck and Bus regulation to reduce NO_X, PM10, and PM2.5 emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). The regulation include the installation of diesel particulate matter filters and encourages the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The requirements are phased-in over 8 years, starting in 2015 and would be fully implemented by 2023. The project would also comply with SCAQMD regulations for controlling fugitive dust pursuant to SCAQMD Rule 403 (Fugitive Dust) and would implement best management practices consistent with the rule as part of project construction activities. Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities.

As discussed in Issue 13, Population and Housing, Calabasas had an average household size of 2.84 in 2008. Based on this average, the proposed project would generate an estimated 119 residents,[2] which is a conservative estimate considering the proposed project would be for senior living. SCAG forecasts that by the year 2020, the City of Calabasas would have a population of 25,700 persons (an increase of 900 persons from

1 AQMP measure ONRD-04 applies to on-road mobile sources and is the accelerated retirement of older on-road heavy-duty vehicles to reduce emissions of NO_X and particulate matter. AQMP measure OFFRD-01 applies to off-road mobile sources and is the extension of the Surplus Off-Road Opt-In for NO_X (SOON) provision for construction/industrial equipment to encourage the accelerated retirement of older off-road heavy-duty equipment to reduce emissions of NO_X.

2 42 units x 2.84 persons/unit = 119 persons

2015). The residential population accommodated by the proposed project would represent approximately 13 percent of this increase.[3] As such, the proposed project would be expected to accommodate existing and projected housing needs in the city rather than promote population growth. Thus, the residents generated by the proposed project would be within the population forecasts and impacts would be less than significant.

SCAG's RTP/SCS establishes general goals for land use planning and seeks improved "mobility and access by placing destinations closer together and decreasing the time and cost of traveling between them." According to SCAG's SCS/RTP, "transportation network improvements would be included, and more compact, infill, walkable and mixed-use development strategies to accommodate new region's growth would be encouraged to accommodate increases in population, households, employment, and travel demand." Moreover, the RTP/SCS states that while "[p]opulation and job growth would induce land use change (development projects) and increase VMT, and would result in direct and indirect GHG emissions," the RTP/SCS would "supports sustainable growth through a more compact, infill, and walkable development pattern." The City of Calabasas Municipal Code states that senior residential projects should be placed "within walking distance (one quarter mile) of available transit, major transportation routes, shopping facilities, and medical facilities." The proposed project lies within a quarter mile of the Park Granada/Calabasas Road bus stop, the Calabasas Commons shopping center, and various medical facilities. Therefore, the walkability of the proposed project location is considered consistent with SCAG RTP/SCS and City of Calabasas' goals. Because the project would provide for senior housing near transit and other offsite uses and affordable housing (approximately 10 percent of units), the population growth generated by the project is considered consistent with the City's and SCAG's growth policies. In addition, the project would be consistent with the applicable control strategies of the AQMP. Thus, construction and operation of the project would have no significant impacts related to consistency with the AQMP.

The Congestion Management Program (CMP) was enacted by Metro to address traffic congestion issues that could impact quality of life and economic vitality. An analysis is required at all CMP monitoring intersections for which a project is projected to add 50 or more trips during any peak hour. In addition, analysis is required for all freeway segments for which a project is projected to add 150 or more hourly trips, in each direction, during the peak hours analyzed.

As discussed in Issue 16, Transportation and Traffic, the project is not expected to exceed thresholds at any CMP intersection or freeway segments during any peak hour. As a result, the project would not exceed any CMP thresholds, and no impact to CMP intersections would occur. Thus, the project would not conflict with or obstruct implementation of the CMP.

[3] 119 / 900 x 100 percent = 13 percent

Based on the above discussion of the applicable air quality plans, implementation of the project would result in a less than significant impact.

Less-than-Significant Impact.

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

As indicated above, the project site is located within SCAB, which is characterized by relatively poor air quality. State and federal air quality standards are often exceeded in many parts of SCAB, including those monitoring stations nearest to the project's location. The project would contribute to local and regional air pollutant emissions during construction (short-term or temporary) and project occupancy (long-term). However, based on the following analysis, construction and operation of the project would result in less than significant impacts relative to the daily significance thresholds for criteria air pollutant emissions established by the SCAQMD for construction and operational phases.

Construction Impacts

Construction has the potential to create regional air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers, haul trucks, and vendor trucks traveling to and from the project site. In addition, fugitive dust emissions would result from construction activities. During the finishing phase, the application of architectural coatings (i.e., paints) and other building materials would release volatile organic compounds (VOCs). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions.

Based on criteria set forth in the SCAQMD *CEQA Air Quality Handbook* and *Air Quality Analysis Handbook*, a project would have the potential to violate an air quality standard or contribute substantially to an existing violation and result in a significant impact with regard to construction emissions if regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds a day for VOCs, (2) 100 pounds per day for nitrogen oxides (NO_X), (3) 550 pounds per day for carbon monoxide (CO), (4) 150 pounds per day for sulfur oxides (SO_X), (5) 150 pounds per day for respirable particulate matter (PM10), and (6) 55 pounds per day for fine particulate matter (PM2.5).

The project would involve demolition of existing uses (i.e., surface parking lot and existing buildings) and construction of commercial and residential uses. Construction activities would include demolition, site preparation, excavation, grading, building construction, architectural coatings and paving. Heavy-duty off-road equipment, such as excavators, loaders, cranes, and paving equipment would be used during construction. Approximately 10 haul trucks would be used per day during demolition. Site grading and excavation would result in approximately 1,775 cubic yards of soil export with approximately 32 haul trucks used per day during excavation.

Construction is anticipated to begin in 2018. The expected duration of construction is approximately 12 months. The project is anticipated to be fully operational in 2019. Construction may commence on a later date or construction could occur over a longer period of time than that analyzed in this air quality impact analysis. If either or both of these occur, construction impacts would be less than those analyzed, because a more energy-efficient and cleaner burning construction equipment fleet mix would be expected in the future, pursuant to State regulations that require construction equipment fleet operators to phase-in less polluting heavy-duty equipment. Furthermore, construction impacts would be spread out for a longer period of time, which is likely to reduce peak daily emissions. As a result, should the project commence construction on a later date, or occur over a longer period of time than that analyzed in this air quality impact analysis, air quality impacts would be less than the impacts disclosed herein.

During construction, a variety of heavy-duty diesel powered equipment would be used onsite. Building construction and finishing activities would require equipment such as excavators, cranes, and air compressors. Construction-related emissions associated with construction equipment were calculated using the SCAQMD-recommended California Emissions Estimator Model (CalEEMod), which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Modeling data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered by the SCAQMD to be an accurate and comprehensive tool for quantifying air quality and greenhouse gas (GHG) impacts from land use projects throughout California.

Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest potential date) and applying the mobile source emissions factors. The emissions estimated from the CalEEMod (Version 2016.3.1) software is based on outputs from the CARB off-road equipment emissions (OFFROAD) and on-road vehicle emission factor (EMFAC) models, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles and equipment. The output values used in this analysis were adjusted to be project-specific based on equipment types and the construction schedule. Model results are provided in Appendix A of this IS/MND.

This emissions analysis for all construction activities includes compliance with mandatory SCAQMD Rule 403 (Fugitive Dust) measures regarding the control of fugitive dust. For modeling purposes within CalEEMod, compliance with Rule 403 is accounted for by incorporating watering three times daily, which the SCAQMD estimates a 61 percent control efficiency. A summary of maximum daily regional emissions

resulting from construction of the project is presented in **Table 3-1**, along with the regional significance thresholds for each air pollutant.

As shown in Table 3-1, maximum regional emissions would not exceed the thresholds for VOC, NO_X, CO, SO_X, PM10, or PM2.5. Therefore, regional construction impacts would be less than significant, and mitigation measures would not be required.

TABLE 3-1
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) [a]

Construction Activity	VOC	NO_X	CO	SO_X	PM10 [B]	PM2.5 [b]
Demolition	2	22	12	<0.1	2	1
Site Preparation	1	15	6	<0.1	1	1
Grading	2	24	11	<0.1	2	1
Drainage/Utilities/Sub-Grade	1	14	13	<0.1	1	1
Building Construction	4	32	26	<0.1	2	2
Final Pickups	<1	2	3	<0.1	1	<1
Paving	2	14	15	<0.1	1	1
Architectural Coating	29	2	2	<0.1	<1	<1
Maximum Regional Emissions	**29**	**32**	**26**	**<1**	**2**	**2**
SCAQMD Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Over/(Under)	(46)	(68)	(524)	(150)	(148)	(53)
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

[a] Totals may not add up exactly due to rounding in the modeling calculations Detailed emissions calculations are provided in Appendix A.

[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2017.

Operational Impacts

The SCAQMD has separate significance thresholds to evaluate potential impacts associated with the incremental increase in criteria air pollutants associated with long-term project operations. Based on criteria set forth in the SCAQMD CEQA Air Quality Handbook, a project would have the potential to violate an air quality standard or contribute substantially to an existing violation and result in a significant impact with regard to operational emissions if regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 55 pounds a day for VOCs, (2) 55 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for SO_X, (5) 150 pounds per day for PM10, and (6) 55 pounds per day PM2.5.

Regional air pollutant emissions associated with project operations would be generated by the consumption of electricity and natural gas, and by the operation of on-road

vehicles. Pollutant emissions associated with energy demand (i.e., natural gas consumption) are classified by the SCAQMD as stationary source emissions while emissions associated with on-road vehicles are classified as mobile source emissions.

Operational emissions for the project were estimated using CalEEMod for the existing land uses on the project site (existing emissions) and for the land uses proposed by the project (project emissions) to determine the net incremental change in emissions. Mobile source emissions are based on the vehicle emission factors from EMFAC and the trip length values for the existing and project land uses in CalEEMod, which are Air Basin-wide average trip distance values. To estimate the total vehicle miles traveled (VMT) for existing trips and proposed project trips, trip generation rates provided in the project traffic study were used. The trips take into account trip reductions from internal capture from co-locating different land uses on the site and from nearby access to public transportation.

With regard to energy usage, the consumption of natural gas to provide heating and hot water generates emissions. Future fuel consumption rates are estimated based on specific square footage of the existing and project land uses. Energy usage (onsite natural gas consumption for cooking and heating, such as natural gas combustion in commercial boilers and water heaters) for the project is calculated within CalEEMod using the California Energy Commission (CEC) California Commercial End Use Survey (CEUS) data set for nonresidential uses, which lists energy demand by building type. Since the data from the CEUS is from 2002, the emissions modeling using the CalEEMod software incorporates correction factors to account for compliance with the current Title 24 Building Standards Code. The energy use from residential land uses is calculated based on the CEC Residential Appliance Saturation Survey (RASS), which also incorporates correction factors to account for compliance with the current Title 24 Building Standards Code. The existing site uses were modeled using CalEEMod historical energy demand factors, which are based on previous Title 24 standards.

Other sources of emissions from operation of the existing site uses and project uses include equipment used to maintain landscaping, such as lawnmowers and trimmers. The CalEEMod tool uses landscaping equipment GHG emission factors from the CARB OFFROAD model and the CARB *Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003)*. The CalEEMod software estimates that landscaping equipment operate for 250 days per year in the South Coast Air Basin. Emissions of VOCs from the use of consumer products and architectural coatings are based on SCAQMD-specific emission factors for land uses in the Air Basin. Emissions from residential natural gas-fired fireplaces were included for all residential units. SCAQMD Rule 445 (Wood-burning Devices) prohibits the installation of permanent wood-burning fireplaces in new developments. Because the project does not include fireplaces in the residential units, emissions for area sources would be lower than reported herein.

Emissions calculations for the project include credits or reductions for energy efficiency measures that are required by regulation, such as reductions in energy from the current Title 24 standards and the California Green Building Standards (CALGreen) Code. The City's Green Building Code adopts by reference the CALGreen Code, as well as additional City requirements (Section 15.04.960. of the Calabasas Municipal Code [CMC]). Since the project proposes new buildings greater than 5,000 square feet, the project would also be subject to the City's Green Development Standards (Section 17.34 et al. of the CMC), which requires the commercial building to achieve at a United States Green Building Council (USGBC) LEED "Certified" rating. The project would implement green building designs, including energy efficient building systems and installation of water efficient fixtures, to achieve a LEED "Certified" rating.

A summary of maximum daily regional emissions resulting from project operation is presented in **Table 3-2**, along with the regional significance thresholds. As shown in Table 3-2, the project would not generate air pollutant emissions exceeding the SCAQMD thresholds of significance listed above. Therefore, the project would have a less than significant impact on air quality resulting from long-term operational emissions, and no mitigation measures would be necessary.

TABLE 3-2
MAXIMUM REGIONAL OPERATIONAL EMISSIONS (POUNDS PER DAY)[a]

Operational Activity	VOC	NO_X	CO	SO_X	PM10	PM2.5
Project						
Area (Consumer Products, Landscaping, Natural Gas Fireplaces)	1	1	4	<0.1	<0.1	<0.1
Energy (Natural Gas)	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Motor Vehicles	1	3	8	<0.1	2	<0.1
Project Total	2	4	12	<0.1	2	<0.1
Existing Site						
Area (Consumer Products, Landscaping)	1	<0.1	<0.1	<0.1	<0.1	<0.1
Energy (Natural Gas)	0	<0.1	<0.1	<0.1	<0.1	<0.1
Motor Vehicles	1	6	17	<0.1	2	1
Existing Site Total	**2**	**6**	**17**	**<0.1**	**2**	**1**
Maximum Net Regional Emissions	**0**	**(2)**	**(5)**	**<0.1**	**0**	**(1)**
SCAQMD Threshold	55	55	550	150	150	55
Over/(Under)	**(55)**	**(57)**	**(555)**	**(150)**	**(155)**	**(56)**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

[a] Totals may not add up exactly due to rounding in the modeling calculations Detailed emissions calculations are provided in Appendix A.

SOURCE: ESA, 2017.

Less-than-Significant Impact.

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

The SCAQMD's approach for assessing cumulative impacts related to operations is based on attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. As discussed earlier, the SCAQMD has an adopted AQMP, which addresses the region's cumulative air quality condition.

A significant impact may occur if a project were to add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Air Basin is currently in non-attainment for ozone (federal and state standards), PM10 (state standards only) and PM2.5 (federal and state standards); therefore, related projects could cause ambient concentrations to exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA and the SCAQMD.

In particular, CEQA Guidelines Sections 15064(h)(3) provides guidance in determining the significance of cumulative impacts. Specifically, Section 15064(h)(3) states in part that:

> *A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including, but not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, plans or regulations for the reduction of greenhouse gas emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.*

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the project's incremental contribution to cumulative air quality impacts is determined based on compliance with the SCAQMD adopted AQMP. As discussed previously under Issue a., the project would be consistent with the AQMP and would not have a cumulatively considerable air quality impact.

As the project is not part of an ongoing regulatory program, the SCAQMD also recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As discussed above under Issue b., peak daily emissions of construction and operation-related pollutants would not exceed SCAQMD regional significance thresholds. By applying SCAQMD's cumulative air quality impact methodology, implementation of the project would not result in an addition of criteria pollutants such that cumulative impacts would occur, in conjunction with related projects in the region. In addition, as discussed in Issue d., below, construction and operation of the project is not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SCAQMD has established a localized impact threshold. Therefore, the emissions of non-attainment pollutants and precursors generated by the project in excess of the SCAQMD project-level thresholds would be less than significant and would not result in a cumulatively considerable air quality impact.

Less-than-Significant Impact.

d) *Expose sensitive receptors to substantial pollutant concentrations?*

Certain population groups are especially sensitive to air pollution and should be given special consideration when evaluating potential air quality impacts. These population groups include children, the elderly, persons with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. As defined in the SCAQMD *CEQA Air Quality Handbook*, a sensitive receptor to air quality is defined as any of the following land use categories: (1) long-term health care facilities; (2) rehabilitation centers; (3) convalescent centers; (4) retirement homes; (5) residences; (6) schools; (7) parks and playgrounds; (8) child care centers; and (9) athletic fields.

Localized Construction Impacts

The localized air quality analysis was conducted using the methodology described in the SCAQMD *Localized Significance Threshold Methodology* (June 2003, revised July 2008). The screening criteria provided in the *Localized Significance Threshold Methodology* were used to determine localized construction and operational emissions thresholds for the project. The closest sensitive receptors to the project are residential apartments directly west of the site (under construction with anticipated completion in Spring 2018). Sensitive receptors are also located to the north across Park Sorrento. The project site is a total of 1.93 acres. Therefore, as a conservative estimate, thresholds used for the localized daily significance threshold (LST) analysis were based on a one-acre site in the West San Fernando Valley Source-Receptor Area with sensitive receptors located adjacent to the project site.

The localized effects from the onsite portion of daily emissions were evaluated at sensitive receptor locations potentially impacted by the project according to the SCAQMD's LST methodology. Daily localized emissions caused by the project were compared to the LSTs in the SCAQMD's look-up tables to determine whether the emissions would cause violations of ambient air quality standards. A summary of

maximum localized construction emissions resulting from project construction is presented in **Table 3-3**, along with the localized significance thresholds.

TABLE 3-3
MAXIMUM LOCALIZED CONSTRUCTION EMISSIONS (POUNDS PER DAY)[a]

Construction Activity	NO_X	CO	PM10 [B]	PM2.5 [b]
Demolition	20	11	2	1
Site Preparation	15	6	1	1
Grading	19	9	1	1
Drainage/Utilities/Sub-Grade	14	12	1	1
Building Construction	30	24	2	2
Final Pickups	1	1	<0.1	<0.1
Paving	14	14	1	1
Architectural Coating	2	2	<1	<1
Maximum Localized Emissions	**30**	**24**	**2**	**2**
SCAQMD Threshold [c]	**103**	**426**	**4**	**3**
Over/(Under)	(73)	(402)	(2)	(1)
Exceeds Threshold?	**No**	**No**	**No**	**No**

[a] Totals may not add up exactly due to rounding in the modeling calculations Detailed emissions calculations are provided in Appendix A.

[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

[c] LSTs are based on a project site area of 1 acre in Source-Receptor Area 6 (West San Fernando Valley) with sensitive receptors located adjacent to the project site (i.e., 25 meters).

SOURCE: ESA, 2017.

As shown in Table 3-3, maximum daily localized emissions would not exceed the thresholds for NO_X, CO, PM10, or PM2.5.

Construction Toxic Air Contaminants

The SCAQMD significance thresholds for toxic air contaminants (TAC) are based on whether a project would emit TACs that would cause concentrations at sensitive receptors to result in an exceedance of an incremental increase in cancer risk of ten in one million or a cancer burden greater than 0.5 excess cancer cases (in areas greater than or equal to one in one million) or an acute or chronic Hazard Index of 1.0 (the Hazard Index is a measure of the level at which adverse non-cancer health effects would be expected to occur).

Project construction would result in short-term emissions of diesel particulate matter, which is a TAC. Diesel particulate matter poses a carcinogenic health risk that is generally measured using an exposure period of 30 years for sensitive residential receptors. Off-road heavy-duty diesel equipment would emit diesel particulate matter over the course of the construction period. Sensitive receptors are located adjacent to the

project site. Localized diesel particulate matter emissions (strongly correlated with PM2.5 emissions) would be minimal and would be substantially below localized thresholds as presented in Table 3-3. Nonetheless, while the proposed project would result in generally low level of diesel particulate matter emissions, it is potentially possible that the proposed project could result in health impacts to sensitive receptors in the immediate vicinity of the project site given the updated health risk assessment guideline and age sensitive factors. Therefore, the impact is conservatively considered potentially significant and mitigation measures are recommended. It is noted that the proposed project would comply with the CARB ATCM anti-idling measure, which limits idling to no more than five minutes at any location for diesel-fueled commercial vehicles, would further minimize diesel particulate matter emissions in the project area. The proposed project would also utilize a construction contractor(s) that complies with required and applicable BACT and the In-Use Off-Road Diesel Vehicle Regulation.

Construction-related TAC emissions have the potential to result in a potentially significant air quality impact at sensitive receptor locations in the immediate vicinity of the project site. Thus, the following mitigation measure is prescribed to reduce construction-related TAC impacts.

> **AIR-1:** Off-road diesel-fueled heavy-duty construction equipment greater than 50 horsepower (hp) used for this project and located on the project site for a total of five days or more shall meet at a minimum the United States Environmental Protection Agency (USEPA) Tier 3 emissions standards and the equipment shall be outfitted with Best Available Control Technology (BACT) devices including a CARB certified Level 3 Diesel Particulate Filter or equivalent control device.

Mitigation Measure AIR-1 requires the use of equipment that meet the USEPA Tier 3 emissions standards and are equipped with CARB certified Level 3 Diesel Particulate Filter or equivalent control device. The measure would be expected to reduce diesel particulate matter by approximately 85 percent or more. This would reduce construction-related diesel particulate matter emissions to less than one-half pound per day during the short-term and temporary construction period. According to the SCAQMD, health risk impacts from construction could potentially occur from construction of a one-acre project with one pound per day of diesel particulate matter emissions, based on the updated OEHHA guidelines and age sensitivity factors. Because Mitigation Measure AIR-1 would reduce the diesel particulate matter emissions to substantially less than one pound per day, and given the relatively short-term and temporary duration of construction, it is reasonably concluded that impacts would be mitigated to less than significant.

Localized Operational Impacts

The screening criteria provided in the *Localized Significance Threshold Methodology* were used to determine localized operational emissions thresholds for the project. With regard to onsite sources of emissions, the project would generate emissions resulting from sources such as natural combustion (onsite natural gas consumption for cooking and

heating, such as natural gas combustion in commercial boilers and water heaters) and landscaping equipment. A summary of maximum localized operational emissions resulting from project operations is presented in **Table 3-4**, along with the localized significance thresholds.

TABLE 3-4
MAXIMUM LOCALIZED OPERATIONAL EMISSIONS[a]

Operational Activity	NO_x	CO	PM10	PM2.5
Project				
Area (Consumer Products, Landscaping, Natural Gas Fireplaces)	1	4	<0.1	<0.1
Energy (Natural Gas)	<0.1	<0.1	<0.1	<0.1
Project Total	1	4	<0.1	<0.1
Existing Site				
Area (Consumer Products, Landscaping)	<0.1	<0.1	<0.1	<0.1
Energy (Natural Gas)	<0.1	<0.1	<0.1	<0.1
Existing Site Total	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Maximum Net Localized Emissions	**1**	**4**	**<0.1**	**<0.1**
SCAQMD Threshold [b]	103	426	1	1
Over/(Under)	**(103)**	**(422)**	**(1)**	**(1)**
Exceeds Threshold?	**No**	**No**	**No**	**No**

[a] Totals may not add up exactly due to rounding in the modeling calculations Detailed emissions calculations are provided in Appendix A.

[b] LSTs are based on a project site area of 1 acre in Source-Receptor Area 6 (West San Fernando Valley) with sensitive receptors located adjacent to the project site (i.e., 50 meters).

SOURCE: ESA, 2017.

As shown in Table 3-4, onsite sources of emissions would remain below SCAQMD LST thresholds and localized operational impacts would be less than significant.

Carbon Monoxide Hotspots

Within an urban setting, vehicle exhaust is the primary source of CO. Consequently, the highest CO concentrations are generally found in proximity to congested roadway intersections. Under typical meteorological conditions, CO concentrations tend to decrease as the distance from the emissions source (i.e., congested intersection) increases. For the purposes of providing a conservative, worst-case impact analysis, CO concentrations are typically analyzed at congested intersections, because if impacts are less than significant in proximity of the congested intersections, impacts will also be less than significant at more distant sensitive receptor locations.

Carbon monoxide decreased dramatically in the Air Basin with the introduction of the automobile catalytic converter in 1975. No exceedances of CO have been recorded at

monitoring stations in the Air Basin in recent years and the Air Basin is currently designated as a CO attainment area for both the CAAQS and NAAQS. Thus, it is not expected that CO levels at project-impacted intersections would rise to such a degree as to cause an exceedance of these standards.

Localized areas where ambient concentrations exceed state and/or federal standards are termed "CO hotspots." Emissions of CO are produced in greatest quantities from motor vehicle combustion and are usually concentrated at or near ground level because they do not readily disperse into the atmosphere, particularly under cool, stable (i.e., low or no wind) atmospheric conditions.

Project traffic has the potential to create local area CO impacts. The potential for the project to cause or contribute to CO hotspots is evaluated by comparing impacted project intersections (both intersection geometry and traffic volumes) with prior studies conducted by the SCAQMD in support of their AQMPs. As discussed below, this comparison provides evidence that the project would not cause or contribute to the formation of CO hotspots, that CO concentrations at project impacted intersections would remain well below the ambient air quality standards, and that no further CO analysis is warranted or required.

The SCAQMD recommends a hotspot evaluation of potential localized CO impacts when vehicle to capacity (V/C) ratios are increased by two percent or more at intersections with a level of service (LOS) of D or worse. Based on the traffic impact analysis prepared for the project (summarized in Issue 16, Transportation/Circulation), several intersections operate at LOS D or worse during A.M. and P.M. peak hours. However, the project would not meet the SCAQMD criterion of hotspot evaluation because it would not increase the V/C ratio by 2 percent. Therefore, additional localized CO analysis was performed qualitatively.

The SCAQMD conducted CO modeling for the 2003 AQMP for the four worst-case intersections in the Air Basin. These included: (a) Wilshire Boulevard and Veteran Avenue; (b) Sunset Boulevard and Highland Avenue; (c) La Cienega Boulevard and Century Boulevard; (d) Long Beach Boulevard and Imperial Highway. In the 2003 AQMP, the SCAQMD notes that the intersection of Wilshire Boulevard and Veteran Avenue is the most congested intersection in Los Angeles County with an average daily traffic volume of about 100,000 vehicles per day. This intersection is located near the on- and off-ramps to Interstate 405 in West Los Angeles. The evidence provided in Table 4-10 of Appendix V of the 2003 AQMP shows that the peak modeled CO concentration due to vehicle emissions at these four intersections was 4.6 ppm (one-hour average) and 3.2 (eight-hour average) at Wilshire Boulevard and Veteran Avenue. When added to the existing background CO concentrations, the screening values would be 7.6 ppm (one-hour average) and 5.6 ppm (eight-hour average).

In comparison, the proposed project would generate relatively few trips. Based on the Traffic Study prepared for the project (located in Appendix I), compared to the existing

office use of the site, the project could result in a net decrease of 96 trips per day or up to a net increase of 68 trips per day depending on the final commercial tenants. Based on project's contribution to vehicle trips and traffic counts that were observed as part of the project's noise impact assessment,[4] the project would not cause an increase in average daily traffic volumes at roadway intersections that would result in an exceedance of 100,000 vehicles per day. Therefore, CO concentrations are expected to be less than the CO concentrations measured as part of the AQMP CO attainment demonstration and would not exceed SCAQMD significance thresholds. This comparison provides evidence that the project would not contribute to the formation of CO hotspots and no further CO analysis is required. Therefore, the project would result in less than significant impacts with respect to CO hotspots.

Operational Toxic Air Contaminants

Project operations would generate only minor amounts of diesel fuel emissions from delivery trucks and incidental maintenance activities. Trucks would comply with applicable provisions of the CARB Truck and Bus regulation to minimize and reduce emissions from trucks. In addition, project operations would only result in minimal emissions of air toxics from maintenance or other ongoing activities, such as from the use of architectural coatings and other products; however, these types of maintenance activities would be periodic and relatively small-scale, similar to maintenance activities at other multi-family residential buildings. There are no substantial sources of Toxic Air Contaminants (TAC) emissions associated with the project's residential and commercial uses. Therefore, project operations would not be considered a substantial source of TACs.

Project-related natural gas combustion for cooking and heating would not generate a measurable net increase in TAC emissions and would not contribute to an increase in health risk impacts.[5] As a result, toxic or carcinogenic air pollutants are not expected to occur in any meaningful amounts in conjunction with operation of the proposed land uses within the project site. Based on the uses expected on the project site, potential long-term operational impacts associated with the release of TACs would be minimal and would not be expected to exceed the SCAQMD thresholds of significance. Therefore, impacts would be less than significant.

Less-than-Significant Impact with Mitigation.

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

The closest existing sensitive receptors to the project are multi-family residential uses to the west. The closest future sensitive receptor to the project is the proposed residential uses on the project site. Potential sources that may emit odors during project construction activities include diesel trucks and equipment and the use of architectural coatings and

4 Traffic counts were conducted by ESA on February 1-2, 2017 and February 13-14, 2017 as part of the project's noise impact assessment. Refer to Table 12-5 for a summary of the observed traffic counts.

5 Natural gas is considered Best Available Control Technology (BACT) for boilers. Refer to SCAQMD Best Available Control Technology Guidelines, Part D: Non-Major Polluting Facilities.

solvents. According to the SCAQMD *CEQA Air Quality Handbook*, construction equipment is not a listed source of odors. Compliance with existing regulations, including the CARB anti-idling regulation that limits idling to five minutes or less at any location would minimize the potential for odorous emissions. SCAQMD Rule 1113 (Architectural Coatings) limits the amount of VOCs from architectural coatings and solvents.

The project's proposed uses are not expected to generate nuisance odors at nearby sensitive receptors during operation. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The project would not involve elements related to these types of uses. While there is a potential for odors to occur, compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential objectionable odor impacts to a less than significant level.

Less-than-Significant Impact.

References

Associated Transportation Engineers, Updated Traffic, Circulation and Parking Study for the Park Sorrento Mixed-Use Project, (2016).

California Air Resources Board (CARB), OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, (6/13/2003), http://www.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_ act.pdf. Accessed October 2016.

California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/Chart.aspx. Accessed October 2016.

California Emissions Estimator Model (CalEEMod). http://www.caleemod.com, Accessed January 2017.

City of Calabasas, 2013 Calabasas Green Building Code, (2013), http://www.cityofcalabasas.com/BuildingSafety/greenbuilding-checklist.pdf

City of Calabasas, Municipal Code Section 17.12.180, (2016).

South Coast Air Quality Management District (SCAQMD) Best Available Control Technology Guidelines, Part D: Non-Major Polluting Facilities. Available: http://www.aqmd.gov/docs/default-source/bact/bact-guidelines/part-d---bact-guidelines-for-non-major-polluting-facilities.pdf?sfvrsn=4. Accessed January 2017.

SCAQMD, 2003 Air Quality Management Plan, Appendix V: Modeling and Attainment Demonstrations, (2003) V-4-24.

SCAQMD, Air Quality Analysis Handbook. Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook. Accessed February 2017.

SCAQMD, Air Quality Significance Thresholds, (March 2015), http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed October 2016.

SCAQMD, Localized Significance Thresholds, (2003, revised 2008), http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed

SCAQMD, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook. Accessed October 2016.

Southern California Association of Governments (SCAG), 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy, (2012), page 113.

SCAG, Draft Program Environmental Impact Report – 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, (2015), page 3.8-35.

Biological Resources

Issues (and Supporting Information Sources):		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
4.	**BIOLOGICAL RESOURCES — Would the project:**				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Background

Biological Assessment Services (BAS) conducted surveys of the project site on May 11, 2006, October 30, 2012, September 15, 2016, and December 19, 2016, to document site conditions and assess the potential of the site to support special-status plant or animal species (BAS 2016). The results of the surveys are incorporated into this document as a report and are provided as Appendix B of this IS/MND. As part of the BAS surveys and the preparation of this IS/MND, the following relevant literature and natural resources databases were reviewed:

- The California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) records search for the *Simi Valley West, Simi Valley East, Oat Mountain, Thousand Oaks, Calabasas, Canoga Park, Point Dume, Malibu Beach, and Topanga* quadrangles;
- The Los Angeles Audubon's Sensitive Bird Species List (Allen et al. 2009);
- United States Fish and Wildlife Service (USFWS) critical habitat maps.

- Various regional flora and fauna field guides to assist in the identification of species and suitable habitats (Included in Appendix B of this IS/MND).

The project site is comprised of 1.93 acres of developed and undeveloped land in the City of Calabasas. The site is currently occupied with 1.06 acres of developed land consisting of an office building, parking lot, and landscaped areas that include lawns and ornamental trees; and 0.87 acre of southern coast live oak riparian forest that includes both native and nonnative canopy and understory elements associated with McCoy Creek. McCoy Creek runs along the southern and eastern portions of the project site. **Figure 3-5** shows the landscaped areas and the Oak Riparian Woodland.

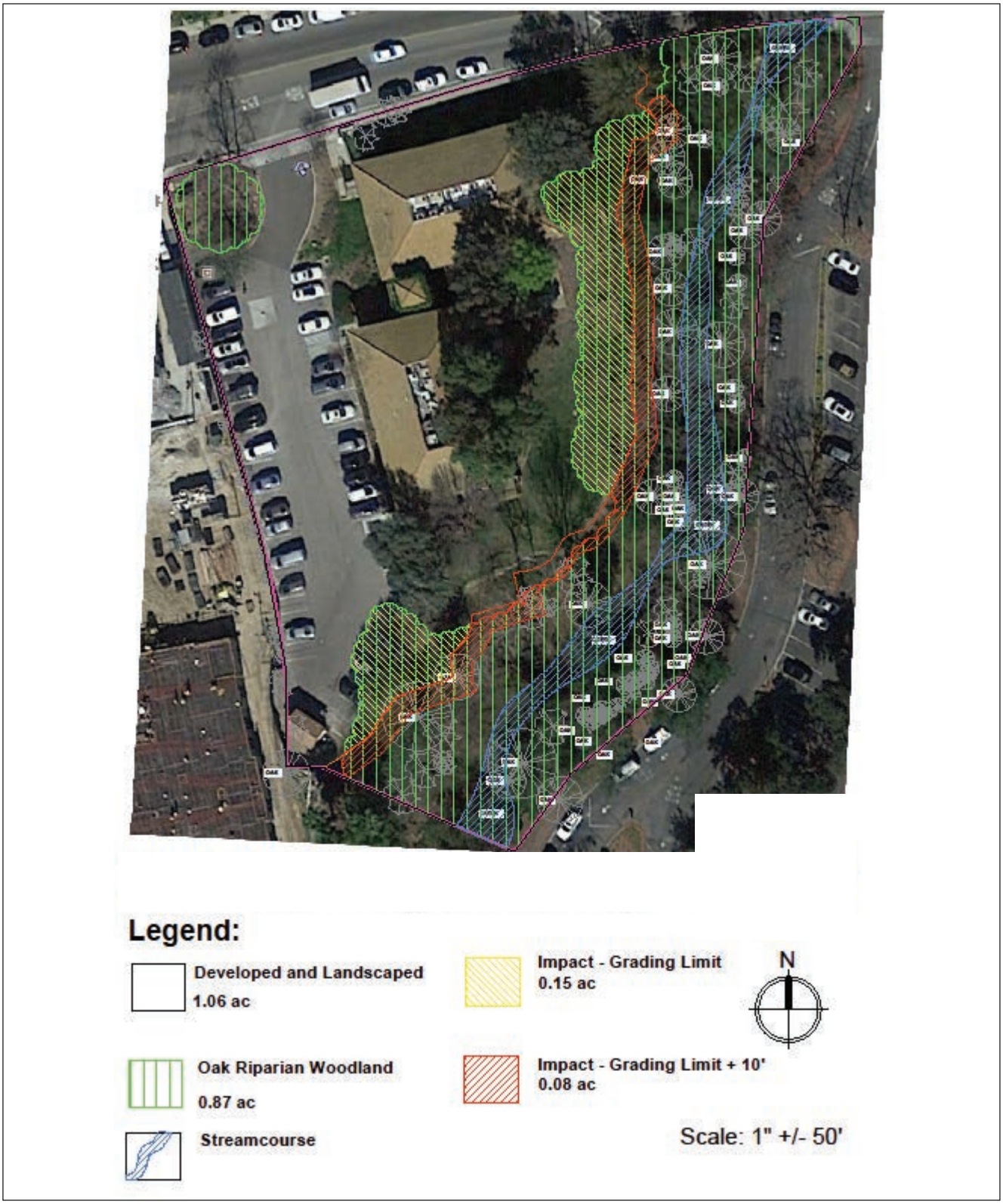
Vegetation and Plant Communities

Landscaped and Developed Area

Landscaped and developed areas associated with the existing land uses occupy 1.06 acres (55 percent) of the project site. The landscaping consists primarily of trees and shrubs, with lawns around the existing office building. Trees used in the landscaping include silver dollar eucalyptus (*Eucalyptus polytanhemos*), blue gum (*Eucalyptus globulus*), crape myrtle (*Lagerstroemia sp*.) and jacaranda (*Jacaranda mimosifolia*) among others. Various shrubs are used in the landscaping for ornamental and visual shielding purposes.

Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest (as defined by Robert Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California 1986) occupies 0.87 acre (45 percent) of the project site along McCoy Creek. According to Holland this vegetation type is open, to locally dense, evergreen sclerophyllous riparian woodland dominated by coast live oak. Valley oak (*Quercus lobata*), arroyo willow (*Salix lasiolepis*), narrow-leaved willow (*Salix exigua*), and Fremont cottonwood (*Populus fremontii)* were also found onsite as overstory and mid-story components of the habitat. A stand of London plane (*Platanus x acerifolia*) trees is located between the landscaped areas and the southern coast live oak riparian forest. This hybrid plane tree, though not native, is an analogous counterpart to the riparian native western sycamore *(Platanus racemosa*), with which it hybridizes, and is included within the riparian habitat designation. Nonnative Peruvian peppers (*Schinus molle*) are also present. This habitat appears to be richer in herbs and poorer in understory shrubs than other riparian communities found elsewhere in the project vicinity. The onsite understory was composed primarily of periwinkle (*Vinca major*), poison oak (*Toxicodendron diversilobum*) and California blackberry (*Rubus ursinus*). This habitat typically occurs in valley bottoms and outer floodplains along larger streams, in sandy soils or alluvium (Holland 1986; Sawyer and Keeler-Wolf 1995).



SOURCE: Biological Resources Technical Report Park Sorrento

Park Sorrento . 140358.45

Figure 3-5
Habitat Impact Map

Wildlife

Wildlife species observed or otherwise detected during the site survey include avian species in the coast live oaks along the riparian area and in the ornamental trees that occur within the landscaped area onsite. Cooper's hawk (*Accipiter cooperii*) was observed foraging onsite but not nesting activities. Acorn (*Melanerpes formicivorus*) and Nuttall's woodpeckers (*Picoides nuttallii*) were observed foraging on the upper trunks of some of the larger trees onsite. Oak titmouse (*Baeolophus inornatus*) and Wilson's warbler (*Wilsonia pusilla*) were seen flitting in the canopies of the oaks in the riparian area. Yellow warbler (*Setophaga petechia*) was observed within the riparian area. Mallards (*Anas platyrhynchos*) were found drifting along the stream and red-shouldered hawk (*Buteo lineatus*) and white-throated swifts (*Aeronautes saxatalis*) were observed flying overhead. In the ornamental gardens on the south-side of -the building, Anna's (*Calypte anna*) and rufous (*Selasphorus rufus*) hummingbirds were observed feeding on the flowering plants.

Two nonnative fish were observed in McCoy Creek: mosquitofish (*Gambusia affinis*) and koi (*Cyprinus carpio*). Observations of amphibians occurring onsite were limited to two species: Pacific treefrog (*Pseudacris regilla*) and the nonnative American bullfrog (*Rana catesbeiana*). The Pacific treefrog was found on the north bank of the stream and the American bullfrog was observed several times leaping from streamside basking areas into the stream. Western fence lizard (*Sceloperus occidentalis*) was the only representation of reptiles that was observed onsite.

The non-native eastern fox squirrel (*Sciurus niger*), was the only mammal directly observed onsite. Several dusky-footed woodrat (*Neotoma fuscipes*) nests, raccoon (*Procyon lotor*) tracks and coyote (*Canus latrans*) tracks were also observed, confirming the presence of these species.

Jurisdictional Areas

McCoy Creek, located to the south and east of the project site, had a steady flow of water during site surveys. The stream connects to Arroyo Calabasas, which is a direct tributary to the Los Angeles River. This qualifies the stream as "Waters of the US" and puts it under the jurisdiction of the USACE under Section 404 of the Federal Clean Water Act. The total amount of USACE jurisdictional "Waters of the US," has not yet been determined using a detailed jurisdictional delineation but based on the topographical map is approximately 0.13 acre. The jurisdiction of the RWQCB is over discharge into "Waters of the State" which includes any surface or ground water in the state of California, according to the California Porter-Cologne Water Quality Act. While this jurisdiction may at times include more area than the Waters of the US, the extent is equivalent on the Park Sorrento project site. The RWQCB also asserts jurisdiction over discharge into Waters of the US separately under Section 401 of the Federal Clean Water Act. CDFW jurisdiction includes and often extends beyond USACE jurisdiction, encompassing the streambed and bank, riparian vegetation adjacent to the stream, and the canopies of the coast live oaks and other various trees that overhang the stream, are dependent on the stream or affect the water quality of the stream. CDFW jurisdictional area is equivalent to the oak riparian woodland at 0.87 acres onsite. The streamcourse and riparian habitat are illustrated on Figure 3-5.

Ordinance/Preservation

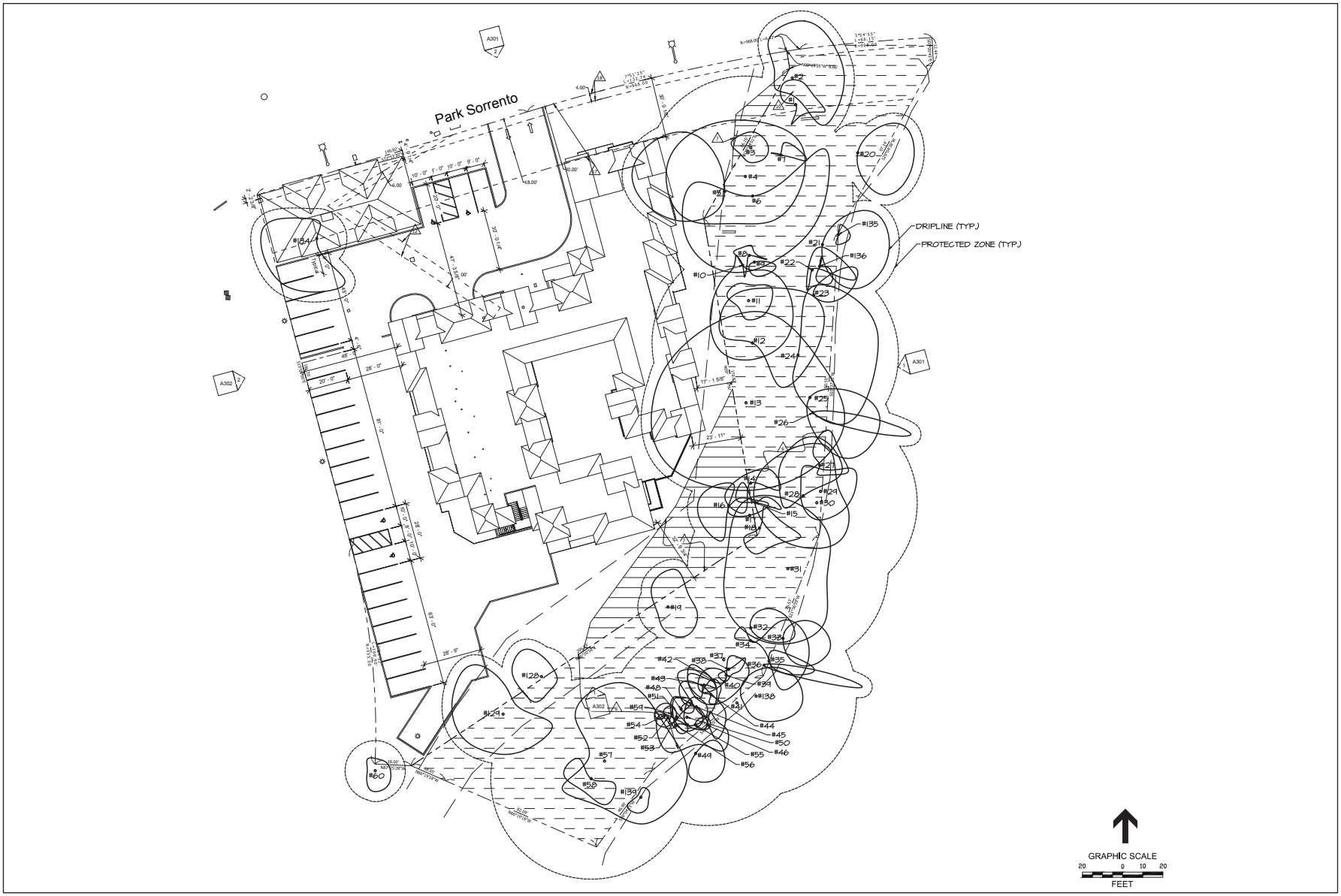
An oak tree survey was also conducted on the project site by Kay Greeley in 2015. All of the surveyed trees have a diameter breast height (DBH; 4.5 feet above the natural grade surrounding the tree) of two inches or greater. Oaks with a DBH of less than two inches, but more than one inch, were located and mapped. Each tree was assigned three letter grades, one health and one aesthetic rating as required by the City, and an overall grade that incorporates ecological value in addition to health and aesthetic values. The health and aesthetic rating of the trees are based on the guidelines established in the City of Calabasas Oak Tree Preservation and Protection Guidelines. The overall grade of each tree was determined through a subjective evaluation of its health, aesthetic value, and ecological value.

There are 66 native oak trees, including 10 Heritage oaks, located within the immediate vicinity of the project work (**Figure 3-6**). All of the trees are either *Quercus agrifolia*, commonly referred to as coast live oak, or *Q. lobata*, commonly referred to as valley oak. Two trees, #37 and #41 were only stumps; they had failed and/or were removed since the prior study performed by others.

The trees are concentrated along McCoy Creek on the parcel immediately to the east of the site. With the possible exception of tree #134 just west of the driveway, each of the 66 trees appears to have grown naturally in place. Tree #'s 4, 6, 12, 13, 24, 30, 31, 46, 58, and 138 are Heritage oaks; their trunk diameters are at least 24 inches. Tree #134 is a Coast Live Oak with a 16-inch trunk diameter. Detailed information with respect to diameter, height, canopy dimensions, form, crown class, age class, and pruning history is provided for each of the subject trees on the Field Evaluation Forms contained in the Oak Tree Report in Appendix C of this IS/MND.

Sensitive Biological Resources

None of the 51 listed special-status plant species that have been recorded by CNDDB and/or CNPS in the vicinity of the project site were observed during the surveys. None of the listed special-status plant species is thought to occur or possibly occur on the project site.



SOURCE: Seven Elk Ranch Design Inc., 2015

Park Sorrento . 140358.45

Figure 3-6

Habitat Impact Map

Discussion

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

No federal or state-listed threatened, endangered, or candidate species are known or expected to occur onsite. No federally designated critical habitat for listed wildlife species is mapped within or adjacent to the property; therefore, no critical habitat will be affected by the project.

As mentioned above, there are no special-status plant species that occur on the project site and none are expected. The project would have no impact on special-status plant species.

The Southwestern willow flycatcher may occur on the site only as a transient because it could move through the area during migration but would not nest onsite because the riparian habitat is not suitably appropriate with multi-canopy layers within the forest. Impact on southwestern willow flycatcher would be no greater than current project land uses and impacts to this listed species is considered to be less than significant.

As listed in Table 1 in Appendix B of this IS/MND, six special-status wildlife species are observed on the site. Each of these species either occupies the site as a transient or is a year round resident on the site. Oak titmouse, Cooper's hawk and Nuttall's woodpecker are considered year-round species. Yellow warbler, rufous hummingbird and white-throated swift are considered to be migrants. These were identified by direct observation. McCoy Creek and the southern coast live oak riparian forest are appropriate habitat for these species.

Native birds protected in accordance with the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3500-3516) are expected to nest onsite. Potential direct impacts that would result in loss of individuals or nest abandonment could occur to birds nesting on or adjacent to the site if the removal of any vegetation occurs during the nesting/breeding season (February 1 to August 31). In addition, indirect impacts such as construction noise, dust, and other human disturbances may deter breeding/nesting behaviors if construction occurs during the breeding/nesting season. Potential direct and indirect impacts to protected nesting birds would be potentially significant. Implementation of Mitigation Measure BIO-1 would reduce impacts to nesting birds and habitat. Impacts would be less than significant.

> **BIO-1:** Tree removals, grading, and the initiation of construction shall either: (a) occur outside of the bird nesting season (February 1 to August 31); or (b) be subject to pre-construction bird survey requirements. If vegetation clearing occurs during the breeding season, pre-construction bird nesting surveys shall be

conducted to determine the locations of nesting birds. Bird surveys shall include a minimum of two nesting bird surveys to be conducted by a qualified biologist no more than 5 days prior to the start of vegetation clearing or the initiation of ground disturbing activities. Bird nesting surveys shall be reinitiated if external construction activities are halted for more than five days. The nesting bird surveys shall include an area around the project site of up to 500 feet (where feasible and access is permitted). If an active nest is located, a maximum 300-foot buffer (depending on noise and site conditions) would be established surrounding the nest(s) and the buffer shall be demarcated appropriately (i.e., flagging, orange-mesh construction fencing) for avoidance. If any active raptor nests are found, a 500-foot buffer from the nest shall be established until a qualified biologist can confirm that the nest is no longer active (vacated). These avoidance buffers can be reduced at the discretion of the monitoring biologist, based on the location of the nest, typical ambient noise levels for the area, and/or species tolerance to human disturbances. Disturbance can occur within the buffer area only after the birds are no longer reliant on the nest, as determined by the qualified biologist. The results of the nesting bird survey(s) and any buffer efforts as a result of those surveys shall be documented in a brief letter report and submitted to the City no later than two weeks following the final survey.

Less-than-Significant Impact with Mitigation.

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

Southern coast live oak riparian forest is the only sensitive habitat, as listed by CNDDB that occurs onsite. The habitat occupies 0.87 acre of the site along the stream that runs along the southern and eastern portions of the site. Coast live oaks are the dominant plant species, typically occurring in dense stands that limit the amount of sunlight available to the understory components of the habitat. Southern coast live oak riparian forest, like most riparian habitats, are in rapid decline in southern California due to development. Approximately 0.15 acre or17 percent of southern coast live oak riparian forest habitat on the project site is within or hanging over the project grading limits. The total impact area is 0.23 acre or 27 percent of the oak riparian woodland present on the project site based on the grading limits[6]. Because this habitat is increasingly rare, and because it is associated with the riparian corridor, impacts to the habitat are considered potentially significant. It is important to note that the oak tree report did not find the need to remove any of the oak trees within the riparian area.

BIO-2: Any alteration of a streamcourse or associates riparian vegetation requires that a Section 1600 Agreement be reached with the CDFW. In order to

[6] Additional 0.083 acre of sensitive habitat within the 10-foot buffer added to 0.15 of habitat within grading limits equals 0.23 acre

reach a 1600 Agreement, CDFW will require mitigation for the riparian habitat lost and the stream course area affected, if any. This mitigation may include one or a combination of the following measures: (1) enhancement of quality onsite riparian habitat, usually on a greater than 1:1 habitat lost to habitat enhanced ratio, through the removal of nonnative species occurring within this habitat; (2) creation of offsite riparian habitat where none currently exists; (3) preservation of offsite riparian habitat by direct purchase of payment of an in-lieu fee to the Santa Monica Mountains Conservancy or similar organization; or (4) payment of an in-lieu fee to the CDFW or U.S. Forest Service Nonnative Invasive Plant Removal (riparian enhancement) program. All mitigation measures involving the creation of riparian habitat should be self-sustaining and utilize natural water supplies.

Project plans include the removal of nonnative vegetation from the stream banks and adjacent slopes. The nonnative vegetation that is removed shall be replaced with native species appropriate for stream banks and oak understory. The nonnative (exotic plant) removal plan, particularly eucalyptus and *Vinca major*, and native restoration proposed for the project would be consistent with the McCoy Creek Restoration Plan for the City of Calabasas (EDAW 2003). Implementation of Mitigation Measure BIO-2 would reduce impacts to CDFW jurisdictional habitat to less than significant**.**

Less-than-Significant Impact with Mitigation.

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

Drainage course and their adjacent wetlands are considered "waters of the United States" and fall under the jurisdiction of the USACE in accordance with Section 404 of the Clean Water Act. Jurisdictional wetlands, as defined by the USACE are lands that, during normal conditions, possess hydric soils, are dominated by wetland vegetation, and are inundated with water for a portion of the growing season.

As currently designed, the project would not result in any direct impacts to McCoy Creek streambed or federal waters that would require regulatory agency permitting. During the construction phase of the project, project protection measures would be implemented to ensure no indirect impacts occur to these features, including not placing stockpiles or construction-related materials or equipment upslope or immediately adjacent to these features. Further, a Stormwater Pollution Prevention Plan (SWPPP) would be implemented as a project design feature to prevent the spill of soils, toxics, pollutants, and other chemicals from entering into adjacent drainage features. Project implementation of the SWPPP would reduce potential indirect impacts to jurisdictional features to a less than significant level and no mitigation or permitting would be required. Therefore, no USACE's "Waters of the US" or waters within RWQCB jurisdiction would be impacted. No significant impact would occur.

Less-than-Significant Impact.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

The site does not function as a part of a regional wildlife movement because it is generally isolated away from large blocks of natural open space or native wildlife habitat. Residential and commercial developments are located north of the project site, and across Park Sorrento, with Highway 101 0.25 mile further to the north. A tennis club and commercial complex are located to the east of the project site's boundaries, and another commercial complex is located to the west. Beyond the McCoy Creek to the south is a residential development with waterfront properties around a manmade lake. The only possible connection to large blocks of open space is along McCoy Creek to the southeast. This connection is obstructed partially by several roads and animals traversing it would reach a dead-end at the project site. The site lies outside of the habitat linkages and wildlife movement corridors identified in Figure IV-1 of the City of Calabasas General Plan, and the site does not lie within any Los Angeles County Significant Ecological Area (SEA). Therefore, the proposed project would not result in any impacts to wildlife movement or corridors, or impede the use of native wildlife nursery sites.

The project site has the potential to support songbird nesting due to the presence of shrubs, ground cover, and ornamental and native trees onsite. Nesting activity typically occurs from February 1 to August 31. Disturbing or destroying active nests is a violation of the MBTA (16 U.S.C. 703 et seq.). In addition, nests and eggs are protected under Fish and Wildlife Code Section 3503. As such direct impacts to breeding birds (e.g., through nest removal) or indirect impacts (e.g. by noise causing abandonment of the nest) is considered a potentially significant impact as defined by this threshold of significance. Implementation of Mitigation Measure BIO-1 is required. Compliance with the MBTA would reduce impacts to a less than significant level as detailed in Mitigation Measure BIO-1 above.

Less-than-Significant Impact with Mitigation.

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

The project must comply with Municipal Code Section 17.32.010 for the protection of oak trees (Ordinance). One coast live oak tree in the northwest corner of the site would be removed to construct the project as proposed. Tree number 134, located in a landscape planter to the west of the existing driveway from Park Sorrento, would be removed to allow for the construction of a new structure at that location. Construction of the larger structure within the center of the site would encroach within the protected zone of Heritage oak tree numbers 4, 6, 12, 13, and 24 and non-Heritage oak tree numbers 5 and 129. As defined in the Ordinance, "encroachment" refers to construction taking place

within five feet of a City-protected oak tree's dripline or within 15 feet of its trunk. The protected zone area of each tree and the amount of encroachment into the protected zone is shown on Table 3 in Appendix C of this IS/MND. The seven encroachments and one removal would result in an impact to approximately six percent of the total protected zone area for all of the oak trees.

The encroachments for tree numbers 4, 5, 6, 12, 13, and 24 would result from construction of the new mixed-use structure in the center of the project site. Up to five feet of over-excavation may be required for the building footings. Of particular potential concern are the relative locations of tree numbers 5 and 13. Impacts to City-protected oak trees must be consistent with provisions of the City's Oak Tree Ordinance. The processing of an oak tree permit may require as a condition of approval, that one inch of oak tree diameter shall be planted for each inch of oak tree diameter removed, a cash fee paid to the oak tree mitigation fund, or replacement of additional oak trees to proportionately offset the impacts associated with the loss of oak trees. The following mitigation measure should be followed to establish and maintain a healthy cultural environment for oak trees. Implementation of Mitigation Measure BIO-3 would reduce project impacts to oak trees. Impacts would be less than significant.

> **BIO-3:** All work conducted within the protected zone of an oak tree shall be performed within the presence of a qualified oak tree consultant.
>
> Notice shall be provided to the oak tree consultant and the City of Calabasas 48 hours prior to the planned start of any work in the vicinity of onsite oak trees.
>
> All work within the protected zone of an oak tree shall be accomplished with the use of hand tools only. Except under special circumstances, tractors, backhoes and other vehicles cannot be operated in a manner that would preserve major tree roots, minimize soil compaction, and insure the safety of both the vehicle operator and the tree.
>
> To protect trees within the vicinity of major construction, trees shall be temporarily fenced at the edge of the protected zone prior to the beginning of construction operations on a site. The fence shall be developed in conjunction with the project arborist and constructed of chain link material, a minimum of five feet in height. The fence shall be removed at the completion of the construction upon notification to the City of Calabasas.

Less-than-Significant Impact with Mitigation.

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

The City of Calabasas does not have an adopted Habitat Conservation Plan or Natural Community Conservation Plan. There are no approved local, regional, or state habitat conservation plans in the vicinity of the project, and the project does not occur within the boundaries of the Los Angeles County's Santa Monica Mountains Local Coastal Program. Therefore, the project would have no impact to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

No Impact.

References

Allen, L.W., M. Carmona-Freeman, D.S. Cooper, J. Feenstra, K.L. Garrett, G. George, M. Loquvam, E. Osgood, T. Ryan, M. San Miguel and S. Vigallon (Los Angeles County Sensitive Bird Species Working Group). 2009. Los Angeles County's Sensitive Bird Species. Western Tanager 75(3):1-11.

Edaw, Las Virgenes, McCoy, and Dry Canyon Creeks Master Plan for Restoration, Phase I: Comprehensive Final, 2003 located at: http://www.cityofcalabasas.com/environmental/creek-masterplan/calabasas-restoration-masterplan.pdf

Biological Assessment Services, Biological Resources Technical Report, Park Sorrento, Calabasas, California, November 2016

City of Calabasas, Figure IV-1 Significant Ecological Areas, Linkages, and Corridors, 2030 General Plan, October 2015.

Greeley, Kay J., Oak Tree Report, Park Sorrento Mixed-Use, 23480 Park Sorrento, Calabasas, California 91302, April 14, 2015.

Cultural Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
5. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Discussion

a) *Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?*

As part of the Phase I archaeological study, a records search was conducted on August 11, 2015, at the California Historical Resources Information System (CHRIS) South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. The records search included a review of all recorded cultural resources and previous investigations within a ½-mile radius of the project. The records search results indicate that 11 cultural resources studies have been conducted within the ½ mile records search study area. None of the previous 11 studies included the project area. The records search results also indicate that three cultural resources (Leonis Adobe, Plummer House, and Sagebrush Cantina) have been previously recorded within ½ mile of the project. None of the three cultural resources are located within the project area and no known historical resources would be impacted by the project.

A review of historic maps and aerial photographs indicates that the project vicinity was largely rural with orchards present from at least 1944 though the late1950s, though the project area appears to be undeveloped during this time. By the 1960s residential and commercial development began to spread from the east largely replacing the orchards, but the project area remained undeveloped. By 1977 the project area was completely developed for commercial purposes. The project area does not appear to have substantially changed since 1977. A review of the County Assessor's online database indicates that the onsite buildings were constructed in 1974 and do not meet the California Office of Historic Preservation's 45-year age threshold for recording as potential historical resources.

A Sacred Lands File (SLF) search for the proposed project was requested from the California Native American Heritage Commission (NAHC) on February 17, 2017. The

results provided by the NAHC on February 22, 2017 did not indicate the presence of Native American cultural resources within or in close proximity to the project.

The project includes a General Plan Amendment. Therefore, the City consulted with the Gabrieleno Band of Mission Indians – Kizh Nation (Tribe) in conformance with SB 18. The Tribe did not identify known cultural places located on land within the City's jurisdiction that would be affected by the proposed General Plan Amendment; however, the Tribe indicated that the project area is sensitive for prehistoric and ethnohistoric Native American archaeological resources due to its proximity to water sources and trade routes.

A systematic cultural resources survey of the project area was conducted on August 18, 2015, using linear transects spaced at 5 meter intervals. The majority of the project area consisted of paved surfaces and structures, though approximately 20 percent consisted of landscaped lawns, planter areas, bare spots in the lawns and bare areas along an arroyo bank, which were investigated for evidence of archaeological materials. No cultural resources were identified as a result of the survey.

No known historical resources were identified as a result of the Phase I cultural resources study. Although the project area has been disturbed by the construction of commercial improvements, the Tribe indicated that there is a potential for resources to be located in the undeveloped portions of the project area.. Project-related ground disturbing activities could impact previously unknown archaeological resources. A significant impact to archaeological resources would occur if the project results in a substantial adverse change in the significance of a historical resource. Archaeological resources that are found eligible for listing in the California Register are considered historical resources under CEQA (CEQA Guidelines Section 15064.5(c)), and impacts to these resources could constitute a significant effect on the environment. There is a possibility that subsurface archaeological resources could be encountered as a result of project-related ground-disturbing activities and impacts these resources could constitute a substantial adverse change in the significance of a historical resource. With the incorporation of Mitigation Measures CUL-1 and CUL-2, potential impacts to archaeological resources that qualify as historical resources would be reduced to less than significant.

> **CUL-1:** Prior to the issuance of a demolition or grading permit, and start of any ground disturbing activities, the applicant shall retain a Native American monitor from a tribe who is culturally and traditionally affiliated with the project area (i.e., of Gabrieleño Ancestry), as indicated by the Native American Heritage Commission contact list. The Native American monitor shall observe all project-related, ground-disturbing construction activities (e.g., pavement removal, auguring, boring, grading, excavation, potholing, trenching, grubbing, and weed abatement) and during all soil movement of previously undisturbed soils.
>
> **CUL-2:** In the event of the unanticipated discovery of archaeological materials, all work shall immediately cease in the area (within approximately 100 feet) of

the discovery until it can be evaluated by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008). Construction shall not resume until the qualified archaeologist has conferred with the City on the significance of the resource, who shall confer with the appropriate Native American representatives regarding significance of any prehistoric or ethnohistoric resources.

If it is determined that the discovered archaeological resource constitutes a historical resource or a unique archaeological resource under CEQA, avoidance and preservation in place shall be the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, an Archaeological Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with the City that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. The qualified archaeologist and the City shall consult with appropriate Native American representatives in determining treatment and disposition of prehistoric or ethnohistoric resources to ensure cultural values ascribed to the resource, beyond that which is scientifically important, are considered.

Less-than-Significant Impact with Mitigation.

b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

As discussed above, no archaeological resources were identified in the project area. However, there exists the possibility that project-related ground disturbing activities could impact previously unknown archeological resources that could qualify as unique archaeological resources pursuant to CEQA. With the incorporation of Mitigation Measures CUL-1 and CUL-2, potential impacts to archaeological resources that qualify as unique archaeological resources would be reduced to less than significant.

Less-than-Significant Impact with Mitigation.

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

A paleontological database search for fossil localities and fossil-bearing sediments located within the general project vicinity was requested from the Natural History Museum of Los Angeles County (NHMLAC) on February 17, 2017.

Results of the paleontological resources records search received on March 6, 2017, indicate that no vertebrate fossil localities are known to be directly within the project area (McLeod 2017). Surficial deposits within the project area are composed of Holocene Quaternary alluvium (Dibble and Ehrenspeck 1992). Nearby outcrops are mapped as unnamed shale and sandstone, and are likely correlative with the Miocene Modelo Formation (Dibble and Ehrenspeck 1992). While at the surface the Quaternary alluvium sediments are too young to preserve fossils, their age and paleontological sensitivity increases with depth. The NHMLAC has fossil localities from older alluvial sediments in the vicinity of the project area, where mammoth (Mammutidae), horse (*Equus*), and ground sloth (*Paramylodon*) have been recovered (McLeod 2017). Numerous significant fossils are also known from the Modelo Formation, with the localities closest to the project area yielding specimens of bony fish (Osteichthyes), lanternfish (Myctophidae), leatherback turtle (*Psephophorus*), porpoise (Phocoenidae), baleen whale (Mysticeti), and a shearwater bird (*Puffinus*) (McLeod 2017).

According to the records search results, both the subsurface Miocene marine deposits of the Modelo Formation and the deeper portions of the Quaternary alluvium in the project area may contain significant vertebrate fossils (McLeod 2017). The depth of the sensitive alluvial sediments has not been determined in the project area. As a result, ground disturbing activities over 5 feet in depth should be considered as potentially intruding upon sensitive rock units and could cause impacts to unique paleontological resources. With the incorporation of Mitigation Measures CUL-3, CUL-4, and CUL-5, potential impacts to paleontological resources would be reduced to less than significant.

> **CUL-3:** Prior to earthmoving activities, a Qualified Paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP 2010) shall be retained. The Qualified Paleontologist shall review all design plans and geotechnical investigations related to the project in order to ascertain where ground disturbing activities could impact highly sensitive sediments.
>
> The Qualified Paleontologist shall also contribute to any construction worker cultural resources sensitivity training either in person or via a training module provided to the Qualified Archaeologist. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project area and the procedures to be followed if they are found. The applicant shall submit documentation to the City of Calabasas demonstrating that construction personnel attended the training discussed above.
>
> **CUL-4:** Full-time paleontological resources monitoring shall be conducted of all ground disturbances over 5 feet in depth that extend into paleontologically sensitive sediments. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (or cross-trained archaeological/paleontological monitor) under the direction of the Qualified Paleontologist. Monitors shall have the authority to temporarily halt or divert

work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. The Qualified Paleontologist, based on observations of subsurface soil stratigraphy or other factors, may reduce or discontinue monitoring, as warranted, if the Qualified Paleontologist determines that the possibility of encountering fossiliferous deposits is low. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The Qualified Paleontologist shall prepare a final monitoring and mitigation report to be submitted to City of Calabasas and filed with the local repository.

CUL-5: If construction or other project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease until the Qualified Paleontologist has assessed the discovery and made recommendations as to the appropriate treatment.

Less-than-Significant Impact with Mitigation.

d) *Disturb any human remains, including those interred outside of dedicated cemeteries?*

No known cemeteries or other burial places are known to exist within the project area. However, because the proposed project would involve earthmoving activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. With the incorporation of Mitigation Measures CUL-1 and CUL-6, potential impacts to human remains would be less than significant.

CUL-6: If human remains are encountered, the applicant shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5 and the City of Calabasas Planning Division. If the County Coroner determines that the remains are Native American in origin, the NAHC shall be notified, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code Section 5097.98 (as amended by AB 2641). The NAHC shall designate a Most Likely Descendant for the remains per Public Resources Code Section 5097.98. Until the landowner has conferred with the Most Likely Descendant, the applicant shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

Less-than-Significant Impact with Mitigation.

References

Dibblee, E. and H. Ehrenspeck, 1992. Geologic map of the Calabasas quadrangle, Los Angeles and Ventura Counties, California. Dibblee Geological Foundation Map DF-37. 1:24,000 scale.

McLeod, Samuel A., Paleontological resources for the proposed 23480 Park Sorrento Project, in City of Calabasas, letter report prepared by the Los Angeles County Natural History Museum for Environmental Science Associates, March 2017.

Society of Vertebrate Paleontology, 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Available: http://www.vertpaleo.org/Impact_Mitigation_Guidelines.htm. Accessed: March 13, 2017.

Toren, A. George and Gwen R. Romani, *Phase I Archaeological Study: 23480 Park Sorrento, City of Calabasas, Los Angeles County, California*, prepared for Raznick Reality Group by Compass Rose, Inc., August 2015.

Totten, Gale, *Sacred Lands File Search Results for the 23480 Park Sorrento Project, City of Calabasas*, letter report prepared by the California Native American Heritage Commission for the Environmental Science Associates, February 2017.

Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
6. GEOLOGY, SOILS, AND SEISMICITY — Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion

a.i) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?*

According to the project-specific Preliminary Geotechnical Engineering Investigation (Appendix E of this IS/MND), the project site is not located within an Alquist-Priolo Fault-Rupture Hazard Zone, and no known active fault is mapped on the project site (GeoConcepts 2015). Therefore, the potential for the rupture of a known earthquake fault is less than significant.

Less-than-Significant Impact.

a.ii) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*

The City of Calabasas is located in southern California, which is a seismically active region that is susceptible to occasional earthquakes. The proposed project would be required to be designed and constructed in compliance with the California Building Code (CBC) and City of Calabasas Municipal Code. These guidelines are considered the minimum standards for design and construction of buildings in the southern California area and would be incorporated into the proposed project's design. Because design and construction of the proposed project would be in compliance with the CBC's recommended seismic design criteria and would achieve an "acceptable level" of risk, as defined by the State of California, impacts to the proposed project caused by strong seismic ground shaking would be less than significant.

Less-than-Significant Impact.

a.iii) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*

Liquefaction is the transformation of loose sediment or soil into a fluid state, usually as a result of ground shaking. Soils that are most susceptible to liquefaction are poorly consolidated and water-saturated. Liquefaction can cause significant earthquake-related damage because structures located on ground that liquefies can collapse or sink into the ground. According to the City of Calabasas 2030 General Plan and the site-specific Preliminary Geotechnical Engineering Investigation, the proposed project is located within a designated liquefaction zone (GeoConcepts 2015). However, the proposed project would be constructed in compliance with earthquake-resistant standards as required by the CBC and the City's Building and Safety Division. With appropriate design precautions, the potential for liquefaction or seismically induced settlement within the project site would be small. Therefore, the potential for liquefaction would be low and impacts related to liquefaction would be less than significant.

Less-than-Significant Impact.

a.iv) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?*

Landslides have the potential to damage and destroy structures, roadways and other improvements as well as to deflect and block drainage channels, causing further damage and erosion. The proposed project would not be located in a landslide area as identified by the City of Calabasas 2030 General Plan Update, and is located in a generally flat area of the San Fernando Valley (City of Calabasas 2015; GeoConcepts 2015). According to the site-specific Preliminary Geotechnical Engineering Investigation, no ancient or recent bedrock landslides or surficial slumps were observed on the project site. Further, the proposed project would be constructed in compliance with the requirements of the CBC

and the City's Building and Safety Division. Therefore, the impacts related to landslides would be less than significant.

Less-than-Significant Impact.

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

The proposed project would be located within previously developed and disturbed areas. Construction activities could produce exposed soils that could be impacted by short-term erosion during windy or rainy conditions and construction vehicles traveling through the site. Rain events could erode exposed soils and create sediment-laden runoff. However, contractors would implement a SWPPP in compliance with the National Pollutant Discharge Elimination System (NPDES) requirements for stormwater discharges at construction sites. The NPDES Construction General Permit requires the permittees to develop and implement erosion and sediment control best management practices (BMPs) to control/reduce the erosion and loss of topsoil and the consequential discharge of sediment. Once construction is complete, the project site would be either resurfaced or landscaped, and additional operational impacts related to soil erosion or loss of topsoil would not occur. Implementation of the SWPPP and associated BMPs would limit impacts related to soil erosion, loss of topsoil, short-term erosion, and runoff. Therefore, impacts related to soil erosion or the loss of topsoil would be less than significant.

Less-than-Significant Impact.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?*

As stated above, the project site is not located within a landslide area, and the proposed project would be constructed in compliance with CBC and City requirements related to liquefaction risks. Subsidence is the lowering of ground surface as a result of withdrawal of fluids such as water, oil, and gas from the subsurface. According to the City of Calabasas 2030 General Plan Update EIR, no known areas of subsidence are located within the city (City of Calabasas 2008). Lateral spreading, similar to liquefaction, occurs when a subsurface layer liquefies and forces cause the layer and the overlying non-liquefied material to move in a downslope direction. However, the project site is not located adjacent to slopes. According to the Preliminary Geotechnical Engineering Investigation, lateral spreads should not pose any significant hazard to the project site (GeoConcepts 2015). Further, the proposed projects would comply with regulations required by the CBC. Therefore, the proposed project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project. Therefore, impacts related to unstable soil would be less than significant.

Less-than-Significant Impact.

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Expansive soils are generally clayey and swell when wetted and shrink when dried. These volume changes can cause cracking of structures built on expansive soils. According to the City of Calabasas 2030 General Plan Update EIR, moderate to highly expansive soils are encountered throughout the city (City of Calabasas 2008). However, according to the Preliminary Geotechnical Engineering Investigation, expansive soils were not encountered on the project site (GeoConcepts 2015). In addition, the proposed project would comply with regulations required by the CBC and the City's Building and Safety Division, including installing engineered fill to offset any expansive soils if found on the project site. Therefore, impacts from expansive soils would be minimized through CBC design requirements and impacts would be less than significant.

Less-than-Significant Impact.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

Construction of the proposed project would not include the installation of a new septic system, as the proposed bathrooms would tie into the existing sewer system located at the project site. No impacts regarding septic tanks or alternative wastewater disposal systems would occur.

No Impact.

References

City of Calabasas. 2015. General Plan 2030 Update. Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

City of Calabasas. 2008. General Plan 2030 Update EIR. Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

GeoConcepts, Inc. 2015. Preliminary Geotechnical Engineering Investigation for 23480 Park Sorrento. September 30, 2015.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

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

State regulated greenhouse gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). CO_2 is the most abundant greenhouse gas (GHG) in the atmosphere. Not all GHGs exhibit the same ability to induce climate change; as a result, GHG contributions are commonly quantified in equivalent mass of CO_2, denoted as CO_2e. Mass emissions are calculated by converting pollutant specific emissions to CO_2e emissions by applying the proper global warming potential (GWP) value. These GWP ratios are available from the United Nations Intergovernmental Panel on Climate Change (IPCC) and are published in the *Fourth Assessment Report* (AR4). By applying the GWP ratios, project related CO_2e emissions can be tabulated in metric tons (MT) per year.

Neither the City of Calabasas nor the SCAQMD have adopted a numerical significance threshold for assessing impacts related to GHG emissions, and the City of Calabasas has not formally adopted a local plan for reducing GHG emission. Section 15064.4 of the CEQA Guidelines was adopted to assist lead agencies in determining the significance of the impacts of GHGs. This Guideline section urges lead agencies to quantify GHG emissions of projects where possible. In addition to quantification, this section recommends consideration of qualitative factors that may be used in the determination of significance (i.e., extent to which the project may increase or reduce GHG emissions compared to the existing environment; whether the project exceeds an applicable significance threshold; and extent to which the project complies with regulations or requirements adopted to implement a reduction or mitigation of GHGs). The amendments themselves do not establish a threshold of significance. Lead agencies are called on to establish significance thresholds for their respective jurisdictions in which a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, so long as any threshold chosen is supported by substantial evidence (see Section 15064.7(c)). The CEQA Guidelines amendments also clarify that the effects of

GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see Section 15130(f)).

When no guidance exists under CEQA, the lead agency may look to and assess general compliance with comparable regulatory schemes. In its January 2008 *CEQA and Climate Change* white paper, the California Air Pollution Control Officers Association (CAPCOA) identified a number of potential approaches for determining the significance of GHG emissions in CEQA documents. In its white paper, CAPCOA suggests making significance determinations on a case-by-case basis when no significance thresholds have been formally adopted by a lead agency.

The SCAQMD released draft guidance regarding interim CEQA GHG thresholds of significance in October 2008, proposing a tiered approach whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. "Tier 3," the primary tier by which SCAQMD currently determines the significance of stationary emission sources, relies on Executive Order S-3-05 as the basis for a screening level, and was established at a level that captures 90 percent of Air Basin-wide land use GHG emissions. The SCAQMD proposed a screening level of 3,000 MT of CO_2e per year for commercial or mixed-use residential projects under which project impacts are considered less than significant, "to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors." In CAPCOA's January 2008 CEQA and Climate Change white paper, CAPCOA suggested a possible quantitative threshold option that would capture 90 percent of GHG emissions from future discretionary development projects. According to CAPCOA, the "objective was to set the emission threshold low enough to capture a substantial fraction of future residential and nonresidential development that will be constructed to accommodate future statewide population and job growth, while setting the emission threshold high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions." A 90 percent capture rate would "exclude the smallest proposed developments from potentially burdensome requirements … to mitigate GHG emissions." The SCAQMD's proposed screening level of 3,000 $MTCO_2e$ per year is a South Coast Air Basin-specific level that would meet CAPCOA's intent for the suggested quantitative threshold option. It should be noted that the SCAQMD has formally adopted a GHG significance threshold of 10,000 $MTCO_2e$ per year for industrial/stationary source projects where the SCAQMD is the lead agency based on a 90 percent capture rate for the industrial/stationary source sector. Given the lack of a formally adopted numerical significance threshold applicable to this project, the significance of the project is evaluated based on the SCAQMD's proposed screening level of 3,000 $MTCO_2e$, which as explained above is a SCAB-specific level that would meet CAPCOA's intent for the suggested quantitative threshold option.

For purposes of this analysis, it is considered reasonable and consistent with criteria pollutant calculations to consider those GHG emissions resulting from project-related

incremental (net) increase in the use of on-road mobile vehicles, electricity, and natural gas compared to existing conditions. This includes project construction activities such as demolition, hauling, and construction worker trips. This analysis also considers indirect GHG emissions from water conveyance, wastewater generation, and solid waste handling. Since potential impacts resulting from GHG emissions are long-term rather than acute, GHG emissions are calculated on an annual basis. In order to report total GHG emissions using the CO_2e metric, the GWP ratios corresponding to the global warming potential of CO_2 over a 100-year period is used in this analysis.

The project's net increase in GHG emissions is estimated using the California Emissions Estimator Model (CalEEMod), which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered by the SCAQMD to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.

Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source emissions factors. The emissions estimated from the CalEEMod (Version 2016.3.1) software are based on outputs from the OFFROAD and EMFAC models, which are emissions estimation models developed by the California Air Resources Board (CARB) and used to calculate emissions from construction activities, including on- and off-road vehicles and equipment. The output values used in this analysis were adjusted to be project-specific based on equipment types and the construction schedule. These values were then applied to the same construction phasing assumptions used in the criteria pollutant analysis (see Issue 3, Air Quality,) to generate GHG emissions values for each construction year. CalEEMod outputs construction-related GHG emissions of CO_2, CH_4, N_2O, and CO_2e. These values are reported in units of metric tons for consistency with general state, federal, and global GHG emission inventories. The CO_2e emissions are calculated for the construction period and future project build-out conditions in order to estimate the net change in GHG emissions from project construction and operation. Emissions of GHGs from construction activities occur over a relatively short-term period of time and contribute a relatively small portion of the overall lifetime project GHG emissions. Furthermore, according to the SCAQMD, "GHG emission reduction measures for construction equipment are relatively limited." Therefore, SCAQMD staff recommends that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures would address construction GHG emissions as part of the operational GHG reduction strategies. In order to consider project construction GHG emission in the larger operational context, GHG emissions

from construction have been amortized over a 30-year lifetime of the project (i.e., total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate comparable to operational emissions) consistent with SCAQMD recommendations.

Operational emissions were estimated using CalEEMod for the existing site uses and the project in order to determine the net incremental change in GHG emissions. Mobile source emissions are based on the vehicle emission factors from EMFAC and the trip length values for the existing and project land uses in CalEEMod, which are SCAB-wide average trip distance values. To estimate the total vehicle miles traveled (VMT) generated by existing site and project trips, trip generation rates provided in the project traffic study were used.

With regard to energy usage, the consumption of fossil fuels to generate electricity and to provide heating and hot water generates GHG emissions. Future fuel consumption rates are estimated based on specific square footage of the existing and project land uses, as well as estimated water supply needs. Energy usage (off-site electricity generation and onsite natural gas consumption) for the project is calculated within CalEEMod using the California Energy Commission (CEC) California Commercial End Use Survey (CEUS) data set for nonresidential uses, which lists energy demand by building type. Since the data from the CEUS is from 2002, the emissions modeling using the CalEEMod software incorporates correction factors to account for compliance with the current Title 24 Building Standards Code. This assessment also includes electricity-related GHG emissions from the proposed parking structure, which would include elevators and lighting. The energy use from residential land uses is calculated based on the CEC Residential Appliance Saturation Survey (RASS) from 2009, which also incorporates correction factors to account for compliance with the current Title 24 Building Standards Code. The existing site uses were modeled using CalEEMod historical energy factors based on previous Title 24 standards.

Water and wastewater generated from the existing site and project requires energy to supply, distribute and treat. The CalEEMod software uses the electrical intensity factors from the 2006 CEC report *Refining Estimates of Water-Related Energy Use in California*. The emissions of GHGs associated with the wastewater treatment process emissions are also calculated using the CalEEMod software as described in the *California Emissions Estimator Model User's Guide, Appendix A.*

Emissions from solid waste handling generated from the existing site and project are also accounted for in the GHG emissions inventory. The GHG emission factors, particularly for CH_4, are based on the default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery).

Other sources of GHG emissions from operation of the existing site uses and project uses include equipment used to maintain landscaping, such as lawnmowers and trimmers. The CalEEMod tool uses landscaping equipment GHG emission factors from the CARB

OFFROAD2011 model and the CARB *Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003)*. The CalEEMod software conservatively estimates that landscaping equipment operate for 250 days per year in the South Coast Air Basin. Emissions from residential natural gas-fired fireplaces were included for all residential units. SCAQMD Rule 445 (Wood-burning Devices) prohibits the installation of permanent wood-burning fireplaces in new developments. If the final designs for the project do not include fireplaces in all residential units, emissions for area sources would be lower than reported herein.

Emissions calculations for the project include credits or reductions for GHG reducing measures that are required by regulation, such as reductions in energy and water demand from the current Title 24 standards and the California Green Building Standards (CALGreen) Code. The City's Green Building Code adopts by reference the CALGreen Code, as well as additional City requirements (Section 15.04.960. of the Calabasas Municipal Code [CMC]). Since the project proposes new buildings greater than 5,000 square feet, the project would also be subject to the City's Green Development Standards (Section 17.34 et al. of the CMC), which requires the commercial component to achieve at a United States Green Building Council (USGBC) LEED "Certified" rating. The project would implement green building designs, including energy efficient building systems and installation of water efficient fixtures, to achieve a LEED "Certified" rating.

The emissions of GHGs associated with construction of the project were calculated for each year of construction activity. Results of the GHG emissions calculations are presented on **Table 3-5**. The maximum annualized GHG emissions for the existing site and project (including project construction amortized over 30 years) are shown in **Table 3-6**. Detailed GHG emissions estimates for the existing site and project are provided in Appendix F. As shown in Table 3-6, the incremental net change in project GHG emissions would not exceed the threshold of significance. The project would result in a net decrease in GHG emissions relative to the existing site baseline due to reduced mobile source and energy-related GHG emissions. Mobile sources of GHG emissions are expected to decline relative to existing conditions on a per vehicle average basis as state and federal vehicle emissions standards are phased-in and older vehicles are replaced with newer vehicles that meet the more stringent emissions standards. Similarly, new buildings designed and constructed to meet Title 24 standards and the CALGreen Code would result in declining energy-related GHG emissions relative to older buildings. Therefore, it is not unexpected that the project, even with a slight increase in daily trips under the senior housing and bank use configuration and a modest increase in total building floor area relative to existing conditions, would result in a net decrease in GHG emissions at the modeled buildout year relative to the existing site baseline. As a result, the project would have a less than significant impact with respect to construction and operational GHG emissions.

TABLE 3-5
ESTIMATED UNMITIGATED CONSTRUCTION GREENHOUSE GAS EMISSIONS

Emissions Source	CO_2e (metric tons) [a]
Total Construction Emissions	442
Amortized Emissions	15

[a] Totals may not add up exactly due to rounding in the modeling calculations.

SOURCE: ESA, 2017.

TABLE 3-6
ESTIMATED PROJECT ANNUAL GREENHOUSE GAS EMISSIONS (BUILDOUT YEAR 2020)

Emissions Source	Existing Site CO_2e (metric tons) [a]	Project CO_2e (metric tons) [a]
Construction (Amortized)	—	15
On-Road Mobile	859	358
Area	<1	11
Electricity	143	75
Natural Gas	15	31
Water and Wastewater	36	22
Solid Waste	12	5
Total	**1,066**	**517**
Project Net Total	—	**(549)**
Significance Threshold	—	**3,000**
Exceeds Threshold?	—	**No**

[a] Totals may not add up exactly due to rounding in the modeling calculations.

SOURCE: ESA, 2017.

Less-than-Significant Impact.

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

The Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32 and codified into law in Health and Safety Code (HSC) Division 25.5, requires the State to achieve 1990 GHG emission levels by 2020 by setting statewide GHG reduction targets. To achieve these goals, the CARB has established an emissions cap and developed a *Climate Change Scoping Plan* to identify mandatory strategies for reducing statewide GHG emissions. In addition, the California Climate Action Team (CAT) was formed which consists of members of various state agencies tasked with identifying strategies to

reduce GHG emissions. Several other bills have been passed as a companion to AB 32 which include Senate Bill (SB) 1368 (electricity generation standards), SB 97 (CEQA analysis for GHGs), Low Carbon Fuel Standards, SB 375 (Regional Transportation Planning and GHG emissions), CALGreen building standards and others plans to achieve the goals of AB 32. Since AB 32 sets statewide targets for future GHG emissions, the Scoping Plan and other implementing tools of the law are clear that the reductions are not expected to occur uniformly from all sources or sectors. In 2014, CARB released the First Update to the *Climate Change Scoping Plan*, which provided updated GHG reduction goals for the state accounting for regulations set in place by the Legislature and the Governor up through 2011. In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197; both were signed into law by the Governor. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities. CARB is in the process of preparing the second update to the *Climate Change Scoping Plan* to reflect the 2030 target established in SB 32 and AB 197. In addition, SB 350 (Chapter 547, Statues of 2015), assigned into law in October 2015, increased the Renewables Portfolio Standard from 33 percent by 2020 to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027.

The GHG emissions analysis in this IS/MND was performed in accordance with SCAQMD and CARB guidance developed in compliance with, and as a result of, those regulations and programs to ensure that new development complies with those same regulations and programs. The result of the analysis of the project's potential impacts in terms of GHG and global climate change indicates that the construction- and operational-related GHG emissions from the project alone would not be expected to cause a direct physical change in the environment. Therefore, the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHG.

In support of AB 32, the State has promulgated laws and strategies aimed at reducing GHG emissions, some of which are applicable to the project. According to CARB in its First Update to the *Climate Change Scoping Plan*, infill development that offers a mix of uses can reduce dependence on motor vehicles, thus reducing associated GHG emissions. Thus, the project would be consistent with reducing GHG emissions via infill development strategies in close proximity to public transportation and other nearby offsite land uses. Consistent with AB 32, the project would minimize construction-related GHG emissions by using equipment that meet stringent USEPA emissions standards, using low carbon vehicle fuels as required under state law, and prohibiting diesel-fueled commercial motor vehicle idling consistent with CARB requirements.

The project would minimize operational-related GHG emissions by focusing on energy and water conservation, which would be achieved through the use of energy efficient heating, ventilation, and air conditioning (HVAC) and lighting systems, Energy Star-

rated appliances, and low-flow plumbing fixtures. Under the City of Calabasas' Green Building Code and CMC Section 17.34.010, any new non-residential developments over 500 square feet are required to meet LEED standards. Developments between 500 and 5,000 square feet are required to achieve a LEED "Certified" rating and projects over 5,000 square feet are required to achieve a LEED "Silver" rating. Consistent with the CMC the commercial component of the project would be designed to achieve a minimum of LEED "Certified" rating or equivalent. Projects that achieve LEED requirements encourage less impactful design, construction, and operation that would ultimately the environmental footprint, including GHG emissions and resource consumption.

The project is located within a transportation-efficient location that neighbors nearby shopping, restaurants, public transit, and recreational areas. According to SCAG, incorporating "smart land use strategies encourages walking, biking, and transit use, and therefore reduces vehicular demand" and associated pollutants. Additionally, the SCAG RTP/SCS seeks better "placemaking," defined as "the process of developing options for locations where [people] can live and work that include a pleasant and convenient walking environment that reduces their reliance on their car." City of Calabasas Municipal Code states that senior residential projects should be placed "within walking distance (one quarter mile) of available transit, major transportation routes, shopping facilities, and medical facilities." The proposed project lies within a quarter mile of the Park Granada/Calabasas Road bus stop, the Calabasas Commons shopping center, and various medical facilities. Therefore, the walkability of the proposed project location is considered consistent with SCAG RTP/SCS and City of Calabasas' goals.

The project would be consistent with other state and local GHG reduction measures from applicable plans. **Table 3-7** contains a list of other state, regional, and local GHG-reduction strategies applicable to the project, the identified related projects, and future development similar in scope and location. Included are the regulations or guidelines from which the strategies were developed. The project-level analysis highlights the manner by which the project intends to meet the applicable strategies. Because the project would not conflict with strategies to reduce GHG emissions, it would be consistent with the overarching regulation to reduce GHG emissions and impacts would be less than significant.

TABLE 3-7
PROJECT CONSISTENCY WITH APPLICABLE GHG REDUCTION STRATEGIES

Strategy	Description	Demonstration of project Consistency
AB 1493	Reduces GHG emissions in new passenger vehicles from 2012 through 2016. Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020	**Consistent.** This measure applies to all new vehicles and the project would not conflict with its implementation.

Strategy	Description	Demonstration of project Consistency
SB 1368	Establishes an emissions performance standard for power plants within the State of California.	**Consistent.** Southern California Edison provided power is subject to the performance standards. The project would not conflict with the implementation of this measure.
Low Carbon Fuel Standard	Establishes protocols for measuring life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels.	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with the implementation of this measure. Construction and operational vehicles association with the project would utilize low carbon transportation fuels as required under this measure.
CALGreen (2016) Requirements	Comply with applicable site development planning and design measures such as bicycle parking and light pollution reduction for nonresidential development.	**Consistent.** The project would be consistent with this requirement via compliance with City ordinances and/or the CALGreen Code. The project would provide 48 bicycle stalls for residents, guests, and commercial uses. The proposed project would be required to adhere to lighting regulations in Chapter 17.27 of the Calabasas Municipal Code, including but not limited to, shielding, light levels, and placement of landscaping to reduce glare, thus minimizing light pollution.
	Comply with applicable electric vehicle charging space requirements. For new multi-family dwellings (17 or more on a site), 3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging spaces capable of supporting future electric vehicle supply equipment (EVSE) (calculations shall be rounded up to the nearest whole number). For new nonresidential development, the number of EVSE-capable parking spaces shall be based on Table 5.106.5.3.3 in Chapter 5 (Nonresidential Mandatory Measures). The number of EVSE-capable spaces ranges from 0 to 10 for actual parking spaces of 0 to 200 and 6 percent of the total spaces (rounded up to the nearest whole number) for actual parking spaces of 201 or more.	**Consistent.** The project would be consistent with these requirements via compliance with City ordinances and/or the CALGreen Code. The project would install the minimum required number of EVSE as required for the residential and the nonresidential uses of the project.

Strategy	Description	Demonstration of project Consistency
	Comply with indoor water usage requirements by using low-flow water fixtures that meet the prescribed flow rates (residential and non-residential). Comply with outdoor water usage requirements as prescribed (residential and non-residential).	**Consistent.** The project would be consistent with this requirement via compliance with City ordinances and/or the CALGreen Code.
	Comply with material conservation and resource efficiency measures including applicable weather resistance and moisture management measures.	**Consistent.** The project would be consistent with this requirement via compliance with City ordinances and/or the CALGreen Code.
	Comply with VOC emissions limits for carpet systems, composite wood products, and flooring.	**Consistent.** The project would be consistent with this requirement via compliance with City ordinances and/or the CALGreen Code.
	Requires a minimum of 65 percent recycle or reuse of nonhazardous construction and demolition debris.	**Consistent.** The project would be consistent with this requirement via compliance with City ordinances and/or the CALGreen Code.
CARB ATCM	Reduce diesel-fueled commercial motor vehicle idling.	**Consistent.** The project is committed to implementing this action to the extent feasible. Construction trucks would comply with CARB's anti-idling measure.
Climate Action Team	Achieve California's 50 percent waste diversion mandate (Integrated Waste Management Act of 1989) to reduce GHG emissions associated with virgin material extraction.	**Consistent.** The CALGreen Code implements a more stringent requirement, and the project would be consistent with or exceed this requirement.
	Plant five million trees in urban areas by 2020 to effect climate change emission reductions.	**Consistent.** The project would provide appropriate landscaping on the project site including vegetation and trees. The project would include a total of 51 new trees, which would support and be consistent with the strategy of planting trees in urban areas throughout the State.
	Implement efficient water management practices and incentives, as saving water saves energy and GHG emissions.	**Consistent.** CALGreen Code implements this goal, and the project would be consistent with the requirements.
	The California Energy Commission updates building energy efficiency standards that apply to newly constructed buildings and additions to and alterations to existing buildings. Both the Energy Action Plan and the Integrated Energy Policy Report call for ongoing updating of the standards.	**Consistent.** CALGreen Code implements this goal, and the project would be consistent with the requirements.

Strategy	Description	Demonstration of project Consistency
	Reduce GHG emissions from electricity by reducing energy demand. The California Energy Commission updates appliance energy efficiency standards that apply to electrical devices or equipment sold in California. Recent policies have established specific goals for updating the standards; new standards are currently in development.	**Consistent.** CALGreen Code implements this goal, and the project would be consistent with the requirements
	Apply strategies that integrate transportation and land use decisions, including but not limited to promoting jobs/housing proximity, high-density residential/commercial development along transit corridors, and implementing intelligent transportation systems.	**Consistent.** The project would be located in an infill location in proximity to existing residential and commercial businesses and numerous public transportation options, which would minimize trip lengths and associated emissions.
City of Calabasas Sustainable Communities	Make transit information easily available and understandable in multiple languages.	**Consistent.** The project would provide onsite residents with transit information as part of the project's effort to reduce vehicle trips and VMT and encourage alternative modes of transportation for patrons and employees
	Promote walking and biking to work.	**Consistent.** The project would meet or exceed this requirement as part of the incorporated physical and operational project characteristics to reduce vehicle trips and VMT and encourage alternative modes of transportation for residents and employees.
	Reduce or recycle 70 percent of trash by 2015.	**Consistent.** The project would provide areas for the collection of recyclable materials on the project site. The project would be consistent with this requirement via compliance with City ordinances and/or the CALGreen Code.

Source: ESA, 2017.

As discussed previously, in 2016, the California State Legislature adopted SB 32 and its companion bill AB 197, which amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities. However, studies have shown that, in order to meet the 2030 and 2050 targets, aggressive technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, would be required. In its Climate Change

Scoping Plan, CARB acknowledged that the "measures needed to meet the 2050 goal are too far in the future to define in detail."

In the First Update, however, CARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." Due to the technological shifts required and the unknown parameters of the regulatory framework in 2030 and 2050, quantitatively analyzing the project's impacts further relative to the 2030 and 2050 goals currently is speculative for purposes of CEQA. Although the project's operational emissions are estimated for the buildout year of 2019, the project's operational emissions levels for future years 2030 and 2050 cannot yet be reliably quantified because they are dependent on future yet-to-be adopted GHG reduction regulations, CARB strategies under the yet-to-be-adopted *Second Update to the Climate Change Scoping Plan*, and future actions by utility providers and vehicle and equipment manufacturers, statewide efforts are underway to facilitate the State's achievement of the 2030 and 2050 goals and it is reasonable to expect the project's emissions level to decline as the regulatory initiatives identified by CARB in the First Update and forthcoming Second Update are implemented, and other technological innovations occur. These forthcoming initiatives could include requiring greater renewable energy from utility providers (Renewables Portfolio Standard) and further reduced GHG tailpipe emissions standards for motor vehicles. Stated differently, the project's emissions total at build-out represents the maximum emissions inventory for the project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the future) in furtherance of the State's environmental policy objectives. As such, given the reasonably anticipated decline in project emissions once fully constructed and operational, the project would be consistent with the Executive Orders' and HSC Division 25.5 goals.

Less-than-Significant Impact.

References

Associated Transportation Engineers, Updated Traffic, Circulation and Parking Study for the Park Sorrento Mixed-Use Project, (2016).

California Air Pollution Control Officer's Association, CEQA and Climate Change, (2008) 42-44.

California Air Pollution Control Officers Association, California Emissions Estimator Model User's Guide, (2013).

California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).

California Air Resources Board, First Update to the Climate Change Scoping Plan, (2014) 104.

California Air Resources Board, OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, (6/13/2003), http://www.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_ act.pdf. Accessed November 2013.

California Emissions Estimator Model (CalEEMod). http://www.caleemod.com.

California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/Chart.aspx. Accessed January 2017.

California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

CARB, Climate Change Scoping Plan, p. 117, December 2008.

CARB, First Update, p. 32, May 2014.

City of Calabasas, 2013 Calabasas Green Building Code, (2013), http://www.cityofcalabasas.com/BuildingSafety/greenbuilding-checklist.pdf

City of Calabasas, Municipal Code Section 17.12.180, (2016).

Protect Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal. App. 4th 1099, 1107 ["'[A] lead agency's use of existing environmental standards in determining the significance of a project's environmental impacts is an effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other environmental program planning and resolution.'"]. Lead agencies can, and often do, use regulatory agencies' performance standards. A project's compliance with these standards usually is presumed to provide an adequate level of protection for environmental resources. See, e.g., *Cadiz Land Co. v. Rail Cycle (2000) 83 Cal.App.4th 74, 99* (upholding use of regulatory agency performance standard).

See generally Section 15130(f); see also Letter from Cynthia Bryant, Director of the Office of Planning and Research to Mike Chrisman, Secretary for Natural Resources, April 13, 2009, https://www.opr.ca.gov/docs/Transmittal_Letter.pdf, accessed January 2017.

South Coast Air Quality Management District, Board Meeting, December 5, 2008, Agenda No. 31, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, Attachment D – GHG Significance Thresholds – Key Issues/Comments. Available: http://www.aqmd.gov/home/governing-board/agendas-minutes. Accessed January 2017.

South Coast Air Quality Management District, Board Meeting, December 5, 2008, Agenda No. 31, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, Attachment E – E. Draft Guidance Document – Interim CEQA Greenhouse (GHG) Significance Threshold Document. Available: http://www.aqmd.gov/home/governing-board/agendas-minutes. Accessed January 2017.

Southern California Association of Governments, 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy, (2012) 39.

Southern California Association of Governments, 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy, (2012) 112.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion

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

Construction of the proposed project would require the use of fuels, oils, and lubricants that can be hazardous to the environment. During construction activities, these hazardous materials could accidentally be spilled or otherwise released into the environment exposing construction workers, the public, and/or the environment to potentially hazardous conditions. Construction crews would be required to implement BMPs as part of Mitigation Measure HAZ-1 for handling hazardous materials during the project, which would minimize hazards to the public. With implementation of Mitigation Measure HAZ-1, impacts associated with handling hazardous materials during construction would result in a less than significant impact. Operation of the proposed project would include the use,

storage, and disposal of a variety of household chemicals and hazardous materials. Commercial and residential uses would use materials common in other commercial and residential settings, including limited quantities of fuels, solvents, kitchen and restroom cleaners, pesticides or herbicides, and other maintenance materials. The types of hazardous materials generally handled in residences and commercial spaces typically constitute small quantities and the health effects associated with them are generally not as serious as industrial uses. In addition, according to the California Fire Code, any businesses that would use and/or store hazardous materials or employ hazardous processes would be required to submit a hazardous materials information form and obtain a hazardous materials permit (California Building Standards Commission 2013). All hazardous materials are required to be stored and handled according to manufacturer's directions and local, state, and federal regulations. Therefore, impacts associated with handling hazardous materials during operation would result in a less than significant impact.

> **HAZ-1:** The construction crew shall be required to implement BMPs for handling hazardous materials during the project. The use of construction BMPs shall minimize negative effects on groundwater and soils, and shall include, without limitation, the following**:**
>
> - Follow manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction;
> - Avoid overtopping construction equipment fuel tanks;
> - Provide secondary containment for designated construction equipment fueling areas;
> - During routine maintenance of construction equipment, properly contain and remove grease and oils; and
> - Properly dispose of discarded containers of fuels and other chemicals.

Less-than-Significant Impact with Mitigation.

b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

The proposed project includes the demolition of two existing two-story commercial buildings, which were built in 1974. Due to the age of the buildings, there is the potential for asbestos-containing material (ACM) and lead-based paint (LBP) to occur at the project site, as ACM and LBP were not fully banned in the United States until 1977 and 1978, respectively. Demolition activities associated with ACM is subject to numerous regulations enforced by agencies such as the California Occupational Safety and Health Administration (Cal-OSHA) and USEPA. Cal-OSHA regulates asbestos at concentrations greater than one tenth of one percent. As such, prior to demolition, if affected, any ACM would be removed and be disposed of by a licensed and qualified asbestos abatement

contractor in accordance with all federal, State and local laws, ordinances and regulations. Compliance with these regulations would ensure that potential impacts associated with ACM would be less than significant.

LBP, which can result in lead poisoning when consumed or inhaled, was widely used in the past to coat and decorate buildings. Like ACM, LBP generally does not pose a health risk to building occupants when left undisturbed; however, demolition can result in hazardous exposure. Demolition activities associated with LBP is subject to numerous regulations enforced by agencies such as Cal-OSHA and the US EPA. Compliance with these regulations would ensure that potential impacts associated with LBP would be less than significant.

As discussed above, construction of the project would require the use of fuels, oils, and lubricants that could be hazardous if accidentally released into the environment. Construction crews would be required to implement BMPs as part of Mitigation Measure HAZ-1 for handling hazardous materials during the project, which would minimize potential for spills that could result the release of hazardous oils or chemicals. With implementation of Mitigation Measure HAZ-1, impacts associated with any foreseeable upset and accident conditions involving the release of hazardous materials during construction would be less than significant.

Operation of the proposed project would include the use, storage, and disposal of a variety of household chemicals and hazardous materials. However, the types of hazardous materials generally handled in residences and commercial spaces typically constitute small quantities and the health effects associated with them are generally not as serious as industrial uses. Therefore, impacts associated with any foreseeable accident conditions during operation would be less than significant.

Less-than-Significant Impact with Mitigation.

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

The nearest school to the project site is the Calabash Charter Academy (formerly Calabash Street Elementary School), located approximately 0.5 mile east of the project site. Therefore, there are no existing schools and no known proposed schools within one-quarter mile of the project site, and no impact would occur.

No Impact.

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

California Government Code Section 65962.5 requires various State agencies to compile lists of hazardous waste disposal facilities, unauthorized releases from underground storage tanks, contaminated drinking water wells, and solid waste facilities from which there is known mitigation of hazardous waste and submit such information to the Secretary for Environmental Protection. According to the Department of Toxic Substances Control (DTSC) EnviroStor database and the State Water Resources Control Board (SWRCB) GeoTracker database, no contaminated soils or oil/gas wells were found within the project footprint and the project site was not included on a hazardous materials list compiled pursuant to Government Code Section 65962.5 (DTSC 2016; SWRCB 2016). A database records search included a compilation of environmental records collected from various local, state, and federal organizations. The proposed project sites are not identified or included on a list of hazardous sizes and are not anticipated to create a significant hazard to the public or the environment. Therefore, impacts regarding hazardous materials sites would be less than significant.

Less-than-Significant Impact.

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

The nearest public use airport is Van Nuys Airport located approximately nine miles northeast of the project site. Because the project would not be located within two miles of an airport, no impacts related to the safety hazard associated with public airports would occur.

No Impact.

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

There are no private airstrips located in proximity to the project site. The nearest private airstrip is the Lost Hills Heliport located approximately four miles to the west. The project is not located within any airport safety zones and the project does not include any features that would affect air traffic. Therefore, no impacts associated with private airstrips would occur.

No Impact.

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

The proposed project would not impair implementation or physically interfere with the City of Calabasas 2012 Emergency Operation Plan, or any other state or federal agency's emergency evacuation plan. Construction and operation of the proposed project would

conform to all Los Angeles County Sheriff's Department's (LASD's) and Los Angeles County Fire Department's (LACFD's) access standards to allow adequate emergency access to the proposed project site and along any roadways impacted during construction. Therefore, impacts to emergency access and plans would be less than significant.

Less-than-Significant Impact.

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

The entire City of Calabasas is designated as a high fire hazard zone (City of Calabasas 2015). However, the project site is located in an urbanized area, and would be served by two LACFD stations: Station No. 68 and Station No. 125. Station No. 68 is located at 24130 Calabasas Road and is approximately 0.8 mile west of the project site. Station No. 125 is located at 5215 North Las Virgenes Road and is approximately 3.3 miles west of the project site. In addition, the proposed project would be required to conform to all LACFD's requirements, the 2013 California Fire Code, and the City of Calabasas Municipal Code standards, including ensuring a sufficient turning radius for the fire department. Compliance with applicable state and local regulations would be required; therefore, impacts would be less than significant regarding wildland fires.

Less-than-Significant Impact.

References

Department of Toxic Substances Control (DTSC). 2016. EnviroStor. Accessed December 2016.

California Building Standards Commission, 2013. *2013 California Fire Code*. Published July 2013.

California Environmental Protection Agency (CalEPA). 2016. Cortese List Data Resources. Available at http://www.calepa.ca.gov/SiteCleanup/CorteseList/. Accessed December 2016.

State Water Resources Control Board (SWRCB). 2015. GeoTracker. Accessed December 2016.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or offsite?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

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

Construction of the proposed project would involve the demolition of two buildings, disturbance of ground material, and would include the presence of various chemicals onsite during construction (equipment fuel, concrete, etc.). If not properly contained, this loose pavement, sediment, and/or chemicals would have the potential to wash into McCoy Canyon Creek or nearby storm drains and pollute surface water. However, prior

to construction activities, the applicant would be required to obtain all appropriate RWQCB permits associated with the discharge of water, including a Statewide Construction General Permit. The Construction General Permit includes the preparation and development of a SWPPP in compliance with the NPDES requirements. The SWPPP identifies applicable construction and post construction BMPs to implement, such as sandbag barriers, detention basins, gravel driveways, post construction site stabilization, employee training, and general good housekeeping practices. Further, the proposed project would be designed in accordance with the City of Calabasas and Los Angeles County Manual for Storm Water Quality Control Measures. In addition, the proposed project would be required to obtain a grading permit from the City's Public Works Department. Operation of the proposed project would include discharges from the project site that would consist of typical urban runoff from residential and light commercial uses. There would be no industrial discharge to any public sewage or storm drainage uses. The proposed project would include landscaping improvements and pervious pavers to reduce runoff. With implementation of the applicable grading and building permit requirements and the application of BMPs specifically designed to minimize water quality impacts, the construction and operation of the proposed project would not violate any water quality standards or waste discharge requirements. Therefore, impacts on water quality would be less than significant.

Less-than-Significant Impact.

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

The project site does not include existing groundwater wells and does not propose to use groundwater during construction or operation. Implementation of the proposed project would include pervious surfaces form landscaping and pervious paving, totaling 60 percent of the project site. These pervious surfaces would include the potential for onsite soil infiltration of rainfall and landscape irrigation. Therefore, development of the proposed project would not interfere with groundwater recharge or deplete groundwater supplies, and impacts would be less than significant.

Less-than-Significant Impact.

c) *Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or offsite?*

The McCoy Canyon Creek flows within the eastern and southern boundaries of the project site. The proposed project would include a retaining wall along McCoy Canyon Creek, located below a walking path, which has the potential to alter the course of the

creek. While construction of the proposed project would result in a net decrease in pervious surfaces compared to existing conditions, 60 percent of the project site would still include permeable surfaces. These permeable surfaces would include the potential for onsite absorption of rainfall and runoff, and a potential decrease in erosion and siltation. In addition, the proposed project would include a stormwater capture and use system, which would further decrease runoff from the project site. The proposed project is subject to the City of Calabasas development review process, which includes review and approval of all grading plans, drainage plans, and design review. Additionally, the proposed project would be require to implement a SWPPP, which requires implementation of construction and post construction BMPs, minimizing the potential for erosion and sedimentation to occur. Therefore, impacts to drainage resulting in substantial erosion or siltation would be less-than-significant.

Less-than-Significant Impact.

d) *Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?*

The eastern and southern portions of the project site are designated as being within a flood hazard area. However, the proposed commercial and residential buildings would be located outside of the flood hazard area. In addition, a retaining wall would be installed along McCoy Canyon Creek to protect the proposed development from potential flooding.

While the proposed project would result in a net decrease in pervious surfaces compared to existing conditions, 60 percent of the project site would still include permeable surfaces. These permeable surfaces would include the potential for onsite absorption of rainfall and runoff, and a potential decrease in erosion and siltation. In addition, the proposed project would include an underground stormwater capture and use system, which would further decrease runoff from the project site. Additionally, the project-specific SWPPP would require construction and post construction BMPs, which would include measures designed to filter (and slow the velocity of) runoff, thereby minimizing the potential for flooding. Therefore, the proposed project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site.

Installation of the proposed retaining wall along McCoy Canyon Creek has the potential to alter the course of McCoy Canyon Creek. However, the proposed project would be required to demonstrate to both the City of Calabasas and to the Federal Emergency Management Agency (FEMA) that the proposed project would not result in offsite flooding. The proposed structure will be built outside of or above the flood hazard areas. The proposed project is subject to the City of Calabasas development review process, which includes review and approval of all grading plans, drainage plans, and design review. Therefore, the proposed project would not substantially increase the rate or

amount of surface runoff in a manner that would result in flooding onsite or offsite impacts to receiving waters. Impacts would be less than significant.

Less-than-Significant Impact.

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

Runoff during construction would drain to the existing stormwater drainage systems. Construction activities would comply with applicable requirements of the Construction General Permit, which include the development of a SWPPP and implementation of its BMPs that control polluted runoff leaving the site and reduce erosion or siltation in runoff that could clog or overwhelm storm drains. After completion of construction, 60 percent of the proposed project would include permeable surfaces, allowing for onsite absorption of rainfall and runoff. In addition, runoff would be routed into an underground stormwater capture and use system, which would decrease runoff from the project site. Therefore, the amount of runoff generated onsite is not expected to differ substantially compared to existing conditions. The impact would be less than significant.

Less-than-Significant Impact.

f) *Otherwise substantially degrade water quality?*

See the discussions under Issues 9(a) through (e). No other substantial water quality degradation is expected to occur as a result of the proposed project. The proposed project would have a less-than-significant impact to water quality on the project site or in the project vicinity.

Less-than-Significant Impact.

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

According to FEMA's National Flood Insurance Program, the proposed project is not located within a 100-year flood zone (FEMA 2008). While not located within a 100-year flood zone, the eastern and southern portions of the project site are designated as being within a flood hazard area. However, the proposed multi-family residential building would be located outside of this flood hazard area. In addition, a retaining wall would be constructed along McCoy Canyon Creek to protect the proposed development. Therefore, the proposed project would not place housing within a 100-year flood hazard area, and impacts would be less than significant.

Less-than-Significant Impact.

h) *Place within a 100-year flood hazard area structures that would impede or redirect flood flows?*

According to FEMA's National Flood Insurance Program, the proposed project is not located within a 100-year flood zone (FEMA 2008). Therefore, the proposed project would not place structures within a 100-year flood zone that would impede or redirect flood flows, and no impacts would occur.

No Impact.

i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

According to the City of Calabasas 2030 General Plan EIR, the city is not within a dam inundation area for any major stream or river in the region (City of Calabasas 2008). Lake Calabasas is not contained by a dam and is located at a lower elevation than the project site. Therefore, the project site is not subject to flooding as a result of dam failure. No impact related to levee or dam failure would occur.

No Impact.

j) *Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?*

Implementation of the proposed project would not increase the risk associated with seiche, tsunami, or mudflow. The nearest large body of water to the project sites is the Pacific Ocean, located approximately eight miles south of the project site. The proposed project would not be located within the range of a seiche hazard zone or tsunami hazard zone. Therefore, no impacts regarding inundation by seiche, tsunami, or mudflow would occur.

No Impact.

References

City of Calabasas. 2008. General Plan 2030 Update EIR. Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

Federal Emergency Management Agency (FEMA). 2008. National Flood Insurance Program Flood Insurance Rate Map. September 26, 2008.

Land Use and Land Use Planning

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
10. LAND USE AND LAND USE PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☒	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a) *Physically divide an established community?*

The project site is currently developed with two existing commercial buildings and a parking lot. Implementation of the proposed project would demolish the existing structures and construct a commercial building, multi-family residential apartments, and associated parking. The proposed project would be consistent with the existing physical arrangement of the project site and surrounding properties. No streets or sidewalks would be permanently closed, and no separation of uses or disruption of access between land use types would occur as a result of the proposed project. Therefore, the proposed project would not disrupt or divide the established community and impacts would be less than significant.

Less-than-Significant Impact.

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

According to the City of Calabasas 2030 General Plan Update, the project site has a land use designation of B-PO and is zoned as CO. A General Plan Amendment and Zone Change would be required for the proposed project to change the existing land use designation to MU 0.95 and zoning to CMU. The land use designation and zoning change would accommodate both the housing and commercial components of the proposed project and ensure consistency with the General Plan.

The MU 0.95 land use designation is intended to promote innovative site design and creation of urban, pedestrian-oriented development by permitting a broad range of office,

retail, and other commercial services and multi-family residential uses within an integrated, mixed-use setting (City of Calabasas 2015). The proposed project includes a mix of commercial and residential uses that are identified within the General Plan for the MU land use designation. The overall floor area ratio (FAR) for the proposed project would be approximately 0.56:1, which is within the range of land use intensity permitted by the MU 0.95 designation. If any additional density is requested under the proposed project, additional CEQA analysis would be required. The types of commercial and residential uses proposed for the project site would be compatible with and promote the objectives of the MU 0.95 land use designation.

A Zone Change from CO to CMU would be required to ensure consistency with the General Plan. According to Chapter 17.14 of the City's Municipal Code, the CMU zone is intended to provide for mixed-use developments with innovative site design and pedestrian orientation. Appropriate land uses for the CMU zone include a broad range of office, retail, commercial services, high intensity residential uses, entertainment, and similar and related compatible uses. The FAR for the proposed project would be approximately 0.56:1, which is within the FAR range permitted by the CMU zone. If any additional density is requested under the proposed project, additional CEQA analysis would be required. Although the maximum permitted height limit in the CMU zone is 35-feet, the proposed project qualifies for state mandated development code concession for providing affordable housing. In addition to the height concession, a Conditional Use Permit would be required to allow a senior residential project on land designated as CMU.

The surrounding area is characterized by mixed use, recreational, and business land use designations; and commercial, residential, and recreational zoning designations. As a result, the proposed zoning and land use designation changes would be compatible with the surrounding land uses.

The proposed project would conform to the 2030 General Plan MU 0.95 land use designation and the CMU zoning designation, through a Conditional Use Permit. The project site is not located within an area regulated by additional ordinances or zoning standards (i.e., hillside area or Scenic Corridor). As the proposed project would not conflict with the City's General Plan or zoning standards, impacts would be less than significant.

Less-than-Significant Impact.

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

The proposed project is not located within a habitat conservation plan or natural community conservation plan, and therefore would not conflict with the provisions within the adopted conservation plan. No impact would occur as a result of the proposed project.

No Impact.

References

City of Calabasas General Plan 2030 Update, 2015, Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

The City of Calabasas contains areas identified as MRZ-3, which are areas that contain mineral deposits for which the significance cannot be evaluated from available data. A small eastern portion of the city has been designated as MRZ-1, indicating that no significant mineral deposits are present (City of Calabasas 2015). It is not clear whether the project site lies within the area qualified as MRZ-3 land or the smaller portion in the MRZ-1 zone. Nevertheless, the project area is a primarily developed community; resource extraction would not be compatible with the existing and planned land uses (City of Calabasas 2008). Additionally, according to the soils report prepared for the project site, most of the site is made up of artificial fill. The proposed project would not result in the loss of availability of a known mineral resource, and no impact would occur.

No Impact.

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

The City of Calabasas contains areas identified as MRZ-3, which are areas that contain mineral deposits for which the significance cannot be evaluated from available data. A small eastern portion of the city has been designated as MRZ-1, indicating that no significant mineral deposits are present (City of Calabasas 2015). It is not clear whether the project site lies within the area qualified as MRZ-3 land or the smaller portion in the MRZ-1 zone. Nevertheless, because the project area is a primarily developed community; resource extraction would not be compatible with the existing and planned land uses (City of Calabasas 2008). Additionally, according to the soils report prepared for the project site, most of the site is made up of artificial fill. The city is not considered to be a potential future source for mineral resources, thus, the proposed project would not result in the loss of availability of a locally important mineral resource, and no impact would occur.

No Impact.

References

City of Calabasas. 2008. General Plan 2030 Update EIR. Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

City of Calabasas. 2015. General Plan 2030 Update. Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

Noise

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
12. NOISE — Would the project:				
a) Result in Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Result in Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) Result in A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) Result in A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a) *Result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Noise is defined as unwanted sound; however, not all unwanted sound rises to the level of a potentially significant noise impact. To differentiate unwanted sound from potentially significant noise impacts, the City has established noise regulations that take into account noise-sensitive land uses. The following analysis evaluates the potential noise impacts at nearby noise-sensitive land uses resulting from construction and operation of the project. As discussed below, implementation of mitigation measures would ensure a less than significant impact with respect to construction noise.

Noise Principles and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted sound (i.e., loud, unexpected, or annoying sound). Acoustics is defined as the physics of sound. In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to

the receiver determines the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses primarily the propagation and control of sound.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale (i.e., not linear) that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. In a non-controlled environment, a change in sound level of 3 dB is considered "just perceptible," a change in sound level of 5 dB is considered "clearly noticeable," and a change in 10 dB is perceived as a doubling of sound volume. Pressure waves traveling through air exert a force registered by the human ear as sound.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 hertz (Hz) and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

An individual's noise exposure is a measure of noise over a period of time, whereas a noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual. These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts.

The time-varying characteristic of environmental noise over specified periods of time is described using statistical noise descriptors in terms of a single numerical value, expressed as dBA. The most frequently used noise descriptors are summarized below:

L_{eq}: The L_{eq}, or equivalent sound level, is used to describe the noise level over a specified period of time, typically 1-hour, i.e., $L_{eq(1)}$, expressed as L_{eq}. The L_{eq} may also be referred to as the "average" sound level.

L_{max}: The maximum, instantaneous noise level.

L_{min}: The minimum, instantaneous noise level.

L_x: The noise level exceeded for specified percentage (x) over a specified time period; i.e., L_{50} and L_{90} represent the noise levels that are exceeded 50, 90 percent of the time specified, respectively.

L_{dn}: The L_{dn} is the average noise level over a 24-hour day, including an addition of 10 dBA to the measured hourly noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity. L_{dn} is also termed the day-night average noise level or DNL,

CNEL: Community Noise Equivalent Level (CNEL), is the average noise level over a 24-hour day that includes an addition of 5 dBA to the measured hourly noise levels between the evening hours of 7:00 p.m. to 10:00 p.m. and an addition of 10 dBA to the measured hourly noise levels between the nighttime hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity during the evening and nighttime hours, respectively.

City of Calabasas Municipal Code

Section 17.20.160(A) of the Calabasas Municipal Code (CMC) provides performance standards for all proposed development, except for the construction of one single-family home on an existing lot, the expansion of existing commercial, office and business park projects, and the addition of housing units to an existing multifamily residential project. The ordinance limits project-related noise to no greater than a 60 dBA CNEL within known wildlife nesting or migration areas, as well as within natural open space areas, as necessary to maintain tranquil open space and viable wildlife habitats and mobility.

Section 17.20.160(B) of the CMC sets standards for acceptable interior and exterior noise levels. The standards are intended to protect from excessive noise levels that have the potential to: (i) interfere with sleep, communication, relaxation, and enjoyment of property; (ii) contribute to hearing impairment; and (iii) adversely affect the value of property. The standards for exterior noise levels are summarized in **Table 3-8**.

The interior noise level standards are an hourly equivalent sound level of 45 dBA during the daytime (7:00 a.m. to 10:00 p.m.) and 40 dBA during the nighttime (10:00 p.m. to 7:00 a.m.). Within an 65 dBA exterior noise environment, interior sound levels would typically be reduced to acceptable levels (to at least 40 dBA or lower) with closed windows through conventional construction. Structures with closed windows can attenuate exterior noise typically by 25 to 35 dBA.

Section 17.20.160(C) of the CMC provides exceptions to the noise standards provided in Table 3-8. The exceptions include noise from any construction or repair work, or any excavating for, any building or structure, between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and construction activities between 8:00 a.m. and 5:00 p.m. on

any Saturday. Construction activities are never acceptable on Sundays or federal holidays.

TABLE 3-8
CITY OF CALABASAS EXTERIOR NOISE LEVEL STANDARDS

Zone	Time Interval	Hourly Equivalent Sound Level (dBA, L_{eq})
Residential Zones	Monday-Friday	
RS, RM, RMH, RR, RC, HM, OS	10:00 p.m. to 7:00 a.m.	50 dBA
RS RM, RMH	7:00 a.m. to 10:00 p.m.	65 dBA
RR, RC, HM, OS	7:00 a.m. to 10:00 p.m.	60 dBA
Residential Zones	Saturday and Sunday	
RS, RM, RMH, RR, RC, HM, OS	10:00 p.m. to 8:00 a.m.	50 dBA
RS, RM, RMH, RR, RC, HM, OS	8:00 a.m. to 10:00 p.m.	60 dBA
Commercial and Special Purpose Zones	All Days of Week	
PD, CL, CR, CO, CMU, CB, CT, PF,REC	10:00 p.m. to 7:00 a.m.	60 dBA
PD, CL, CR, CO, CMU, CB, CT, PF	7:00 a.m. to 10:00 p.m.	65 dBA
REC with active recreation areas	7:00 a.m. to 10:00 p.m.	70 dBA

Source: CMC, Section 17.20.160.

City of Calabasas General Plan Noise Element 2015

In addition to the previously described CMC provisions, the City has also established noise guidelines in the Noise Element of the City's General Plan that are used for planning purposes. These guidelines are based in part on the community noise compatibility guidelines established by the California State Governor's Office of Planning and Research and are intended for use in assessing the compatibility of various land use types with a range of noise levels. **Table 3-9** provides the guidelines of land use compatibility for community noise sources. The CNEL noise levels for specific land uses are classified into four categories: (1) "normally acceptable" (2) "conditionally acceptable" (3) "normally unacceptable" and (4) "clearly unacceptable." A CNEL value of 70 dBA is considered the dividing line between a "conditionally acceptable" and "normally unacceptable" noise environment for noise sensitive land uses, including residences, transient lodgings, schools, and library.

TABLE 3-9
GUIDELINES FOR NOISE COMPATIBLE LAND USE

	Day-Night Average Exterior Sound Level (CNEL, dB)						
Land Use Categories	**50**	**55**	**60**	**65**	**70**	**75**	**80**
Residential Single-Family, Duplex, Mobile Homes	A	A/C	C	C	C/N	C/U	U
Residential Multi- Family	A	A	A/C	C	C/N	C/U	U
Transient Lodging, Hotel, Motel	A	A	A/C	C	C/N	C	C/U
School, Library, Church, Hospital, Nursing Home	A	A	A/C	A/C	C/N	N	N/U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	C/N	N	N
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/N	N	N
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	A/N	A/N	N/U
Office Building, Business, Commercial, Professional	A	A	A	A	A/C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	A/C	C/N

Based on the Governor's Office of Planning and Research, "General Plan Guidelines", 1990. To help guide determination of appropriate land use and mitigation measures vis-a-vis existing or anticipated ambient noise levels.
A = Normally Acceptable: Specified land use is satisfactory, based upon the assumption buildings involved are conventional construction, without any special noise insulation.
C = Conditionally Acceptable: New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will suffice.
N = Normally Unacceptable: New construction or development generally should be discouraged. A detailed analysis of the noise reduction requirements must be made and noise insulation features included in the design of a project.
U = Clearly Unacceptable: New construction or development should generally not be undertaken.

SOURCE: City of Calabasas General Plan Noise Element 2015.

Thresholds of Significance

The City's noise ordinance regulates construction and operational noise. With respect to the community noise assessment, changes in noise levels of less than 3 dBA are generally not discernable to most people, while changes greater than 5 dBA are readily noticeable and would be considered a significant increase. Therefore, the significance threshold for mobile source noise is based on human perceptibility to changes in noise levels (increases) with consideration of existing ambient noise conditions and City's land use noise compatibility guidelines. Therefore, the project would result in a significant noise impact if:

- Project construction activities occur between the hours of 6:00 p.m. and 7:00 a.m. Monday through Friday; 5:00 p.m. and 8:00 a.m. Saturdays; and any time on Sundays or holidays (City observed);
- Project onsite stationary sources (i.e., air conditioning units, pumps) increase existing ambient noise levels at adjacent sensitive receptors the City's exterior

noise standards or by 3 dBA or more if the existing noise levels already exceed the City's exterior noise standards; or

- Project-related offsite traffic increase ambient noise levels by 5 dBA CNEL or more along roadway segments with sensitive receptors, and the resulting noise level occurs on a noise-sensitive land use within an area categorized as "normally acceptable"; or causes ambient noise levels to increase by 3 dBA CNEL or more and the resulting noise occurs on a noise-sensitive land use within an area categorized as "conditionally acceptable," "normally unacceptable," or "clearly unacceptable."

Existing Conditions

The project site is located on Park Sorrento east of the Calabasas Commons shopping center, and is currently zoned as commercial (CO). The following land uses are located in proximity to the project site:

West – Land uses immediately west of the project site consists of noise-sensitive residential condominium units and an in-progress construction site. Further east are non-noise-sensitive commercial areas.

North – Land uses immediately north of the project site consists of noise-sensitive multi-family residential homes and non-noise-sensitive commercial uses. Further northeast of the project site, there are also noise-sensitive multi-family residential homes.

East – Land uses to the east of the project site consists of non-noise-sensitive recreational facilities (i.e., tennis courts). Further east are noise-sensitive single-family residential uses.

South – Land uses to the south of the project site consists of noise-sensitive recreational areas (i.e., landscaped areas and the Calabasas Lake).

To quantify the existing noise environment of the project site, four short-term (15-minute) measurements were conducted during daytime hours on February 1, 2017, at Locations ST-1, ST-2, ST-3, and ST-4. Two long-term (24-hour) measurements were conducted on February 1-2, 2017 at Locations LT-1 and LT-2, as shown on **Figure 3-7**.

SOURCE: ESRI Imagery

Park Sorrento . 140358.45

Figure 3-7

Noise Monitoring and Sensitive Receptors

The ambient noise measurements were conducted in accordance with the City's standards. The ambient noise measurements were conducted using a Larson-Davis Model 820 Precision Integrated Sound Level Meter (SLM). The Larson-Davis 820 SLM is a Type 1 standard instrument, as defined in the American National Standard Institute (ANSI) S1.4. The SLMs were calibrated and operated according to manufacturer specifications. The SLM microphone was placed at a height of 5 feet above the ground level.

These monitoring locations provide a representative characterization of the existing noise conditions within the vicinity of the project site. The results of the ambient noise measurement data are summarized in **Table 3-10**. As shown in Table 3-10, the measured L_{eq} ranged from 43 to 67 dBA.

TABLE 3-10
SUMMARY OF AMBIENT NOISE MEASUREMENTS

Site ID	Monitoring Date(s)	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{10}	L_{50}	L_{90}	CNEL
ST-1	2/1/2017	4:54 p.m.	5:09 p.m.	66	77	46	70	60	50	--
ST-2	2/1/2017	1:57 p.m.	2:12 p.m.	59	81	42	57	49	44	--
ST-3	2/1/2017	4:30 p.m.	4:45 p.m.	61	65	59	62	61	60	--
ST-4	2/1/2017	4:02 p.m.	4:17 p.m.	67	83	47	70	64	53	--
LT-1	2/1/2017 to 2/2/2017	2:00 p.m.	2:00 p.m. (next day)	43-60 (hourly)	81	40	59	52	49	58
LT-2	2/13/2017 to 2/14/2017	9:00 a.m.	9:00 a.m. (next day)	43-66 (hourly)	85	35	61	54	47	60

LT = long-term (24-hour) measurement; ST = short-term (15-minute) measurement.
SOURCE: ESA, 2017.

As shown in Figure 3-7 and in Table 3-10, the project site is characterized by noise levels of 58 to 60 dBA CNEL, which is considered acceptable/conditionally acceptable for multi-family residential uses and acceptable for office uses.

Construction Noise

Construction of the project is anticipated to begin in 2018. The expected duration of construction is approximately 12 months. The project is anticipated to be fully operational in 2019. The analysis includes consideration of construction noise effects on noise sensitive receivers in the vicinity of the project site due to the operation of construction equipment (onsite construction activities) and haul trucks (offsite construction activities).

Onsite Construction Activities

Noise from construction activities would be generated by the operation of vehicles and equipment involved during various stages of construction: demolition, excavation, foundation construction, and building construction. The noise levels generated by construction equipment would vary depending on factors such as the type and number of

equipment, the specific model (horsepower rating), the construction activities being performed, and the maintenance condition of the equipment. Individual pieces of construction equipment anticipated to be used during project construction could produce maximum noise levels of 75 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in **Table 3-11**. These maximum noise levels would occur when equipment is operating under full power conditions. The estimated usage factor for the equipment is also shown in Table 3-11. The usage factors are based on the FHWA Roadway Construction Noise Model User's Guide.

TABLE 3-11
CONSTRUCTION EQUIPMENT AND ESTIMATED NOISE LEVELS

Type of Equipment	Estimated Usage Factor (%)	Reference Noise Level at 50 feet (dBA, L_{max})
Air Compressor	50%	78
Cement and Mortar Mixer	40%	79
Compactor	20%	83
Concrete Saw	20%	90
Crane	40%	81
Crawler Tractor	25%	80
Excavator	40%	81
Forklift	10%	75
Pump	50%	81
Roller	20%	80
Rubber Tired Loader	50%	79
Skid Steer Loader	40%	80
Sweeper/Scrubber	10%	82
Tractor / Loader / Backhoe	25%	80
Trencher	50%	80

SOURCE: FHWA 2006; and ESA 2017.

To more accurately characterize construction-period noise levels, the average (hourly L_{eq}) noise level associated with each construction phase is estimated based on the quantity, type, and usage factors for each type of equipment used during each construction phase and are typically attributable to multiple pieces of equipment operating simultaneously. Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are operated concurrently. The project's estimated construction noise levels were calculated for a scenario in which a reasonable number of construction equipment was assumed to be operating simultaneously, given the physical size of the site and logistical limitations, and with the noisiest equipment located at the construction area nearest to the affected receptors to present a conservative

impact analysis. The estimated noise levels were evaluated for the sensitive receptor locations that are closest, and thus maximally impacted, to the noise generated from construction activity. This is considered a worst-case evaluation because the project would typically use fewer overall equipment simultaneously at any given time, and as such would likely generate lower noise levels than reported herein. **Table 3-12** presents the list of construction equipment including approximate quantities per construction phase with reference noise levels.

TABLE 3-12
CONSTRUCTION EQUIPMENT AND ESTIMATED NOISE LEVELS

Offsite Sensitive Receptor Location [a]	Location	Distance from Closest Edge of Construction Activity to Noise Receptor (feet) [b]	Construction Phase	Estimated Maximum Construction Noise Levels (dBA L_{eq})
R1	Multi-family residential uses adjacent to the west and southeast of the project site	25	Demolition	83
			Site Preparation	83
			Grading/Excavation	84
			Drainage/Utilities/Sub-grade	84
			Building Construction	84
			Architectural Coating	81
			Paving	84
			Final Pickups	71
R2	Multi-family residential uses to the north of the project site across Park Sorrento	75	Demolition	75
			Site Preparation	75
			Grading/Excavation	76
			Drainage/Utilities/Sub-grade	76
			Building Construction	78
			Architectural Coating	71
			Paving	78
			Final Pickups	61

[a] R1 and R2 represent the nearest offsite sensitive noise receptors. Other sensitive receptors in the project vicinity are located substantially farther away from the project site and would be potentially exposed to lower construction noise levels.

[b] The distance represents the nearest construction area on the project site to the property line of the offsite receptor.

SOURCE: ESA 2017.

These estimated noise levels, shown in Table 3-12, assume that the project contractor(s) would equip the construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards. The estimated noise levels represent a conservative worst-case noise scenario where the construction activities are analyzed with several of the equipment simultaneously in use along the perimeter of

the construction area, whereas construction typically would involve equipment in use throughout the project site maintaining safe equipment operating distances, and resulting in most equipment in use further away from noise-sensitive receptors.

As shown in Table 3-12, estimated maximum short-term construction noise level at 25 feet from the project site would range from 78 to 84 dBA. Section 17.20.160(C) of the CMC exempts construction noise from the City noise ordinance between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between 8:00 a.m. and 5:00 p.m. on Saturday. The project would comply with the City's noise ordinance regarding construction noise and would limit construction hours as specified in CMC Section 17.20.160(C). Construction of the project would not generate noise during recognized sleep hours for residences.

While the project would comply with the construction noise restrictions in Section 17.20.160(C) of the CMC, periodic construction noise may be audible at the nearby sensitive receptors during construction-related activities. However, construction noise would not pose a risk to offsite sensitive receptors. The potential for noise induced hearing loss is not typically associated with exposure to construction noise. The Occupational Safety and Health Administration (OSHA) identifies a noise exposure limit of 90 dBA continuously over an 8-hour period to protect from hearing loss (higher limits are allowed for shorter duration exposures). The California Division of Occupational Health and Safety (CalOSHA) provides guidelines to ensure people employed in the State of California are not exposed to occupational noise levels greater than 85 dBA over an 8-hour period. Construction noise levels would be less than the occupational noise exposure levels for an 8-hour period. Furthermore, sensitive receptors located within building interiors would be exposed to attenuated noise levels that would be reduced by 25 dBA to 35 dBA (i.e., buildings with closed windows and conventional construction). Therefore, construction noise would not pose a risk to sensitive receptors. Per OSHA and CalOSHA requirements, onsite construction workers would be protected from noise risks through employer provided training and use of standard noise protection devices.

Due to the proximity of sensitive receptors to the project site, and given that construction noise may be audible at the nearby sensitive receptors during construction-related activities, construction noise impacts are considered potentially significant and mitigation measures consistent with the applicable mitigation measures in CMC Section 17.20.160(A) are required.

> **NOISE-1:** Temporary noise barriers (i.e., wood, sound blanket, or similar noise barrier) shall be used to block the line-of-site between construction equipment and noise-sensitive receptors (residences) during project construction. Noise barriers shall be a minimum of 15-foot tall along the west and north boundaries (except for site access driveways), with direct lines of sight to adjacent and nearby residential uses.

Implementation of Mitigation Measure NOISE-1 would require the implementation of noise attenuation measures during construction at the project site, which would reduce noise levels generated by the construction of the project to the maximum extent that is technically feasible. Mitigation Measure NOISE-1 is also consistent with Section 17.20.160(A) of the CMC, which recommends the use of sound attenuation walls. In addition, construction of the project would comply with Section 17.20.160(C) of the CMC and limit construction activities, including the idling of construction vehicles, to between 7:00 a.m. and 6:00 p.m. Monday through Friday and 8:00 a.m. and 5:00 p.m. on Saturday, and no noise-generating construction activities would take place on Sundays and holidays (observed by the City), per CMC requirements. Therefore, construction noise impacts would be mitigated to less than significant.

Section 17.20.160(A) of the CMC states that project-related noise should be no greater than 60 dBA CNEL within known wildlife nesting areas, as well as within natural open space areas and viable wildlife habitats. The project site contains coastal live oak trees that provide habitat and nesting for three different species (Nutall's woodpecker, oak titmouse, and Cooper's hawk), although, the Cooper's hawk has not nested in the area during the last five years. Projects that involve the expansion of existing commercial properties are exempt. As described within Issues 4(a) and (e) above, implementation of Mitigation Measures BIO-1 and BIO-2 would reduce or eliminate the impacts on nesting birds, and implementation of Mitigation Measures BIO-4 through BIO-8 would reduce and avoid the loss of oak trees. The temporary nature of the construction noise impacts and the implementation of the biological mitigation measures ensure that impacts on wildlife would be less than significant.

Therefore, with respect to a violation of the noise standards and regulations established in the CMC, potentially significant noise impacts during project construction would be reduced to a less than significant level through compliance with applicable regulations and implementation of the prescribed mitigation measures.

Offsite Construction Activities

During the phase of demolition and excavation/grading, there would be approximately 42 haul truck trips per day between 7:00 a.m. and 5:00 p.m. from Monday to Friday. Based on the project traffic report, these trucks would exit the project site on Park Sorrento and head westbound, then northbound on Park Granada, and then northwest bound on Calabasas Road to Parkway Calabasas to access westbound Highway 101. Based on the City of Calabasas' General Plan, the project site and truck routes are located close to Highway 101 and within noise contours from 65 dBA to 75 dBA. The temporary addition of 42 haul truck trips per day during construction activities would not contribute to an audible in noise levels above the existing noise levels. Noise associated with construction truck trips were estimated using the Caltrans TeNS method based on the maximum number of truck trips in a day. The results of the analysis indicate that the proposed project truck trips would generate noise levels of approximately 57 dBA L_{eq}, measured at a distance of 25 feet, which would result in an increase of 1 dBA L_{eq} or less within the 65

dBA to 75 dBA noise contour. Additionally, haul truck trips would be limited to the earlier stages of construction (e.g., demolition and site preparation) which, upon completion, would cease to have any significant lasting noise impact on the surrounding areas. Therefore, offsite construction traffic noise impacts would be less than significant and no mitigation measures would be required.

Operational Noise

The existing noise environment in the project vicinity is dominated by traffic noise from nearby roadways, as well as nearby commercial and residential activities. Long-term operation of the project would have a minimal effect on the noise environment in proximity to the project site. Noise generated by the project would result primarily from the added operation of the building mechanical equipment and the added offsite traffic.

Offsite Traffic Noise

Vehicle trips attributed to operation of the project would increase average daily traffic (ADT) volumes along the major thoroughfares within the project vicinity, which was analyzed to determine if any traffic-related noise impacts would result from project development. The street segments chosen for this analysis have residential land uses which are the most affected by traffic increases generated by the project.

The FHWA TNM Version 2.5, based on the methodology described in the Technical Manual, was used to predict the noise level due to vehicular traffic. The project's TNM model run was validated by comparing the measured ambient noise levels at ST-1, ST-2, ST-3, and ST-4 to the noise levels predicted using TNM, for the same traffic conditions observed during the measurements. **Table 3-13** presents the results of model validation.

TABLE 3-13
TRAFFIC NOISE MODEL VALIDATION RESULTS

Measurement Location	Measured Noise Level (dBA) Leq	Calculated Noise Level (dBA) Leq	Net Difference (dBA) Leq
ST-1	66	68	-2
ST-2	59	56	3
ST-3	61	51	10
ST-4	67	65	2

SOURCE: ESA, 2017.

The Caltrans *Technical Noise Supplement* guidance document states that the model is considered validated when the measured and calculated noise levels are within ±3 dB. As Table 3-13 indicates, the validation for ST-1, ST-2, and ST-4 are within 3 dB and therefore, are considered validated. Please note that ST-3's difference is more than ±3 dB. This can be attributed to the TNM's inability to capture constant background noises that are present during real-time measurements. In this case, ST-3's location had constant noise produced by a ground-level stationary source approximately 50 feet from the

monitoring area and directly adjacent to the sensitive residential use. Therefore, accounting for this site-specific noise source, the model is considered to be validated based on the measurements at ST-1, ST-2, and ST-4.

In order to increase traffic noise levels by 3 dBA, CNEL, the traffic volumes with the project would need to double from the "Existing" to the "Future with project" conditions. **Table 3-14** includes the ADT volumes in the vicinity of the project site for existing and existing plus project conditions, and the associated increase in noise levels. It is assumed that the traffic mix and speed limit would remain similar under existing and existing plus project conditions. The analysis also conservatively assumes that all project-related traffic would travel on Park Sorrento and Park Granada. Based on the comparison of traffic volumes, no roadway segment would experience greater than a 1 dBA increase in traffic noise level. As shown in Table 3-14, the maximum traffic noise increase would be 0.2 dBA on Park Granada between Calabasas Road and Parkway Calabasas. Therefore, the noise level on local roadways due to the project's offsite traffic would not exceed the 3 dBA threshold, which is considered a "just perceptible" change in noise level, and impacts would be less than significant.

TABLE 3-14
TRAFFIC VOLUMES FOR EXISTING AND EXISTING PLUS PROJECT CONDITIONS

Roadway	Roadway Segment	Observed Existing Peak Hour Volumes	Existing Peak Hour Volumes Plus Project	Traffic Noise Level Increase over Existing (dBA)
ST-1 Park Granada	Between Calabasas Rd and Parkway Calabasas	580	606	0.2
ST-2 Park Mirasol	Halfway down street; across from Calabasas Tennis and Swim Center	44	44	--
ST-3 El Canon Ave	Across from Canyon Creek Apartments	40	40	--
ST-4 Park Sorrento	Between Park Granada and Park Mirasol	620	646	0.1

Locations ST-2 and ST-3 are located near offsite sensitive receptors in the project area but are not expected to see an increase in ADT volume from the project. Therefore, no change in traffic noise levels are expected as a result of the project at these measurement locations.
Noise calculations are provided in Appendix G of this IS/MND.

SOURCE: ESA, 2017.

Onsite Operational Noise

The operation of mechanical equipment typical for developments like the project and the adjacent property, such as HVAC equipment, could generate noise levels which may be audible in the immediate vicinity. Project mechanical equipment including air conditioning condensers would be installed on the building rooftop and screened from view in accordance with Section 17.20.170 of the CMC. Therefore, mechanical

equipment would be typically located on rooftops or within buildings, and shielded from nearby land uses to attenuate noise and avoid conflicts with adjacent uses. The project is not expected to exceed exterior noise levels standards at nearby sensitive receptors. Therefore, operation of mechanical equipment would not exceed the City's thresholds of significance and impacts would be less than significant.

Less-than-Significant Impact With Mitigation.

b) *Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?*

The project would be constructed using typical construction techniques. As such, it is anticipated that the equipment to be used during construction would not expose persons to or generate excessive groundborne vibration. Post-construction onsite activities would be limited to residential and commercial uses that would not generate excessive groundborne vibration.

Vibration Principles and Descriptors

Ground-borne vibration from development is primarily generated from the operation of construction equipment and from vehicle traffic. Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. The vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise. Vibration levels for potential structural damage is described in terms of the peak particle velocity (PPV) measured in inches per second (in/sec).

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. If traffic, typically heavy trucks, does induce perceptible building vibration, it is most likely an effect of low-frequency airborne noise or ground characteristics.

Building structural components also can be excited by high levels of low-frequency airborne noise (typically less than 100 Hz). The many structural components of a building, excited by low-frequency noise, can be coupled together to create complex vibrating systems. The low-frequency vibration of the structural components can cause smaller items such as ornaments, pictures, and shelves to rattle, which can cause annoyance to building occupants.

Human sensitivity to vibration varies by frequency and by receiver. Generally people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes. Ground-borne vibration related to human annoyance is generally related to root mean square (rms) velocity levels, and expressed as velocity in decibels (VdB).

Regulatory Framework

The City of Calabasas does not address vibration either in the CMC or in the Noise Element of the General Plan. With respect to ground-borne vibration from construction activities, Caltrans has adopted guidelines/recommendations to limit ground-borne vibration based on the age and/or condition of the structures that are located in close proximity to construction activity. With respect to residential and commercial structures, Caltrans' technical publication, titled Transportation- and Construction-Induced Vibration Guidance Manual,[7] provides a vibration damage potential threshold criteria of 0.5 inches per second PPV for historic and older buildings, 1.0 inch-per-second PPV for newer residential structures, and 2.0 inches per second PPV for modern industrial/commercial buildings. In addition, the guidance also sets 0.035 PPV as the threshold for "distinctly perceptible" human response to steady state vibration

According to the Federal Transit Administration (FTA), ground vibrations from construction activities very rarely reach the level that can damage structures. A possible exception is the case of old, fragile buildings of historical significance where special care must be taken to avoid damage. The construction activities that typically generate the most severe vibrations are blasting and impact pile driving, which would not be utilized for the proposed project. The proposed project would utilize construction equipment such as use of bulldozers and excavators, which would generate ground-borne vibration during excavation and foundation activities. Based on the vibration data by the FTA, typical vibration velocities from the operation of a large bulldozer would be approximately 0.089 inches per second PPV at 25 feet from the source of activity, 0.031 inches per second PPV at 50 feet distance, and 0.011 inches per second PPV at 100 feet distance.

Construction Vibration

The nearest offsite residential building is located to the west and southwest of the project site, which are approximately 25 feet from the project site. The existing building on the project site is located approximately 100 feet away from the nearest offsite residential building. Therefore, conservatively using a distance of 50 feet, bulldozers and loaded trucks would be expected to generate vibration levels of approximately 0.031 inches per second PPV or less and would not generate vibration levels in excess of the 0.5 inches per second PPV structural damage threshold or the 0.035 inches per second PPV

7 Transportation- and Construction-Induced Vibration Guidance Manual, June 2004.

"distinctly perceptible" human response threshold. Therefore, construction vibration impacts would be less than significant and mitigation measures would not be required.

Operation

Once construction activities have been completed, there would be no substantial sources of vibration activities from the project site. The project's operations would include typical commercial-grade stationary mechanical and electrical equipment, such as air handling units, condenser units, and exhaust fans, which would produce limited levels of vibration. In addition, the primary sources of transient vibration would include passenger vehicle circulation within the proposed parking area, which also produce limited levels of vibration. These sources would generate substantially lower levels of vibration identified above for construction. Ground-borne vibration generated by each of the above-mentioned activities would generate approximately up to 0.005 inches per second PPV adjacent to the project site based on FTA data. Therefore, vibration impacts during project operation would be less than significant.

Less-than-Significant Impact.

c) *Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

The existing noise environment in the project area is dominated by traffic noise from nearby roadways, as well as nearby commercial and residential activities. Long-term operation of the project would not have a significant effect on the community noise environment in proximity to the project site. Noise sources that would have potential noise impacts include: offsite vehicle traffic and mechanical (i.e., heating, ventilation, and air-conditioning) equipment. Motor vehicle travel on local roadways attributable to the project, as discussed in Issue 12 (a), would have a less than significant impact on community noise levels. Noise levels associated with onsite operations (e.g., mechanical equipment) are also considered less than significant as discussed in Issue 12 (a). As such, noise impacts would be less than significant.

Less-than-Significant Impact.

d) *Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

The project would result in a temporary increase in ambient noise near the project site during the construction period. Construction noise impacts are discussed in Issue 12 (a). Noise generated by onsite construction activities would have a less than significant impact on surrounding uses with incorporation of the prescribed mitigation measures, and compliance with the applicable CMC noise regulations (i.e., allowable construction hours).

Less-than-Significant Impact With Mitigation.

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

The project site is not located within an airport land use plan area or within two miles of a public airport or public use airport. Therefore, construction or operation of the project would not expose people to excessive airport related noise levels. No impact would occur in this regard.

No Impact.

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

The project site is not located within the vicinity of a private airstrip, or heliport or helistop. Therefore, the project would not expose people residing or working in the project area to excessive noise levels from such uses. No impact would occur in this regard.

No Impact.

References

Bies & Hansen, 1988. Bies, D.A. and C.H. Hansen, Engineering Noise Control, (1988).

Biological Assessment Services, Biological Resources Technical Report, November 2016.

California Code of Regulations, Title 8, Section 5097.

California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013.

City of Calabasas General Plan, Noise Element, October 2015. http://www.cityofcalabasas.com/pdf/documents/gpac/CalabasasFinalGeneralPlan.pdf

City of Calabasas Municipal Code, Section 17.20.160.

City of Calabasas, Zoning Map, (2016).

Federal Highway Administration (FHWA), 2006. Roadway Construction Noise Model – RCNM and User Guide, (2006). Available: https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/. Accessed February 2017.

Federal Highway Administration, Highway Traffic Noise: Analysis and Abatement Guidance, December 2011. Available: https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/revguidance.pdf. Accessed February 2017.

Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment, (2006). Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed February 2017.

Occupational Safety and Health Act of 1970 (29 USC §651 et seq.).

State of California, General Plan Guidelines, Governor's Office of Planning and Research, 2003.

Transportation- and Construction-Induced Vibration Guidance Manual , June 2004.

Population and Housing

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
13. POPULATION AND HOUSING — Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

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

In 2008, the City of Calabasas had an average household size of 2.84 (City of Calabasas 2008). Based on this average household size, the proposed project would generate an estimated 119 residents,[8] which is a conservative estimate considering the proposed project would be for senior living. SCAG forecasts that by the year 2020, the City of Calabasas would have a population of 25,700 persons (an increase of 900 persons from 2015) (City of Calabasas 2008). The residents generated by the proposed project would represent approximately 13 percent of this increase.[9] As such, the proposed project is expected to accommodate existing housing needs in the city rather than promote population growth. Thus, residents generated by the proposed project would be within the population forecasts and impacts would be less than significant.

The proposed commercial component of the proposed project would total approximately 1,620 SF consisting of two commercial retail units. SCAG forecasts that by the year 2020, the City of Calabasas would provide employment for 15,900 persons (an increase of 200 persons from 2015). The employees generated by the proposed project would represent a small percentage of this increase. The employees of the proposed project would likely live in either the City of Calabasas or surrounding cities within Los Angeles County or Ventura County. The employees generated by the proposed project would be within the employment forecasts for the City of Calabasas, and the impact would be less than significant.

8 42 units x 2.84 persons/unit = 119 persons

9 119 / 900 x 100 percent = 13 percent

Less-than-Significant Impact.

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

The proposed project would involve the removal of two existing commercial buildings, which do not contain housing. Therefore, the proposed project would not involve the displacement of existing housing or necessitate the construction of replacement housing. Thus, no impact would occur.

No Impact.

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

The proposed project would involve the removal of two existing commercial buildings, which do not contain housing. Therefore, the proposed project would not involve the displacement of existing housing or necessitate the construction of replacement housing. Thus, no impact would occur.

No Impact.

References

City of Calabasas. 2008. General Plan 2030 Update EIR. Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

Discussion

a.i) *Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives?*

All of Calabasas is designated as a very high fire hazard zone (City of Calabasas 2015). The proposed project would be served by two LACFD stations: Station No. 68 and Station No. 125. Station No. 68 is located at 24130 Calabasas Road and is approximately 0.8 mile west of the project site. Station No. 125 is located at 5215 North Las Virgenes Road and is approximately 3.3 miles west of the project site. The target response time for fire-related emergencies within the City is five minutes (City of Calabasas 2008). According to the LACFD, Station No. 125 has an average response time of 5 minutes, and Station No. 68 has an average response time of 8 minutes (LACFD 2017). According to discussions with the LACFD, Station No. 68 is not reaching the City's target response time because this station has a wider service area to cover. However, the project site is located less than a mile away from this station, and therefore it is reasonable to assume that this station would have a faster response time to the project site compared to their service area average. The proposed project would be required to be built in accordance with all applicable fire code and ordinance requirements for construction, access, water mains, fire hydrants, fire flows, and brush clearance. LACFD would also review the project plans to ensure that adequate access for emergencies would be provided. In addition, the proposed project would be required to pay a developer fee for the provision of fire protection facilities. Based on the adequacy of the fire protection services and the

adequacy of the project site's response distance from the nearest fire station, the proposed project's impacts would be less than significant.

Less-than-Significant Impact.

a.ii) *Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives?*

The proposed project would be served by the LASD from the Malibu/Lost Hills station, located at 27050 Agoura Road. As of 2008, the Malibu/Lost Hills station had 185 deputies with approximately 25 deputies on patrol at any given time (City of Calabasas 2008). Target response times for calls within the city vary according to the urgency of the call. The Malibu/Lost Hills station considers the maximum response time to routine calls 23.6 minutes; priority calls 10.2 minutes; and emergency calls of 4.7 minutes. The project site is located in a developed area that has officers currently patrolling the area and would not require the police department to expand patrol routes. The police department would also review the project plans to ensure that adequate access for emergencies would be provided. Police would be able to access the site through the newly configured driveway along Park Sorrento. In addition, the gated entry to residential parking would increase security and decrease the demand on law enforcement services at the project site. The City of Calabasas has development impact fees to enable the expansion of police protection facilities, the addition of police protection personnel, and enables the city to obtain additional police equipment, as necessary. The proposed project would not result in the need for additional police facilities. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities and impacts related to existing police facilities are less than significant.

Less-than-Significant Impact.

a.iii) *Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?*

The Las Virgenes Unified School District (LVUSD) provides public educational services in the city (City of Calabasas 2008). The project site would be served by the Bay Laurel Elementary School, Alice C. Stelle Middle School, and Calabasas High School. The proposed project would include 42 residential multi-family units, generating approximately 27 students (see **Table 3-15** below). However, this is a conservative estimate, as the proposed residential units would be for senior living, where most residents would not have students living in the household. As shown on **Table 3-16**, the elementary school and high school are over capacity and the middle school is under

capacity. The project applicant would be required to pay a fee for the provision of school services pursuant to AB 2926. Currently, the fee for new development for LVUSD is $3.48 per square foot of residential development, and $0.56 per square foot of commercial development (LVUSD 2017). Classroom overcrowding does not constitute a significant effect on the environment under CEQA. Rather, the threshold for such a finding is whether the proposed project would result in a substantial adverse physical impact associated with the provision of or need for new or physically altered schools in order to maintain acceptable service ratios or other performance objectives. Therefore, the proposed project's impact on elementary and high schools within the LVUSD would be considered less than significant.

TABLE 3-15
GENERATION RATES FOR THE PROPOSED PROJECT

Grade	Generation Rates (per dwelling unit)	Total Students for the Project (42 dwelling units)
Elementary School (K-5)	0.44	18
Middle School (6-8)	0.07	3
High School (9-12)	0.15	6
Total		**27**

SOURCE: City of Calabasas 2008.

TABLE 3-16
EXISTING LVUSD SCHOOLS SERVING THE PROPOSED PROJECT

School	Location	Grade Level	Enrollment	School's Capacity
Bay Laurel Elementary School	24740 Paseo Primario, Calabasas, CA 91302	K through 5	621	612
Alice C. Stelle Middle School	22450 Mullholland Highway, Calabasas, CA 91302	6 through 8	802	945
Calabasas High School	22855 West Mulholland Highway, Calabasas, CA 91302	9 through 12	1,986	1,620

SOURCE: LVUSD 2017.

Less-than-Significant Impact.

a.iv) *Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered parks facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?*

The City of Calabasas has a target of three acres of active parks per 1,000 residents (City of Calabasas 2015). The proposed project would generate approximately 119 residents, generating the need for approximately 0.36 acres of park area.[10] Because of the relatively small size of the proposed project and the availability of nearby recreational facilities, such as the adjacent Calabasas Tennis and Swim Center, it is unlikely the proposed project's new demand for recreational opportunities would result in the City's provision of or need for new or physically altered parks, the construction of which could cause significant environmental impacts. Nevertheless, in accordance with Chapter 17.5 of the City's Municipal Code, the project applicant would be obligated to either dedicate 0.36 acre of parkland or pay an in lieu fee to the City of Calabasas to offset any increased demand on parks and recreational facilities created by the proposed project. While the proposed project would result in a small increase in demand for recreational facilities, payment of the impact fee would offset any effect of increased park use. Therefore, project impacts with respect to park facilities and recreational services would be less than significant.

Less-than-Significant Impact.

a.v) *Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?*

The proposed project would be served by Calabasas Library, located at 200 Civic Center Way. The library was moved to its current location in 2008 (City of Calabasas 2008). As the library is less than ten years old with more than double the building size and collection holdings of its previous location, it is anticipated to be adequate to the City for decades to come. The library holds 90,000 volumes of reading material, a children's reading room, specialty collection areas, a young adult area, technology center, and a reading area for adults (City of Calabasas 2015). In addition, the city is served by the Friends of Calabasas Library, a volunteer group of citizens that provides funds for library programs and events for Calabasas residents. Therefore, the proposed project would have a less than significant impact on library services.

Less-than-Significant Impact.

References

Las Virgenes Unified School District (LVUSD). 2017. Personal Communication with Kelly Beter, assistant to the Assistant Superintendent. March 14, 2017.

Los Angeles County Fire Department (LACFD). 2017. Personal Communication with Inspector Joey Marron. March 3, 2017.

[10] Amount of parkland required, in acres = 0.003 x UP (U is the number of dwellings, and P is the population per dwelling). 42 units x 2.84 persons/unit x 0.003 acres = 0.36 acres.

City of Calabasas. 2015. General Plan 2030 Update. Accessed December 2016, at: http://www.cityofcalabasas.com/general-plan.html.

Recreation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
15. RECREATION — Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion

a) *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?*

The proposed project would increase the population of the City of Calabasas by introducing new residential units into the project area. The addition of 119 residents would increase the use of city parks and recreational space. The City of Calabasas has a target of three acres of active parks per 1,000 residents (City of Calabasas 2015). While the proposed project would result in a small increase in demand for recreational facilities, the proposed project would provide on-site residential amenities for these additional residents, including a recreation room, lounge area, and a walking path adjacent to McCoy Canyon Creek. In addition, there are surrounding recreational facilities located within a half a mile of the project site. The Calabasas Tennis and Swim Center is located adjacent to the project site, and walking paths along Calabasas Lake are located approximately 0.01 mile south of the project site, and Calabasas Creek Park is located approximately 0.1 mile northeast of the project site. Additionally, the City of Calabasas Senior Center is available for senior recreational activities and is located approximately 0.5 miles from the subject site. Although it is expected that the proposed project would result in the use of existing neighborhood parks and recreational facilities, their demand for recreational facilities would be spread throughout the community, and substantial deterioration of these facilities is not expected to occur or be accelerated. Therefore, the proposed project would result in less than significant impacts related to the use of existing parks and recreational facilities.

Less-than-Significant Impact.

b) *Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?*

As described above, the proposed project includes residential recreation amenities that would be constructed and operated as part of the proposed project, including a recreation

room, lounge area, and a walking path adjacent to McCoy Canyon Creek. Impacts occurring from construction or operation of the proposed project, including residential amenities, would be mitigated to the extent feasible by the measures provided in the other sections of this IS/MND. Therefore, the construction of the proposed residential amenities would not result in any additional construction impacts beyond those addressed elsewhere in this IS/MND and would not necessitate construction of additional off-site recreational facilities.

Less-than-Significant Impact.

References

City of Calabasas. 2015. General Plan 2030 Update. Accessed December 2016, at: http://www.cityofcalabasas.com/general-plan.html.

Transportation and Traffic

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
16. TRANSPORTATION/TRAFFIC — Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Background

This section is based on the Updated Traffic, Circulation and Parking Study for the Park Sorrento Mixed-Use Project and the Memo to Update Traffic, Circulation and Parking Study for the Park Sorrento Mixed-Use Project, both prepared by Associated Transportation Engineers (Associated Transportation Engineers, 2016 and Associated Transportation Engineers, 2017), which are included in Appendix D. The traffic, circulation and parking study report addresses the site's traffic generation potential due to the proposed redevelopment of the site, the proposed relocation of the project driveway, and an analysis of parking demand, supply, and Code requirements. Parking is not an environmental impact required for evaluation under CEQA, and therefore is not discussed in the Environmental Evaluation below.

Discussion

a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

The proposed project is located at 23480 Park Sorrento north of Calabasas Lake and south of Highway 101. The project site is developed with a parking lot and two commercial buildings. The site is bordered by Park Sorrento to the north, the Calabasas Tennis and Swim Center to the east and south, and multi-family residential homes to the west. Existing ingress and egress for the project site is provided via one two-way driveway located along Park Sorrento.

Project trip generation for the proposed project were calculated using rates developed by the Institute of Transportation Engineers (ITE) for residential and commercial uses.[11] The rates for Senior Housing and General Office Buildings were applied to the proposed uses. The Traffic Study prepared for the project is located in Appendix D of this IS/MND. Instead of using ITE rates to represent existing trip generation at the project site, traffic counts were conducted at the site to provide a more accurate understanding of the trip generation for the existing offices that would be removed as part of the proposed project. **Table 3-17** depicts the trip generation rates and project peak hour volumes.

TABLE 3-17
PROJECT TRIP GENERATION[1] – WITH PROPOSED USES

		ADT		A.M. Peak Hour		P.M. Peak Hour	
Land Use	**Quantity**	**Rate**	**Trips**	**Rate**	**Trips**	**Rate**	**Trips**
Proposed							
Senior Housing	42 Units	3.44	144	0.20	8	0.25	11
Professional Office	1.62 KSF	11.03	18	1.56	3	1.49	2
Subtotals	-	-	162	-	11	-	14
Existing							
Professional Office[2]	23.4 KSF	11.03	258	1.24	29	1.11	26
Net Trip Generations:							
			-96		**-18**		**-13**

1. The Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012.
2. Peak hour trip generation based on counts taken at the existing site. ADT based on ITE rates. Existing trip generation rates for the office are lower than ITE rates for General Office (ITE A.M. rate = 1.56; P.M. rate 1.49).

SOURCE: Associated Transportation Engineers, 2016.

As shown above in Table 3-17, the proposed uses would result in less traffic being generated at the project site (-96 average daily trips, -18 A.M. peak hour trips, and -13 P.M. peak hour trips) than the trips generated by existing uses. Since the proposed uses

[11] Institute of Transportation Engineers (ITE) *Trip Generation Report*. Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

would result in a reduction in traffic, the project would not generate significant traffic impacts to the surrounding street network.

Bank Alternative

Trip generation estimates were also calculated for the proposed project assuming that the 1,620-square-foot commercial space would be occupied by a bank in order to assess potential traffic impacts with a commercial use that would generate more traffic than the proposed professional office use or general retail uses. A bank use was selected for the analysis as a worst case scenario for potential commercial uses (the parking supply would not support restaurant uses). The ITE and San Diego Association of Governments (SANDAG) rates for Walk-In Banks were applied for this scenario. **Table 3-18** shows the trip generation estimates assuming the bank use in lieu of the proposed professional office use or general retail use (see Appendix D of this IS/MND for detailed calculations).

TABLE 3-18
PROJECT TRIP GENERATION – WITH BANK USE

			ADT		A.M. Peak Hour		P.M. Peak Hour	
Land Use	**Quantity**	**Pass-By Factor**	**Rate**	**Trips**	**Rate**	**Trips**	**Rate**	**Trips**
Proposed								
Senior Housing	42 Units	1.00	3.44	144	0.20	8	0.25	11
Bank[a]	1.62 KSF	0.75	150.00	182	6.00	7	12.13	15
Subtotals	-		-	326	-	15	-	26
Existing								
Professional Office[b]	23.4 KSF	1.00	11.03	258	1.24	29	1.11	26
Net Trip Generations:								
				68		**-14**		**0**

a. SANDAG rate for ADT and A.M. peak hour since no ITE rates for these time periods. ITE rate for P.M. peak hour.
b. Trip generation based on counts taken at the existing site.

SOURCE: Associated Transportation Engineers, 2016.

As shown above in Table 3-18, the proposed project with a bank use would result in a net increase of 68 daily trips, a net decrease of 14 A.M. peak hour trips and no change in P.M. peak hour trips as compared to existing uses at the project site. Since this scenario would result in a reduction or no change in traffic during the peak hour periods, the project would not generate significant traffic impacts to the surrounding street network assuming the bank use.

Less-than-Significant Impact.

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

Congestion management programs (and level of service [LOS] standards established by congestion management agencies) are intended to monitor and address long-term traffic conditions related to future development that generate permanent (on-going) traffic increases, and do not apply to temporary impacts associated with construction projects. Nearby CMP facilities serving the project area include Highway 101, State Route 27, and State Route 23. Little to no long-term increase in traffic generation would occur as a result of the proposed project (see discussion under Issue 16 (a) above). The proposed project would not include construction along any public roadway right-of-ways, and would not interfere with local traffic. The operational traffic and the short-term intermittent construction traffic resulting from the proposed project would not adversely affect level of service standards and travel demand measures for CMP-designated roads or highways. The impacts would be less than significant.

Less-than-Significant Impact.

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

The proposed project is not located in the immediate vicinity of an airport or private airstrip. The nearest public use airport is Van Nuys Airport located at 16461 Sherman Way in Van Nuys, approximately nine miles northeast of the project site. The nearest private airstrip is the Lost Hills Sheriff's Station Heliport located approximately five miles west of the project site at 27050 Agoura Road, Calabasas. Project activities would not alter the existing air traffic patterns, levels, or locations and would thus not result in safety risks. No impact would occur.

No Impact.

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

The project would relocate the existing site access driveway on Park Sorrento to the east by about 70 feet. The new driveway location would improve the existing condition by providing better alignment with the driveway that serves the property located across the street. The driveway relocation would also provide increased sight distance looking to the west when compared to the existing driveway location. The sight distance looking to the east from the proposed driveway location was measured at about 410 feet, which exceeds the 250-foot stopping sight distance and the 385-foot corner sight distance criteria. The sight distance looking to the west from the proposed driveway location was measured at about 320 feet, which meets the 250-foot stopping sight distance but is short of the 385-foot corner sight distance criteria. The sight distance looking to the west is limited by a

horizontal curve and therefore cannot be extended without realigning Park Sorrento Road. The sight distance is, however, sufficient for the private driveway connection since the Caltrans Highway Design Manual states that the minimum corner sight distance shall be equal to the stopping sight distance for private road intersections. The 320-foot sight distance would provide sufficient time for drivers traveling eastbound along Park Sorrento to see a vehicle exiting the driveway and stop before colliding with that vehicle. Impacts related to hazardous design features would be less than significant.

Less-than-Significant Impact.

e) *Result in inadequate emergency access?*

The proposed project would not impair implementation or physically interfere with the City of Calabasas 2012 Emergency Operation Plan, or any other state or federal agency's emergency evacuation plan. Construction and operation of the proposed project would conform to all LASD's and LACFD's access standards to allow adequate emergency access to the proposed project site and along any roadways impacted during construction. Therefore, impacts to emergency access and plans would be less than significant.

Less-than-Significant Impact.

f) *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

The City of Calabasas Line 1 shuttle runs on Park Sorrento, with a Bus Stop 34 at Park Sorrento at Park Mirasol just east of the project site. This free shuttle operates Monday through Friday from 6:30a.m. to 6:00p.m. and connects all the City's major neighborhoods in a single route. Driveway relocation construction at the project site would not require temporary relocation of this bus stop. However, in the unlikely event the bus stop would require temporary closure, there are nearby options that could accommodate public transit users of the shuttle at Stop 46 – Park Sorrento at Park Granada. Currently, there are no bicycle routes along Park Sorrento.

Once implemented, the proposed project would neither directly nor indirectly eliminate alternative transportation corridors or facilities (e.g., bicycle lanes, bus routes/stops, etc.). In addition, the project would not include change in policies or programs that support modes of alternative transportation. The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. The project's operations impact would be less than significant.

Less-than-Significant Impact.

References

Associated Transportation Engineers, Traffic, Circulation and Parking Study for the Park Sorrento Mixed-Use Project, City of Calabasas, July 21, 2016

City of Calabasas, Calabasas Public Transportation Shuttle Service, Calabasas Line 1 Shuttle Map, http://www.cityofcalabasas.com/line1.html site access March 2017.

Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. Tribal Cultural Resources — Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(l)?	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe	☐	☐	☐	☒

Discussion

a) *Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(l)?*

As discussed in Issue 5, Cultural Resources, the SLF search prepared by the NAHC indicated that Native American cultural resources are not known to be located within the project area. No California Native American tribes have requested to be notified of projects within the City's jurisdiction requiring government-to-government consultation pursuant to Public Resources Code Section 21080.3.1 (Assembly Bill 52). As such, no tribal cultural resources were identified within the project area under AB 52 consultation. However, the City consulted with the Gabrieleno Band of Mission Indians – Kizh Nation pursuant to Senate Bill 18. The Tribe did not identify known tribal cultural resources; however, the Tribe identified the project area as sensitive for archaeological and tribal cultural resources. Although no tribal cultural resources have been identified within the proposed project site there is a potential for buried unknown archaeological resources that may be eligible for the California Register of Historical Resources or a local register of

historical resources and could meet the definition of historical resource, unique archaeological resource, and/or tribal cultural resources. Implementation of Mitigation Measures CUL-1, CUL-2, and CUL-5 as provided by the Gabrieleno Band of Mission Indians – Kizh Nation during consultation and outlined in Section 5, would reduce impacts to archaeological resources that also qualify as tribal cultural resources to less than significant.

Less-than-Significant Impact with Mitigation.

b) *Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe?*

As indicated above no known tribal cultural resources have been identified within the proposed project site, but there is a potential to impact buried archaeological resources that may also be considered tribal cultural resources. Implementation of Mitigation Measures CUL-1, CUL-2, and CUL-5 as provided by the Gabrieleno Band of Mission Indians – Kizh Nation during consultation and outlined in Section 5, would reduce impacts to archaeological resources that also qualify as tribal cultural resources to less than significant.

Less-than-Significant Impact with Mitigation.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

a) *Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

The proposed project would increase densities and intensities of land uses within the project site for residential and commercial use, which would result in increases in the levels of wastewater compared to existing conditions. Wastewater generated by the proposed project would be treated at the Tapia Water Reclamation Facility (TWRF). The TWRF includes an onsite state-certified water quality laboratory that conducts testing to assure that all potable and recycled water served by TWRF meets stringent state and federal health standards, including those of the RWQCB (LVMWD 2013). The residential and commercial land uses proposed by the project would generally not discharge wastewater that contains harmful levels of toxins that are regulated by the RWQCB (such as large quantities of pesticides, herbicides, oil, grease, and other chemicals that are more typical in agricultural, commercial, and industrial uses) and all effluent would comply with the wastewater treatment standards of the RWQCB. Therefore, project wastewater is not expected to exceed established wastewater treatment requirements of the RWQCB, and impacts related to wastewater treatment requirements would be less than significant.

Less-than-Significant Impact.

b) *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Similar to existing conditions, wastewater generated by the proposed project would be treated at the TWRF. The proposed project would include 42 residential units, and 1,620 SF of commercial uses. With a wastewater generation rate of 160 gallons per day (gpd) per unit for residential senior multi-family uses and 80 gpd per 1,000 SF for non-residential uses, the proposed project is anticipated to generate an estimated wastewater flow of 6,850 gpd (City of Calabasas 2008). Using this same generation rate, the existing commercial uses (approximately 26,360 SF) generates approximately 2,109 gpd of wastewater generation. Therefore, the proposed project would increase wastewater generation at the project site by approximately 4,741 gpd, or 0.004 million gallons per day (mgp). The TWRF has a capacity to process up to 16 mgd, but currently averages approximately 9.5 mgd (LVMWD 2013), resulting in an excess treatment capacity of approximately 6.5 mgd. Therefore, TWRF would have sufficient capacity to process the additional wastewater flow associated with implementation of the proposed project. No construction of new wastewater treatment facilities or expansion of existing facilities would occur as a result of the proposed project, and impacts would be less than significant.

Similar to existing conditions, the proposed project would be served by the Las Virgenes Municipal Water District (LVMWD). With a water generation rate of 500 gpd per unit for residential senior multi-family uses and 2,000 gpd per acre for non-residential uses, the proposed project would require approximately 21,074 gpd of water (City of Calabasas 2008). Using these same generation rates, the existing site (which consists of approximately 26,360 SF of commercial space) requires approximately 1,210 gpd of water. Therefore, the proposed project would increase water demand by approximately 19,864 gpd, or 0.02 mgd. The LVMWD's projected water supply in 2030 would be approximately 39,340 acre feet per year (AFY), or 12,819 mgd (City of Calabasas 2008). The reliability of the LVMWD's water supply is dependent on the reliability of its imported water supplies, which are managed and delivered by the Metropolitan Water District of Southern California (MWD). According to the City's General Plan EIR, MWD has consistently found that its existing water supplies are and would be reliable for at least a 20-year planning period. The increased water demand at the project site would not cause LVMWD to significantly increase water entitlements or result in the need to construct new water treatment facilities or expand existing treatment facilities. The proposed project would fall within the water supply and demand parameters of LVMWD. In addition, LVMWD provided a Conditional Statement of Water Service letter (located within Appendix H), assuring that the proposed project would be connected to the LVMWD water system when the proponent satisfies all requirements set forth in the district's code (LVMWD 2017). Therefore, no construction of new water treatment

facilities or expansion of existing facilities would occur as a result of the proposed project, and impacts would be less than significant.

Less-than-Significant Impact.

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

Construction of the proposed project would include drainage improvements to ensure that stormwater is effectively detained and conveyed offsite. Drainage improvements would include a stormwater capture and use system in the southwest portion of the project site, filtered catch basins within the surface parking lots and within the parking garage, pervious paving stones, walls drains, and concrete gutters. In addition the proposed project would include landscape features that would allow runoff and stormwater to permeate into the soil. Construction of these storm water drainage features are part of the proposed project, and their environmental impact is analyzed throughout this document. In addition, the proposed project would be require to prepare and implement a site-specific SWPPP, which would include construction and post construction BMPs, which would filter out sediment and pollutants from entering surrounding drainage facilities. Further, the proposed project is subject to the City of Calabasas development review process, which includes review and approval of all grading plans, drainage plans, and design review. Therefore, impacts associated with new storm water drainage facilities would be less than significant.

Less-than-Significant Impact.

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

As discussed under Issue 17 (b) above, the proposed project would increase water demand on the project site by approximately 19,864 gpd, or 0.02 mgd of water. The LVMWD's projected water supply in 2030 would be approximately 39,340 acre feet per year (AFY), or 12,819 mgd (City of Calabasas 2008). According to the City's General Plan EIR, MWD has consistently found that its existing water supplies are and would be reliable for at least a 20-year planning period. The increased water demand at the project site would not cause LVMWD to significantly increase water entitlements. The proposed project would fall within the water supply and demand parameters of LVMWD. As such, no new or expanded water entitlements would be required as a result of the proposed project, and impacts would be less than significant.

Less-than-Significant Impact.

e) *Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

As discussed under Issue 17 (b) above, the proposed project would increase wastewater generation at the project site by approximately 4,741 gpd, or 0.004 mgp. Wastewater generated at the project site would be treated at the TWRF, which has a capacity to process up to 16 mgd, but currently averages approximately 9.5 mgd (LVMWD 2013), resulting in an excess treatment capacity of approximately 6.5 mgd. Therefore, the TWRF would have sufficient capacity to process the additional wastewater flow associated with implementation of the proposed project, and impacts would be less than significant.

Less-than-Significant Impact.

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

Construction of the proposed project would result in demolition of the existing two commercial building, totaling 26,360 SF. Using a non-residential demolition generation rate of 158 pounds of waste per square feet, the demolition of the existing structures would result in approximately 4,164,880 pounds of solid waste, or 2,082 tons (USEPA 2003). Construction of the proposed project would include 42 residential units (totaling 43,000 SF), and 1,620 SF of commercial uses. Using a residential construction generation rate of 4.39 pounds of waste per square feet, and a non-residential construction generation rate of 4.34 pounds of waste per square foot, construction of the proposed project would generate approximately 195,800 pounds of solid waste, or 98 tons (USEPA 2003). Solid waste during demolition and construction of the proposed project would total approximately 2,180 tons.

Operation of the proposed project would include waste generated by the 42 residential units and the 1,620 SF commercial space. Using an operational residential generation rate of 7.7 pounds per unit per day, and an operational commercial generation rate of 0.006 pounds per square foot per day, operation of the proposed project would generate approximately 333 pounds per day, or 0.17 tons per day (62 tons per year) (City of Calabasas 2008).

Solid waste generated in the City of Calabasas is disposed of at the Calabasas Sanitary Landfill, located at 5300 Lost Hills Road. As of 2008, the landfill has a remaining capacity of 8.1 million tons, and is projected to close in 2024 (City of Calabasas 2008). Construction of the proposed project is expected to occur over a 12 month period, beginning by the first quarter of 2018. Demolition and construction waste, totaling approximately 2,180 tons of solid waste, would represent approximately 0.02 percent of the remaining capacity (in tons). Considering the small portion of remaining capacity that construction solid waste would represent, the fact that waste would be generated and

disposed of over a period of 12 months, and the landfill has enough capacity to remain open until 2024, the existing landfill would have adequate capacity to accept all project construction waste. As for operational waste, the City is required to maintain a 50 percent diversion rate required by the State for all solid waste and solid waste generated by the project. The solid waste generated by the project would place a minimal burden on the City of the required diversion rate. The increase would not require additional landfill capacity. In addition, the proposed project would be required to comply with debris removal and recycling requirements. The proposed project would contract with the City's waste hauler for all bins and their removal in accordance with the City Ordinance. Therefore, since the landfill would have sufficient permitted capacity (through 2024), and the proposed project would comply with federal, state, and local statues and regulations related to solid waste, the proposed project would not cause a substantial adverse impact to the landfill disposal system, and impacts would be less than significant.

Less-than-Significant Impact.

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

The proposed project would generate solid waste during construction and operational activities. Assembly Bill 939, also known as the 1989 Integrated waste Management Act requires Los Angeles County to attain specific waste diversion goals. Construction materials would be recycled to the maximum extent practicable. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the proposed project design. The proposed project would include storage areas for recycling bins, as necessary, and would comply with federal, state, and local statutes and regulations related to solid waste. Therefore, impacts related to compliance with applicable regulations would be less than significant.

Less-than-Significant Impact.

References

Las Virgenes Municipal Water District (LVMWD). 2013. Tapia Water Reclamation Facility. Accessed March 14, 2017. Available at http://www.lvmwd.com/your-water/wastewater-services/tapia-water-reclamation-facility.

LVMWD. 2017. Conditional Statement of Water Service. February 15, 2017.

City of Calabasas. 2008. General Plan 2030 Update EIR. Accessed December 2016 at: http://www.cityofcalabasas.com/general-plan.html.

United States Environmental Protection Agency (USEPA). 2003. Building-Related Construction and Demolition Materials Amounts.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) *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?*

As described above under Issue 4 (a), no federal or state-listed threatened or endangered species are known or expected to occur onsite. There is no federally designated critical habitat for listed wildlife species mapped within the property. The proposed project would require various forms of vegetation removal, potentially extending into the existing coast live oak riparian forest along the southern and eastern portions of the site. Vegetation removal and disturbance could have potential adverse effects on native plant and wildlife communities including some special status species. Additionally, direct impacts could occur to birds nesting onsite if the removal of any vegetation occurs during nesting/breeding season (February 1 to August 31). Indirect impacts to birds could also occur through construction noise, dust, and other human disturbances. These disturbances may deter breeding/nesting behaviors if construction occurs during the breeding/nesting season. The potential impacts to native plant communities, wildlife communities, special status species, and native birds, protected under state and federal laws, would be reduced to a less-than-significant level with implementation of Mitigation Measures BIO-1 and BIO-2. The proposed project would result in impacts, through removal and

encroachment, to protected oak trees located onsite. This impact is reduced to a less-than-significant level through incorporation of Mitigation Measures BIO-4 through BIO-8.

As described under Issues 5 (a) and (b) above, there was no surface evidence of archaeological resources. There is a possibility that subsurface archaeological resources could be encountered as a result of project-related ground disturbance activities and impacts to these resources could constitute a substantial adverse change in the significance of a historical resource. With the incorporation of Mitigation Measure CUL-1, potential impacts to archaeological resources that qualify as historical resources would be reduced to less than significant.

The project site is located within an area that may contain paleontological resources. The depth of the sensitive alluvial sediments has not been determined in the project area. As a result of the existing site geology, ground disturbing activities over five feet in depth could potentially intrude upon sensitive rock units and could cause impacts to unique paleontological resources. Implementation of Mitigation Measures CUL-2 through CUL-4 would reduce potential impacts to paleontological resources to less than significant.

Less-than-Significant Impact with Mitigation.

b) *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)?*

A cumulative impact could occur if the project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present and reasonably foreseeable future projects for each resource area.

The proposed project does not include any agricultural, mineral resources, or tribal resources that could be impacted. In addition, the proposed project would have less than significant impacts on geology and soils, hydrology and water quality, land use and planning, population and housing, public services, recreation, and utilities and service systems. As a result, the proposed project would not be cumulatively considerable in regards to these resource areas.

Impacts related to aesthetics and hazards and hazardous materials are localized and would not have additive impacts. Impacts related to biological resources and cultural resources would be less than cumulatively considerable with implementation of the applicable mitigation measures. Below includes a discussion of cumulative impacts related to air quality, noise, and transportation.

Air Quality

There are cumulative projects in the project area that have not yet been built or are currently under construction. Since the Applicant has no control over the timing or

sequencing of the cumulative projects, any quantitative analysis to ascertain daily construction emissions that assumes multiple and concurrent construction projects would be speculative. For this reason, the SCAQMD's recommended methodology to assess a project's cumulative impact differs from the cumulative impacts methodology employed for other environmental issue areas. SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality; and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

The project would result in the emission of criteria pollutants for which the region is in non-attainment during both construction and operation. Based on the project-specific level of emissions, the project's cumulative impacts would be less than significant because its construction and operational emissions would be less than significant, as shown in Table 3-1 and Table 3-2. The significance thresholds adopted by the SCAQMD are designed to assist the region in attaining the applicable state and national ambient air quality standards. These standards apply to both primary (criteria and precursor) and secondary pollutants (ozone). Although the project site is located in a region that is in non-attainment for ozone, PM10, and PM2.5 under federal and/or state standards, the emissions associated with the project would not be cumulatively considerable as the emissions would fall below SCAQMD daily significance thresholds.

Alternatively, the SCAQMD recommended assessing project's cumulative impacts based on whether it is consistent with the AQMP. The project has incorporated strategies, as applicable, consistent with the AQMP. Construction of the project would comply with SCAQMD Rule 403 requirements and the CARB regulations to limit heavy duty diesel motor vehicle idling to no more than five minutes at any given location. In addition, the project would utilize a construction contractor(s) that complies with required and applicable BACT and the In-Use Off-Road Diesel Vehicle Regulation. Per SCAQMD rules and mandates, these same requirements (i.e., Rule 403 compliance and compliance with adopted AQMP emissions control measures), as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, would also be imposed on other construction projects in the Air Basin as required, which would include each of the cumulative projects in the project area. As such, the project's cumulative construction impacts to air quality would be less than significant.

The project's location, design, and land uses also render it consistent with the AQMP. As discussed above and in Issue 13, Population and Housing, Calabasas had an average household size of 2.84 in 2008. Based on this average, the proposed project would generate an estimated 119 residents,[12] which is within the SCAG population forecasts for the region and thus consistent with the AQMP growth projections. As such, the project's cumulative operational impacts to air quality would be less than significant.

[12] 42 units x 2.84 persons/unit = 119 persons

Noise

The geographic context for the analysis of cumulative noise impacts depends on the impact being analyzed. Noise is by definition a localized phenomenon, and sound reduces significantly in magnitude as the distance from the source increases. As such, only projects expected to occur in the immediate project area likely would contribute to cumulative noise impacts.

Construction Noise

Noise from construction of the project and related projects would be localized, thereby potentially affecting areas immediately within 500 feet from either/both construction sites. There is a construction project adjacent to the project site; however, construction of this related project is expected to be completed by Spring 2018. Therefore, construction activities at the adjacent site are not expected to coincide with the project's construction schedule and would not contribute to cumulative noise in the area.

Just as the project would be required to implement mitigation measures to reduce significant noise impacts, related projects would also be required to comply with City noise standards and implement mitigation measures for identified significant impacts, as required under CEQA. Therefore, the proposed project's contribution to cumulative construction noise impacts would not be expected to be cumulatively considerable. As such, cumulative impacts associated with construction noise would be less than significant with.

Operational Noise

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the project and other projects in the project vicinity. Cumulative traffic volumes would have to increase by double over the existing traffic volumes in order to result in an increase in noise levels of 3 dBA CNEL. As discussed previously, the project would generate a minimal net increase in traffic over existing conditions and result in a maximum noise level increase of 0.2 dBA CNEL, which would not exceed the 3 dBA significance threshold. It is unlikely that cumulative traffic volumes would increase by double over the existing traffic volumes. Therefore, with respect to roadway noise, the project's contribution to cumulative impacts would not be cumulatively considerable, and cumulative impacts would be less than significant.

The project's fixed mechanical equipment would be screened from adjacent uses and/or located within the interior of the building such that noise levels would be less than significant at the property line. Noise levels for similar equipment and facilities for each related project would be subject to City noise ordinance and screening requirements. For this reason, onsite noise produced by any related project would not result in a substantial or noticeable additive increase to project-related noise levels. As the project's composite stationary-source and operational impacts would be less than significant, composite stationary-source and operational noise impacts attributable to cumulative development would also be less than significant.

Vibration

Due to the rapid attenuation characteristics of ground-borne vibration and distance of the related projects to the project site, the project's contribution to cumulative impacts would not be cumulatively considerable and cumulative impacts would be less than significant.

Transportation

Cumulative transportation impacts were considered for the proposed project in relation to the following two components of the Village at Calabasas Mixed-Use Project, which was either completed after the traffic analysis for the proposed project was conducted (Soul Cycle) or is still under construction (Avanti):

- Soul Cycle: 2,636 square-foot health/fitness club with an additional 745 square feet of restaurant (outdoor seating); and
- Avanti: 72 residential units.

The Village at Calabasas Mixed-Use Project is located at 23500 Park Sorrento, adjacent to the project site to the west. According to the *Village at Calabasas Mixed-Use Project Updated Traffic, Circulation, and Parking Study*, prepared in June 2013 by Associated Transportation Engineers, approximately 107 A.M. peak hour and 111 P.M. peak hour trips will be generated by that project at full build-out. The addition of these trips to the nearby roadway network would not result in a significant impact to traffic operations based on the applicable City and County thresholds.

Two notable changes to the assumed land uses have occurred since this trip generation analysis was completed: 1) the number of residential units was reduced from 80 to 72; and 2) a portion of the commercial space assumed to be occupied by a restaurant is now being occupied by a health/fitness club. Based on the ITE trip generation rates for these uses, these two changes will result in fewer peak hour trips being generated by the full-build out of the Village at Calabasas Mixed-Use Project.

As described in Issue 16, Transportation and Traffic, of this IS/MND, the proposed project with the would result in a net decrease of 14 A.M. peak hour trips and no change in P.M. peak hour trips as compared to existing uses at the project site. This assumes that the commercial space would be occupied by a bank, which is the worst-case scenario in terms of trip generation. If the commercial space were occupied instead by professional offices, the net decrease in the proposed project's trip generation would be even higher. Since the proposed project would result in a reduction or no change in traffic during the peak hour periods, the project's contribution to cumulative traffic impacts would not be cumulatively considerable and cumulative traffic impacts would be less than significant.

Less-than-Significant Impact.

c) *Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?*

Based on the analysis above, the proposed project would have potentially significant environmental effects on aesthetics, air quality, biological resources, cultural resources, hazards and hazardous materials, noise, transportation and traffic that could cause substantial adverse effects on human beings, either directly or indirectly. However, implementation of mitigation measures, as provided within each of these resource topic sections of this environmental checklist, would reduce project-related potentially significant impacts to a less-than-significant level. Therefore, after implementation of mitigation measures, the proposed project would result in a less-than-significant environmental impact to human beings.

Less-than-Significant Impact with Mitigation.

APPENDIX A

CalEEMod Outputs

Raznick Mixed Use
IS/MND
Appendix A, CalEEMod Outputs/AQ Worksheets

A.1 Construction Emissions

- Construction Emissions Model Inputs
- Construction: CalEEMod Output (Summer)
- Construction: CalEEMod Output (Winter)

A.2 Operational Emissions

- Operations : CalEEMod Output (Summer) - Existing
- Operations : CalEEMod Output (Winter) - Existing
- Operations : CalEEMod Output (Summer) - Project
- Operations : CalEEMod Output (Winter) - Project

A.3 Title 24 Energy Savings

A.4 South Coast Air Quality Management District Rule 403

Appendix A.1
Construction Emissions

- Construction Emissions Model Inputs
- Construction: CalEEMod Output (Summer)
- Construction: CalEEMod Output (Winter)

23480 Park Sorrento last update: 2/2/2017
Air Quality and Greenhouse Gas Assessment

CalEEMod Land Use Inputs

Land Use	CalEEMod Land Use Type	Units [a]			Res. Pop.
Existing Uses					
Commercial Building	General Office		13,180	sf	
Commercial Building	General Office		13,180	sf	
Parking lot	Parking Lot		17,000	sf	
Project					
Senior Apartment Living	**Mid-rise Apartment**	**42 DU**	**43,000**	**sf**	119
Lobby 1					
Lobby 2					
Mail Room					
Office					
Recreation Room					
Plan A		*6 DU*			
Plan B		*6 DU*			
Plan C		*6 DU*			
Plan C - Alt		*3 DU*			
Plan D		*3 DU*			
Plan E		*3 DU*			
Plan F		*3 DU*			
Plan G		*3 DU*			
Plan H		*9 DU*			
Commercial Building/Bank			1,620	sf	
Ground floor parking garage	Unenclosed Parking with Elevator	38 spaces	15,200	sf	
Outdoor Parking	Parking lot	32 spaces	12,800	sf	
Lot Area		2.00 acres	-	sf	

Notes:

a. Square footage values may be rounded up to provide a conservative analysis.

Sources: Atlas Capital Group, Johnson Fain, May 2016; ESA PCR, 2016

1680

Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

CalEEMod Construction Phase	Start Date	End Date	No. Work Days	Site Prep/ Demo (CY)	Truck Capacity (CY)	Truck Total One-Way Trips	Truck Daily One-Way Trips	Soil Export [a] (CY)	Soil Import (CY)	Soil Haul Truck Capacity (CY)	Soil Haul Truck Total One-Way Trips	Soil Haul Truck Daily One-Way Trips	Concrete Mat Volume [a] (CY)	Concrete Truck Capacity (CY)	Concrete Truck Total One-Way Trips	Concrete Truck Daily One-Way Trips	Vendor One-Way Trips/Max Day [b]	Worker One-Way Trips/Max Day [c]
Project																		
Demolition	3/1/2018	3/9/2018	7	1,200	20	120	5										10	90
Site Preparation	3/12/2018	3/14/2018	3															100
Grading/Excavation	3/15/2018	3/23/2018	7					1,775	-	10	355	51					10	60
Drainage/Utilities/Sub-grade	3/26/2018	3/30/2018	5															150
Building Construction	4/2/2018	1/4/2019	200										13,600	9	3,023	15		
Architectural Coating	1/7/2019	2/1/2019	20															800
Paving	2/4/2019	2/22/2019	15															90
Other: Final Pickups	2/25/2019	3/8/2019	10															400

Notes:

a. Soil export quantities and foundation concrete quantities provided by Atlas Capital Group, Johnson Fain, May 2016.

b. Vendor trips associated with Site Preparation/Demo, Mass Grading, and Drainage/Utilities/Trenchin represent water trucks. Vendor trips associated with the Building Construction phase and are based on CalEEMod assumptions.

c. Worker trips are provided by Atlas Capital Group, Johnson Fain, May 2016.

Sources: Atlas Capital Group, Johnson Fain, May 2016; ESA PCR, 2016

23480 Park Sorrento last updated: 2/10/2017
Air Quality and Greenhouse Gas Assessment

Off-Road Heavy-Duty Construction Equipment

Construction Phase	Heavy-Duty Equipment	No. of Heavy-Duty Equipment	Hours of Operation/Day Per Equipment	Hours of Operation/Week Per Equipment	Emissions Tier Rating [a]
Demolition	Air Compressors	1	8	40	
	Crawler Tractors	1	8	40	
	Haul Trucks	8	8	40	
	Rubber Tired Loaders	1	8	40	
	Skid Steer Loaders	1	8	40	
	Tractors/Loaders/Backhoes	1	8	40	
Site Preparation	Crawler Tractors	1	8	40	
	Haul Trucks	1	8	40	
	Skid Steer Loaders	1	8	40	
	Rubber Tired Loaders	1	8	40	
Grading/Excavation	Backhoes	1	8	40	
	Compactors	1	8	40	
	Crawler Tractors	1	8	40	
	Loaders	1	8	40	
	Rubber Tired Loaders	1	8	40	
Drainage/Utilities/Sub-grade	Backhoes	1	8	40	
	Compactors	1	8	40	
1	Excavator	1	8	40	
	Skid Steer Loaders	1	8	40	
	Tractors	1	8	40	
	Trenchers	1	8	40	
Building Construction	Air Compressors	1	8	40	
	Backhoes	1	8	40	
	Cement/Mortar Mixers	2	8	40	
	Concrete/Industrial Saws	2	8	40	
	Cranes	1	8	40	
	Forklifts	1	8	40	
	Pumps	1	8	40	
	Skid Steer Loaders	1	8	40	
	Tractors	1	8	40	
Architectural Coating	Air Compressors	1	6	30	
Paving	Concrete/Industrial Saws	1	8	40	
	Compactors	1	8	40	
	Paving Equipment	1	8	40	
	Rollers	1	8	40	
	Skid Steer Loaders	1	8	40	
	Sweepers/Scrubbers	1	8	40	
	Tractors	1	8	40	
Other: Final Pickups	Forklifts	1	7	40	

23480 Park Sorrento - Construction

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	1.62	1000sqft	0.05	1,620.00	0
Parking Lot	32.00	Space	0.29	12,800.00	0
Unenclosed Parking with Elevator	38.00	Space	0.34	15,200.00	0
Retirement Community	42.00	Dwelling Unit	1.32	42,000.00	120

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage for commercial and residential are proportional to lot size.

Construction Phase - Client given construction schedule

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Trips and VMT - Client given haul truck trips.

Demolition -

Grading - Client given material movement and acreage

Construction Off-road Equipment Mitigation -

Off-road Equipment - Client given equipment list

Off-road Equipment - Client given equipment list.

Vehicle Trips - Based on traffic study by Associated Transportation Engineers, 2016.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblGrading	AcresOfGrading	1.00	3.00
tblGrading	MaterialExported	0.00	1,775.00
tblLandUse	LotAcreage	0.04	0.05
tblLandUse	LotAcreage	8.40	1.32
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors

tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripNumber	166.00	120.00
tblTripsAndVMT	HaulingTripNumber	222.00	64.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblVehicleTrips	ST_TR	86.32	150.00
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	SU_TR	31.90	150.00
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	WD_TR	148.15	150.00
tblVehicleTrips	WD_TR	2.40	3.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.7268	36.2377	26.5644	0.0488	2.2153	1.9043	4.0754	0.3839	1.8355	2.1123	0.0000	4,901.3120	4,901.3120	1.2192	0.0000	4,931.7908
2019	28.8710	28.6057	25.9154	0.0475	0.5382	1.6366	2.1749	0.1441	1.5777	1.7218	0.0000	4,580.6769	4,580.6769	0.6875	0.0000	4,597.8641
Maximum	**28.8710**	**36.2377**	**26.5644**	**0.0488**	**2.2153**	**1.9043**	**4.0754**	**0.3839**	**1.8355**	**2.1123**	**0.0000**	**4,901.3120**	**4,901.3120**	**1.2192**	**0.0000**	**4,931.7908**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.7268	36.2377	26.5644	0.0488	1.1188	1.9043	2.9789	0.2179	1.8355	1.9795	0.0000	4,901.3120	4,901.3120	1.2192	0.0000	4,931.7908
2019	28.8710	28.6057	25.9154	0.0475	0.5382	1.6366	2.1749	0.1441	1.5777	1.7218	0.0000	4,580.6769	4,580.6769	0.6875	0.0000	4,597.8641
Maximum	**28.8710**	**36.2377**	**26.5644**	**0.0488**	**1.1188**	**1.9043**	**2.9789**	**0.2179**	**1.8355**	**1.9795**	**0.0000**	**4,901.3120**	**4,901.3120**	**1.2192**	**0.0000**	**4,931.7908**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**39.82**	**0.00**	**17.54**	**31.45**	**0.00**	**3.46**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	3/30/2018	5	2	
3	Grading	Grading	3/31/2018	4/5/2018	5	4	
4	Building Construction	Building Construction	4/6/2018	1/10/2019	5	200	
5	Final Pickups	Building Construction	1/11/2019	10/17/2019	5	200	
6	Paving	Paving	10/18/2019	10/31/2019	5	10	
7	Architectural Coating	Architectural Coating	11/1/2019	11/14/2019	5	10	
8	Drainage/Utilities/Sub-grade	Trenching	3/26/2018	3/30/2018	5	5	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.63

Residential Indoor: 85,050; Residential Outdoor: 28,350; Non-Residential Indoor: 2,430; Non-Residential Outdoor: 810; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Final Pickups	Cranes	0	8.00	231	0.29
Final Pickups	Forklifts	1	7.00	89	0.20
Final Pickups	Generator Sets	0	8.00	84	0.74
Final Pickups	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Final Pickups	Welders	0	8.00	46	0.45
Demolition	Crawler Tractors	1	8.00	212	0.43

Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Air Compressors	1	8.00	78	0.48
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Paving	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Skid Steer Loaders	1	8.00	65	0.37
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Sub-grade	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drainage/Utilities/Sub-grade	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Sub-grade	Excavators	1	8.00	158	0.38
Drainage/Utilities/Sub-grade	Skid Steer Loaders	1	8.00	65	0.37
Drainage/Utilities/Sub-grade	Trenchers	1	8.00	78	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	10.00	0.00	64.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	43.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Final Pickups	1	43.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Sub-grade	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7975	0.0000	1.7975	0.2722	0.0000	0.2722			0.0000			0.0000
Off-Road	1.8260	20.3446	10.5907	0.0232		0.9484	0.9484		0.8886	0.8886		2,315.2795	2,315.2795	0.6396		2,331.2697
Total	**1.8260**	**20.3446**	**10.5907**	**0.0232**	**1.7975**	**0.9484**	**2.7460**	**0.2722**	**0.8886**	**1.1608**		**2,315.2795**	**2,315.2795**	**0.6396**		**2,331.2697**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0545	1.8871	0.3656	4.7800e-003	0.1048	7.3000e-003	0.1121	0.0287	6.9900e-003	0.0357		516.7767	516.7767	0.0371		517.7037
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0695	0.0501	0.6504	1.5900e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0700e-003	0.0396		158.4336	158.4336	5.4100e-003		158.5690
Total	**0.1240**	**1.9372**	**1.0160**	**6.3700e-003**	**0.2501**	**8.4700e-003**	**0.2586**	**0.0673**	**8.0600e-003**	**0.0753**		**675.2103**	**675.2103**	**0.0425**		**676.2727**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7010	0.0000	0.7010	0.1061	0.0000	0.1061			0.0000			0.0000
Off-Road	1.8260	20.3446	10.5907	0.0232		0.9484	0.9484		0.8886	0.8886	0.0000	2,315.2795	2,315.2795	0.6396		2,331.2697
Total	**1.8260**	**20.3446**	**10.5907**	**0.0232**	**0.7010**	**0.9484**	**1.6495**	**0.1061**	**0.8886**	**0.9948**	**0.0000**	**2,315.2795**	**2,315.2795**	**0.6396**		**2,331.2697**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0545	1.8871	0.3656	4.7800e-003	0.1048	7.3000e-003	0.1121	0.0287	6.9900e-003	0.0357		516.7767	516.7767	0.0371		517.7037
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0695	0.0501	0.6504	1.5900e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0700e-003	0.0396		158.4336	158.4336	5.4100e-003		158.5690
Total	**0.1240**	**1.9372**	**1.0160**	**6.3700e-003**	**0.2501**	**8.4700e-003**	**0.2586**	**0.0673**	**8.0600e-003**	**0.0753**		**675.2103**	**675.2103**	**0.0425**		**676.2727**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.1617	15.0406	5.7817	0.0162		0.5614	0.5614		0.5165	0.5165		1,627.2388	1,627.2388	0.5066		1,639.9033
Total	**1.1617**	**15.0406**	**5.7817**	**0.0162**	**1.5908**	**0.5614**	**2.1522**	**0.1718**	**0.5165**	**0.6883**		**1,627.2388**	**1,627.2388**	**0.5066**		**1,639.9033**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809
Total	**0.0427**	**0.0308**	**0.4002**	**9.8000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**97.4976**	**97.4976**	**3.3300e-003**		**97.5809**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	1.1617	15.0406	5.7817	0.0162		0.5614	0.5614		0.5165	0.5165	0.0000	1,627.2388	1,627.2388	0.5066		1,639.9033
Total	**1.1617**	**15.0406**	**5.7817**	**0.0162**	**0.6204**	**0.5614**	**1.1818**	**0.0670**	**0.5165**	**0.5835**	**0.0000**	**1,627.2388**	**1,627.2388**	**0.5066**		**1,639.9033**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809
Total	**0.0427**	**0.0308**	**0.4002**	**9.8000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**97.4976**	**97.4976**	**3.3300e-003**		**97.5809**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5804	0.0000	0.5804	0.0649	0.0000	0.0649			0.0000			0.0000
Off-Road	1.6428	19.3431	9.2792	0.0208		0.8847	0.8847		0.8147	0.8147		2,080.2303	2,080.2303	0.6405		2,096.2415
Total	**1.6428**	**19.3431**	**9.2792**	**0.0208**	**0.5804**	**0.8847**	**1.4652**	**0.0649**	**0.8147**	**0.8796**		**2,080.2303**	**2,080.2303**	**0.6405**		**2,096.2415**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1455	5.0323	0.9748	0.0127	0.2795	0.0195	0.2989	0.0766	0.0186	0.0952		1,378.0712	1,378.0712	0.0989		1,380.5431
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0534	0.0385	0.5003	1.2200e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		121.8720	121.8720	4.1700e-003		121.9761
Total	**0.1989**	**5.0709**	**1.4751**	**0.0140**	**0.3913**	**0.0204**	**0.4116**	**0.1062**	**0.0195**	**0.1257**		**1,499.9432**	**1,499.9432**	**0.1031**		**1,502.5193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2264	0.0000	0.2264	0.0253	0.0000	0.0253			0.0000			0.0000
Off-Road	1.6428	19.3431	9.2792	0.0208		0.8847	0.8847		0.8147	0.8147	0.0000	2,080.2303	2,080.2303	0.6405		2,096.2415
Total	**1.6428**	**19.3431**	**9.2792**	**0.0208**	**0.2264**	**0.8847**	**1.1111**	**0.0253**	**0.8147**	**0.8400**	**0.0000**	**2,080.2303**	**2,080.2303**	**0.6405**		**2,096.2415**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1455	5.0323	0.9748	0.0127	0.2795	0.0195	0.2989	0.0766	0.0186	0.0952		1,378.0712	1,378.0712	0.0989		1,380.5431
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0534	0.0385	0.5003	1.2200e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		121.8720	121.8720	4.1700e-003		121.9761
Total	**0.1989**	**5.0709**	**1.4751**	**0.0140**	**0.3913**	**0.0204**	**0.4116**	**0.1062**	**0.0195**	**0.1257**		**1,499.9432**	**1,499.9432**	**0.1031**		**1,502.5193**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4584	30.2783	24.1355	0.0400		1.8925	1.8925		1.8243	1.8243		3,851.6385	3,851.6385	0.6729		3,868.4606
Total	**3.4584**	**30.2783**	**24.1355**	**0.0400**		**1.8925**	**1.8925**		**1.8243**	**1.8243**		**3,851.6385**	**3,851.6385**	**0.6729**		**3,868.4606**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0387	1.0934	0.2775	2.3400e-003	0.0576	7.9900e-003	0.0656	0.0166	7.6500e-003	0.0242		249.3083	249.3083	0.0172		249.7388
Worker	0.2297	0.1656	2.1513	5.2700e-003	0.4806	3.8500e-003	0.4845	0.1275	3.5500e-003	0.1310		524.0496	524.0496	0.0179		524.4974
Total	**0.2684**	**1.2591**	**2.4288**	**7.6100e-003**	**0.5382**	**0.0118**	**0.5501**	**0.1441**	**0.0112**	**0.1552**		**773.3579**	**773.3579**	**0.0351**		**774.2362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4584	30.2783	24.1355	0.0400		1.8925	1.8925		1.8243	1.8243	0.0000	3,851.6385	3,851.6385	0.6729		3,868.4606
Total	**3.4584**	**30.2783**	**24.1355**	**0.0400**		**1.8925**	**1.8925**		**1.8243**	**1.8243**	**0.0000**	**3,851.6385**	**3,851.6385**	**0.6729**		**3,868.4606**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0387	1.0934	0.2775	2.3400e-003	0.0576	7.9900e-003	0.0656	0.0166	7.6500e-003	0.0242		249.3083	249.3083	0.0172		249.7388
Worker	0.2297	0.1656	2.1513	5.2700e-003	0.4806	3.8500e-003	0.4845	0.1275	3.5500e-003	0.1310		524.0496	524.0496	0.0179		524.4974
Total	**0.2684**	**1.2591**	**2.4288**	**7.6100e-003**	**0.5382**	**0.0118**	**0.5501**	**0.1441**	**0.0112**	**0.1552**		**773.3579**	**773.3579**	**0.0351**		**774.2362**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0809	27.4264	23.7345	0.0400		1.6260	1.6260		1.5677	1.5677		3,826.0605	3,826.0605	0.6550		3,842.4344
Total	**3.0809**	**27.4264**	**23.7345**	**0.0400**		**1.6260**	**1.6260**		**1.5677**	**1.5677**		**3,826.0605**	**3,826.0605**	**0.6550**		**3,842.4344**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0351	1.0331	0.2548	2.3100e-003	0.0576	6.8500e-003	0.0644	0.0166	6.5500e-003	0.0231		247.0610	247.0610	0.0166		247.4765
Worker	0.2088	0.1461	1.9261	5.1000e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		507.5554	507.5554	0.0159		507.9531
Total	**0.2438**	**1.1792**	**2.1809**	**7.4100e-003**	**0.5382**	**0.0106**	**0.5488**	**0.1441**	**0.0100**	**0.1541**		**754.6164**	**754.6164**	**0.0325**		**755.4297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0809	27.4264	23.7345	0.0400		1.6260	1.6260		1.5677	1.5677	0.0000	3,826.0605	3,826.0605	0.6550		3,842.4344
Total	**3.0809**	**27.4264**	**23.7345**	**0.0400**		**1.6260**	**1.6260**		**1.5677**	**1.5677**	**0.0000**	**3,826.0605**	**3,826.0605**	**0.6550**		**3,842.4344**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0351	1.0331	0.2548	2.3100e-003	0.0576	6.8500e-003	0.0644	0.0166	6.5500e-003	0.0231		247.0610	247.0610	0.0166		247.4765
Worker	0.2088	0.1461	1.9261	5.1000e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		507.5554	507.5554	0.0159		507.9531
Total	**0.2438**	**1.1792**	**2.1809**	**7.4100e-003**	**0.5382**	**0.0106**	**0.5488**	**0.1441**	**0.0100**	**0.1541**		**754.6164**	**754.6164**	**0.0325**		**755.4297**

3.6 Final Pickups - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1400	1.2498	1.0449	1.3400e-003		0.0968	0.0968		0.0891	0.0891		132.4054	132.4054	0.0419		133.4527
Total	**0.1400**	**1.2498**	**1.0449**	**1.3400e-003**		**0.0968**	**0.0968**		**0.0891**	**0.0891**		**132.4054**	**132.4054**	**0.0419**		**133.4527**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0351	1.0331	0.2548	2.3100e-003	0.0576	6.8500e-003	0.0644	0.0166	6.5500e-003	0.0231		247.0610	247.0610	0.0166		247.4765
Worker	0.2088	0.1461	1.9261	5.1000e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		507.5554	507.5554	0.0159		507.9531
Total	**0.2438**	**1.1792**	**2.1809**	**7.4100e-003**	**0.5382**	**0.0106**	**0.5488**	**0.1441**	**0.0100**	**0.1541**		**754.6164**	**754.6164**	**0.0325**		**755.4297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1400	1.2498	1.0449	1.3400e-003		0.0968	0.0968		0.0891	0.0891	0.0000	132.4054	132.4054	0.0419		133.4527
Total	**0.1400**	**1.2498**	**1.0449**	**1.3400e-003**		**0.0968**	**0.0968**		**0.0891**	**0.0891**	**0.0000**	**132.4054**	**132.4054**	**0.0419**		**133.4527**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0351	1.0331	0.2548	2.3100e-003	0.0576	6.8500e-003	0.0644	0.0166	6.5500e-003	0.0231		247.0610	247.0610	0.0166		247.4765
Worker	0.2088	0.1461	1.9261	5.1000e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		507.5554	507.5554	0.0159		507.9531
Total	**0.2438**	**1.1792**	**2.1809**	**7.4100e-003**	**0.5382**	**0.0106**	**0.5488**	**0.1441**	**0.0100**	**0.1541**		**754.6164**	**754.6164**	**0.0325**		**755.4297**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5413	14.2510	14.0085	0.0211		0.9051	0.9051		0.8518	0.8518		2,050.7131	2,050.7131	0.4957		2,063.1055
Paving	0.0760					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6172**	**14.2510**	**14.0085**	**0.0211**		**0.9051**	**0.9051**		**0.8518**	**0.8518**		**2,050.7131**	**2,050.7131**	**0.4957**		**2,063.1055**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
Total	**0.0728**	**0.0510**	**0.6719**	**1.7800e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**177.0542**	**177.0542**	**5.5500e-003**		**177.1930**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5413	14.2510	14.0085	0.0211		0.9051	0.9051		0.8518	0.8518	0.0000	2,050.7131	2,050.7131	0.4957		2,063.1055
Paving	0.0760					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6172**	**14.2510**	**14.0085**	**0.0211**		**0.9051**	**0.9051**		**0.8518**	**0.8518**	**0.0000**	**2,050.7131**	**2,050.7131**	**0.4957**		**2,063.1055**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
Total	**0.0728**	**0.0510**	**0.6719**	**1.7800e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**177.0542**	**177.0542**	**5.5500e-003**		**177.1930**

3.8 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	28.5609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**28.8273**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0437	0.0306	0.4031	1.0700e-003	0.1006	7.9000e-004	0.1014	0.0267	7.3000e-004	0.0274		106.2325	106.2325	3.3300e-003		106.3158
Total	**0.0437**	**0.0306**	**0.4031**	**1.0700e-003**	**0.1006**	**7.9000e-004**	**0.1014**	**0.0267**	**7.3000e-004**	**0.0274**		**106.2325**	**106.2325**	**3.3300e-003**		**106.3158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	28.5609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**28.8273**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0437	0.0306	0.4031	1.0700e-003	0.1006	7.9000e-004	0.1014	0.0267	7.3000e-004	0.0274		106.2325	106.2325	3.3300e-003		106.3158
Total	**0.0437**	**0.0306**	**0.4031**	**1.0700e-003**	**0.1006**	**7.9000e-004**	**0.1014**	**0.0267**	**7.3000e-004**	**0.0274**		**106.2325**	**106.2325**	**3.3300e-003**		**106.3158**

3.9 Drainage/Utilities/Sub-grade - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4068	13.8981	12.2084	0.0173		0.9019	0.9019		0.8305	0.8305		1,728.0142	1,728.0142	0.5308		1,741.2842
Total	**1.4068**	**13.8981**	**12.2084**	**0.0173**		**0.9019**	**0.9019**		**0.8305**	**0.8305**		**1,728.0142**	**1,728.0142**	**0.5308**		**1,741.2842**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0801	0.0578	0.7505	1.8400e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2400e-003	0.0457		182.8080	182.8080	6.2500e-003		182.9642
Total	**0.0801**	**0.0578**	**0.7505**	**1.8400e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2400e-003**	**0.0457**		**182.8080**	**182.8080**	**6.2500e-003**		**182.9642**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4068	13.8981	12.2084	0.0173		0.9019	0.9019		0.8305	0.8305	0.0000	1,728.0142	1,728.0142	0.5308		1,741.2842
Total	**1.4068**	**13.8981**	**12.2084**	**0.0173**		**0.9019**	**0.9019**		**0.8305**	**0.8305**	**0.0000**	**1,728.0142**	**1,728.0142**	**0.5308**		**1,741.2842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0801	0.0578	0.7505	1.8400e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2400e-003	0.0457		182.8080	182.8080	6.2500e-003		182.9642
Total	**0.0801**	**0.0578**	**0.7505**	**1.8400e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2400e-003**	**0.0457**		**182.8080**	**182.8080**	**6.2500e-003**		**182.9642**

23480 Park Sorrento - Construction

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	1.62	1000sqft	0.05	1,620.00	0
Parking Lot	32.00	Space	0.29	12,800.00	0
Unenclosed Parking with Elevator	38.00	Space	0.34	15,200.00	0
Retirement Community	42.00	Dwelling Unit	1.32	42,000.00	120

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage for commercial and residential are proportional to lot size.

Construction Phase - Client given construction schedule

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Trips and VMT - Client given haul truck trips.

Demolition -

Grading - Client given material movement and acreage

Construction Off-road Equipment Mitigation -

Off-road Equipment - Client given equipment list

Off-road Equipment - Client given equipment list.

Vehicle Trips - Based on traffic study by Associated Transportation Engineers, 2016.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblGrading	AcresOfGrading	1.00	3.00
tblGrading	MaterialExported	0.00	1,775.00
tblLandUse	LotAcreage	0.04	0.05
tblLandUse	LotAcreage	8.40	1.32
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws

tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripNumber	166.00	120.00
tblTripsAndVMT	HaulingTripNumber	222.00	64.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblVehicleTrips	ST_TR	86.32	150.00
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	SU_TR	31.90	150.00
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	WD_TR	148.15	150.00
tblVehicleTrips	WD_TR	2.40	3.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.7506	36.2748	26.4025	0.0485	2.2153	1.9044	4.0756	0.3839	1.8356	2.1124	0.0000	4,871.6004	4,871.6004	1.2200	0.0000	4,902.0999
2019	28.8753	28.6214	25.7667	0.0471	0.5382	1.6367	2.1750	0.1441	1.5778	1.7219	0.0000	4,542.5675	4,542.5675	0.6877	0.0000	4,559.7591
Maximum	**28.8753**	**36.2748**	**26.4025**	**0.0485**	**2.2153**	**1.9044**	**4.0756**	**0.3839**	**1.8356**	**2.1124**	**0.0000**	**4,871.6004**	**4,871.6004**	**1.2200**	**0.0000**	**4,902.0999**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.7506	36.2748	26.4025	0.0485	1.1188	1.9044	2.9791	0.2179	1.8356	1.9796	0.0000	4,871.6004	4,871.6004	1.2200	0.0000	4,902.0999
2019	28.8753	28.6214	25.7667	0.0471	0.5382	1.6367	2.1750	0.1441	1.5778	1.7219	0.0000	4,542.5675	4,542.5675	0.6877	0.0000	4,559.7591
Maximum	**28.8753**	**36.2748**	**26.4025**	**0.0485**	**1.1188**	**1.9044**	**2.9791**	**0.2179**	**1.8356**	**1.9796**	**0.0000**	**4,871.6004**	**4,871.6004**	**1.2200**	**0.0000**	**4,902.0999**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**39.82**	**0.00**	**17.54**	**31.45**	**0.00**	**3.46**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	3/30/2018	5	2	
3	Grading	Grading	3/31/2018	4/5/2018	5	4	
4	Building Construction	Building Construction	4/6/2018	1/10/2019	5	200	
5	Final Pickups	Building Construction	1/11/2019	10/17/2019	5	200	
6	Paving	Paving	10/18/2019	10/31/2019	5	10	
7	Architectural Coating	Architectural Coating	11/1/2019	11/14/2019	5	10	
8	Drainage/Utilities/Sub-grade	Trenching	3/26/2018	3/30/2018	5	5	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.63

Residential Indoor: 85,050; Residential Outdoor: 28,350; Non-Residential Indoor: 2,430; Non-Residential Outdoor: 810; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Final Pickups	Cranes	0	8.00	231	0.29
Final Pickups	Forklifts	1	7.00	89	0.20
Final Pickups	Generator Sets	0	8.00	84	0.74
Final Pickups	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Final Pickups	Welders	0	8.00	46	0.45
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Rubber Tired Loaders	1	8.00	203	0.36

Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Air Compressors	1	8.00	78	0.48
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Paving	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Skid Steer Loaders	1	8.00	65	0.37
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Sub-grade	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drainage/Utilities/Sub-grade	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Sub-grade	Excavators	1	8.00	158	0.38
Drainage/Utilities/Sub-grade	Skid Steer Loaders	1	8.00	65	0.37
Drainage/Utilities/Sub-grade	Trenchers	1	8.00	78	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	10.00	0.00	64.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	43.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Final Pickups	1	43.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Sub-grade	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7975	0.0000	1.7975	0.2722	0.0000	0.2722			0.0000			0.0000
Off-Road	1.8260	20.3446	10.5907	0.0232		0.9484	0.9484		0.8886	0.8886		2,315.2795	2,315.2795	0.6396		2,331.2697
Total	**1.8260**	**20.3446**	**10.5907**	**0.0232**	**1.7975**	**0.9484**	**2.7460**	**0.2722**	**0.8886**	**1.1608**		**2,315.2795**	**2,315.2795**	**0.6396**		**2,331.2697**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0560	1.9136	0.3932	4.7000e-003	0.1048	7.4400e-003	0.1123	0.0287	7.1200e-003	0.0358		508.1960	508.1960	0.0386		509.1611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5927	1.4900e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0700e-003	0.0396		148.6228	148.6228	5.0900e-003		148.7501
Total	**0.1322**	**1.9686**	**0.9859**	**6.1900e-003**	**0.2501**	**8.6100e-003**	**0.2587**	**0.0673**	**8.1900e-003**	**0.0755**		**656.8188**	**656.8188**	**0.0437**		**657.9112**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7010	0.0000	0.7010	0.1061	0.0000	0.1061			0.0000			0.0000
Off-Road	1.8260	20.3446	10.5907	0.0232		0.9484	0.9484		0.8886	0.8886	0.0000	2,315.2795	2,315.2795	0.6396		2,331.2697
Total	**1.8260**	**20.3446**	**10.5907**	**0.0232**	**0.7010**	**0.9484**	**1.6495**	**0.1061**	**0.8886**	**0.9948**	**0.0000**	**2,315.2795**	**2,315.2795**	**0.6396**		**2,331.2697**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0560	1.9136	0.3932	4.7000e-003	0.1048	7.4400e-003	0.1123	0.0287	7.1200e-003	0.0358		508.1960	508.1960	0.0386		509.1611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5927	1.4900e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0700e-003	0.0396		148.6228	148.6228	5.0900e-003		148.7501
Total	**0.1322**	**1.9686**	**0.9859**	**6.1900e-003**	**0.2501**	**8.6100e-003**	**0.2587**	**0.0673**	**8.1900e-003**	**0.0755**		**656.8188**	**656.8188**	**0.0437**		**657.9112**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.1617	15.0406	5.7817	0.0162		0.5614	0.5614		0.5165	0.5165		1,627.2388	1,627.2388	0.5066		1,639.9033
Total	**1.1617**	**15.0406**	**5.7817**	**0.0162**	**1.5908**	**0.5614**	**2.1522**	**0.1718**	**0.5165**	**0.6883**		**1,627.2388**	**1,627.2388**	**0.5066**		**1,639.9033**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003		91.5385
Total	**0.0469**	**0.0339**	**0.3647**	**9.2000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**91.4602**	**91.4602**	**3.1300e-003**		**91.5385**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	1.1617	15.0406	5.7817	0.0162		0.5614	0.5614		0.5165	0.5165	0.0000	1,627.2388	1,627.2388	0.5066		1,639.9033
Total	**1.1617**	**15.0406**	**5.7817**	**0.0162**	**0.6204**	**0.5614**	**1.1818**	**0.0670**	**0.5165**	**0.5835**	**0.0000**	**1,627.2388**	**1,627.2388**	**0.5066**		**1,639.9033**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003		91.5385
Total	**0.0469**	**0.0339**	**0.3647**	**9.2000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**91.4602**	**91.4602**	**3.1300e-003**		**91.5385**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5804	0.0000	0.5804	0.0649	0.0000	0.0649			0.0000			0.0000
Off-Road	1.6428	19.3431	9.2792	0.0208		0.8847	0.8847		0.8147	0.8147		2,080.2303	2,080.2303	0.6405		2,096.2415
Total	**1.6428**	**19.3431**	**9.2792**	**0.0208**	**0.5804**	**0.8847**	**1.4652**	**0.0649**	**0.8147**	**0.8796**		**2,080.2303**	**2,080.2303**	**0.6405**		**2,096.2415**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1494	5.1028	1.0486	0.0125	0.2795	0.0199	0.2993	0.0766	0.0190	0.0956		1,355.1894	1,355.1894	0.1030		1,357.7630
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4559	1.1500e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		114.3253	114.3253	3.9200e-003		114.4231
Total	**0.2080**	**5.1451**	**1.5045**	**0.0137**	**0.3913**	**0.0208**	**0.4120**	**0.1062**	**0.0198**	**0.1260**		**1,469.514**	**1,469.5146**	**0.1069**		**1,472.186**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2264	0.0000	0.2264	0.0253	0.0000	0.0253			0.0000			0.0000
Off-Road	1.6428	19.3431	9.2792	0.0208		0.8847	0.8847		0.8147	0.8147	0.0000	2,080.2303	2,080.2303	0.6405		2,096.2415
Total	**1.6428**	**19.3431**	**9.2792**	**0.0208**	**0.2264**	**0.8847**	**1.1111**	**0.0253**	**0.8147**	**0.8400**	**0.0000**	**2,080.2303**	**2,080.2303**	**0.6405**		**2,096.2415**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1494	5.1028	1.0486	0.0125	0.2795	0.0199	0.2993	0.0766	0.0190	0.0956		1,355.1894	1,355.1894	0.1030		1,357.7630
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4559	1.1500e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		114.3253	114.3253	3.9200e-003		114.4231
Total	**0.2080**	**5.1451**	**1.5045**	**0.0137**	**0.3913**	**0.0208**	**0.4120**	**0.1062**	**0.0198**	**0.1260**		**1,469.5146**	**1,469.5146**	**0.1069**		**1,472.1862**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4584	30.2783	24.1355	0.0400		1.8925	1.8925		1.8243	1.8243		3,851.6385	3,851.6385	0.6729		3,868.4606
Total	**3.4584**	**30.2783**	**24.1355**	**0.0400**		**1.8925**	**1.8925**		**1.8243**	**1.8243**		**3,851.6385**	**3,851.6385**	**0.6729**		**3,868.4606**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0404	1.0958	0.3065	2.2800e-003	0.0576	8.1200e-003	0.0657	0.0166	7.7600e-003	0.0243		242.6772	242.6772	0.0184		243.1376
Worker	0.2519	0.1820	1.9604	4.9400e-003	0.4806	3.8500e-003	0.4845	0.1275	3.5500e-003	0.1310		491.5986	491.5986	0.0168		492.0195
Total	**0.2923**	**1.2778**	**2.2669**	**7.2200e-003**	**0.5382**	**0.0120**	**0.5502**	**0.1441**	**0.0113**	**0.1554**		**734.2758**	**734.2758**	**0.0353**		**735.1571**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4584	30.2783	24.1355	0.0400		1.8925	1.8925		1.8243	1.8243	0.0000	3,851.6385	3,851.6385	0.6729		3,868.4606
Total	**3.4584**	**30.2783**	**24.1355**	**0.0400**		**1.8925**	**1.8925**		**1.8243**	**1.8243**	**0.0000**	**3,851.6385**	**3,851.6385**	**0.6729**		**3,868.4606**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0404	1.0958	0.3065	2.2800e-003	0.0576	8.1200e-003	0.0657	0.0166	7.7600e-003	0.0243		242.6772	242.6772	0.0184		243.1376
Worker	0.2519	0.1820	1.9604	4.9400e-003	0.4806	3.8500e-003	0.4845	0.1275	3.5500e-003	0.1310		491.5986	491.5986	0.0168		492.0195
Total	**0.2923**	**1.2778**	**2.2669**	**7.2200e-003**	**0.5382**	**0.0120**	**0.5502**	**0.1441**	**0.0113**	**0.1554**		**734.2758**	**734.2758**	**0.0353**		**735.1571**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0809	27.4264	23.7345	0.0400		1.6260	1.6260		1.5677	1.5677		3,826.0605	3,826.0605	0.6550		3,842.4344
Total	**3.0809**	**27.4264**	**23.7345**	**0.0400**		**1.6260**	**1.6260**		**1.5677**	**1.5677**		**3,826.0605**	**3,826.0605**	**0.6550**		**3,842.4344**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0366	1.0344	0.2821	2.2500e-003	0.0576	6.9600e-003	0.0646	0.0166	6.6600e-003	0.0232		240.4250	240.4250	0.0178		240.8695
Worker	0.2293	0.1605	1.7500	4.7800e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		476.0820	476.0820	0.0149		476.4551
Total	**0.2659**	**1.1949**	**2.0321**	**7.0300e-003**	**0.5382**	**0.0107**	**0.5490**	**0.1441**	**0.0101**	**0.1542**		**716.5070**	**716.5070**	**0.0327**		**717.3246**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0809	27.4264	23.7345	0.0400		1.6260	1.6260		1.5677	1.5677	0.0000	3,826.0605	3,826.0605	0.6550		3,842.4344
Total	**3.0809**	**27.4264**	**23.7345**	**0.0400**		**1.6260**	**1.6260**		**1.5677**	**1.5677**	**0.0000**	**3,826.0605**	**3,826.0605**	**0.6550**		**3,842.4344**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0366	1.0344	0.2821	2.2500e-003	0.0576	6.9600e-003	0.0646	0.0166	6.6600e-003	0.0232		240.4250	240.4250	0.0178		240.8695
Worker	0.2293	0.1605	1.7500	4.7800e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		476.0820	476.0820	0.0149		476.4551
Total	**0.2659**	**1.1949**	**2.0321**	**7.0300e-003**	**0.5382**	**0.0107**	**0.5490**	**0.1441**	**0.0101**	**0.1542**		**716.5070**	**716.5070**	**0.0327**		**717.3246**

3.6 Final Pickups - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1400	1.2498	1.0449	1.3400e-003		0.0968	0.0968		0.0891	0.0891		132.4054	132.4054	0.0419		133.4527
Total	**0.1400**	**1.2498**	**1.0449**	**1.3400e-003**		**0.0968**	**0.0968**		**0.0891**	**0.0891**		**132.4054**	**132.4054**	**0.0419**		**133.4527**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0366	1.0344	0.2821	2.2500e-003	0.0576	6.9600e-003	0.0646	0.0166	6.6600e-003	0.0232		240.4250	240.4250	0.0178		240.8695
Worker	0.2293	0.1605	1.7500	4.7800e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		476.0820	476.0820	0.0149		476.4551
Total	**0.2659**	**1.1949**	**2.0321**	**7.0300e-003**	**0.5382**	**0.0107**	**0.5490**	**0.1441**	**0.0101**	**0.1542**		**716.5070**	**716.5070**	**0.0327**		**717.3246**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1400	1.2498	1.0449	1.3400e-003		0.0968	0.0968		0.0891	0.0891	0.0000	132.4054	132.4054	0.0419		133.4527
Total	**0.1400**	**1.2498**	**1.0449**	**1.3400e-003**		**0.0968**	**0.0968**		**0.0891**	**0.0891**	**0.0000**	**132.4054**	**132.4054**	**0.0419**		**133.4527**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0366	1.0344	0.2821	2.2500e-003	0.0576	6.9600e-003	0.0646	0.0166	6.6600e-003	0.0232		240.4250	240.4250	0.0178		240.8695
Worker	0.2293	0.1605	1.7500	4.7800e-003	0.4806	3.7600e-003	0.4844	0.1275	3.4700e-003	0.1309		476.0820	476.0820	0.0149		476.4551
Total	**0.2659**	**1.1949**	**2.0321**	**7.0300e-003**	**0.5382**	**0.0107**	**0.5490**	**0.1441**	**0.0101**	**0.1542**		**716.5070**	**716.5070**	**0.0327**		**717.3246**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5413	14.2510	14.0085	0.0211		0.9051	0.9051		0.8518	0.8518		2,050.7131	2,050.7131	0.4957		2,063.1055
Paving	0.0760					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6172**	**14.2510**	**14.0085**	**0.0211**		**0.9051**	**0.9051**		**0.8518**	**0.8518**		**2,050.7131**	**2,050.7131**	**0.4957**		**2,063.1055**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
Total	**0.0800**	**0.0560**	**0.6105**	**1.6700e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**166.0751**	**166.0751**	**5.2100e-003**		**166.2053**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5413	14.2510	14.0085	0.0211		0.9051	0.9051		0.8518	0.8518	0.0000	2,050.7131	2,050.7131	0.4957		2,063.1055
Paving	0.0760					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6172**	**14.2510**	**14.0085**	**0.0211**		**0.9051**	**0.9051**		**0.8518**	**0.8518**	**0.0000**	**2,050.7131**	**2,050.7131**	**0.4957**		**2,063.1055**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
Total	**0.0800**	**0.0560**	**0.6105**	**1.6700e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**166.0751**	**166.0751**	**5.2100e-003**		**166.2053**

3.8 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	28.5609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**28.8273**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0480	0.0336	0.3663	1.0000e-003	0.1006	7.9000e-004	0.1014	0.0267	7.3000e-004	0.0274		99.6451	99.6451	3.1200e-003		99.7232
Total	**0.0480**	**0.0336**	**0.3663**	**1.0000e-003**	**0.1006**	**7.9000e-004**	**0.1014**	**0.0267**	**7.3000e-004**	**0.0274**		**99.6451**	**99.6451**	**3.1200e-003**		**99.7232**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	28.5609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**28.8273**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0480	0.0336	0.3663	1.0000e-003	0.1006	7.9000e-004	0.1014	0.0267	7.3000e-004	0.0274		99.6451	99.6451	3.1200e-003		99.7232
Total	**0.0480**	**0.0336**	**0.3663**	**1.0000e-003**	**0.1006**	**7.9000e-004**	**0.1014**	**0.0267**	**7.3000e-004**	**0.0274**		**99.6451**	**99.6451**	**3.1200e-003**		**99.7232**

3.9 Drainage/Utilities/Sub-grade - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4068	13.8981	12.2084	0.0173		0.9019	0.9019		0.8305	0.8305		1,728.0142	1,728.0142	0.5308		1,741.2842
Total	**1.4068**	**13.8981**	**12.2084**	**0.0173**		**0.9019**	**0.9019**		**0.8305**	**0.8305**		**1,728.0142**	**1,728.0142**	**0.5308**		**1,741.2842**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0879	0.0635	0.6839	1.7200e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2400e-003	0.0457		171.4879	171.4879	5.8700e-003		171.6347
Total	**0.0879**	**0.0635**	**0.6839**	**1.7200e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2400e-003**	**0.0457**		**171.4879**	**171.4879**	**5.8700e-003**		**171.6347**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4068	13.8981	12.2084	0.0173		0.9019	0.9019		0.8305	0.8305	0.0000	1,728.0142	1,728.0142	0.5308		1,741.2842
Total	**1.4068**	**13.8981**	**12.2084**	**0.0173**		**0.9019**	**0.9019**		**0.8305**	**0.8305**	**0.0000**	**1,728.0142**	**1,728.0142**	**0.5308**		**1,741.2842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0879	0.0635	0.6839	1.7200e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2400e-003	0.0457		171.4879	171.4879	5.8700e-003		171.6347
Total	**0.0879**	**0.0635**	**0.6839**	**1.7200e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2400e-003**	**0.0457**		**171.4879**	**171.4879**	**5.8700e-003**		**171.6347**

Appendix A.2
Operational Emissions

- Operations : CalEEMod Output (Summer)- Existing
- Operations : CalEEMod Output (Winter)- Existing
- Operations : CalEEMod Output (Summer)- Project
- Operations : CalEEMod Output (Winter)- Project

23480 Park Sorrento - Existing Operational

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	13.18	1000sqft	0.30	13,180.00	0
General Office Building	13.18	1000sqft	0.30	13,180.00	0
Parking Lot	17.00	1000sqft	0.39	17,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.88	0.88
tblVehicleTrips	ST_TR	2.46	11.03
tblVehicleTrips	SU_TR	1.05	11.03

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Energy	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Mobile	1.3641	6.2734	18.1587	0.0533	2.2807	0.0622	2.3429	0.6479	0.0586	0.7065		5,406.2637	5,406.2637	0.2968		5,413.6845
Total	**1.9692**	**6.3501**	**18.2276**	**0.0538**	**2.2807**	**0.0681**	**2.3487**	**0.6479**	**0.0644**	**0.7124**		**5,498.2889**	**5,498.2889**	**0.2986**	**1.6900e-003**	**5,506.2572**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Energy	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Mobile	1.3641	6.2734	18.1587	0.0533	2.2807	0.0622	2.3429	0.6479	0.0586	0.7065		5,406.2637	5,406.2637	0.2968		5,413.6845
Total	**1.9692**	**6.3501**	**18.2276**	**0.0538**	**2.2807**	**0.0681**	**2.3487**	**0.6479**	**0.0644**	**0.7124**		**5,498.2889**	**5,498.2889**	**0.2986**	**1.6900e-003**	**5,506.2572**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3641	6.2734	18.1587	0.0533	2.2807	0.0622	2.3429	0.6479	0.0586	0.7065		5,406.2637	5,406.2637	0.2968		5,413.6845
Unmitigated	1.3641	6.2734	18.1587	0.0533	2.2807	0.0622	2.3429	0.6479	0.0586	0.7065		5,406.2637	5,406.2637	0.2968		5,413.6845

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	145.38	145.38	145.38	468,321	468,321
General Office Building	145.38	145.38	145.38	468,321	468,321
Parking Lot	0.00	0.00	0.00		
Total	290.75	290.75	290.75	936,642	936,642

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
General Office Building	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Parking Lot	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
NaturalGas Unmitigated	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	391.067	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.4300e-003**	**0.0767**	**0.0644**	**4.6000e-004**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**		**92.0157**	**92.0157**	**1.7600e-003**	**1.6900e-003**	**92.5625**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.391067	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.4300e-003**	**0.0767**	**0.0644**	**4.6000e-004**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**		**92.0157**	**92.0157**	**1.7600e-003**	**1.6900e-003**	**92.5625**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Unmitigated	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0682					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Total	**0.5966**	**4.0000e-005**	**4.4900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.4900e-003**	**9.4900e-003**	**3.0000e-005**		**0.0101**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0682					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Total	**0.5966**	**4.0000e-005**	**4.4900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.4900e-003**	**9.4900e-003**	**3.0000e-005**		**0.0101**

23480 Park Sorrento - Existing Operational

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	13.18	1000sqft	0.30	13,180.00	0
General Office Building	13.18	1000sqft	0.30	13,180.00	0
Parking Lot	17.00	1000sqft	0.39	17,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.88	0.88
tblVehicleTrips	ST_TR	2.46	11.03
tblVehicleTrips	SU_TR	1.05	11.03

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Energy	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Mobile	1.3196	6.4515	17.1726	0.0505	2.2807	0.0626	2.3433	0.6479	0.0590	0.7069		5,126.4335	5,126.4335	0.2951		5,133.8114
Total	**1.9247**	**6.5282**	**17.2415**	**0.0510**	**2.2807**	**0.0685**	**2.3492**	**0.6479**	**0.0649**	**0.7128**		**5,218.4587**	**5,218.4587**	**0.2969**	**1.6900e-003**	**5,226.3841**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Energy	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Mobile	1.3196	6.4515	17.1726	0.0505	2.2807	0.0626	2.3433	0.6479	0.0590	0.7069		5,126.4335	5,126.4335	0.2951		5,133.8114
Total	**1.9247**	**6.5282**	**17.2415**	**0.0510**	**2.2807**	**0.0685**	**2.3492**	**0.6479**	**0.0649**	**0.7128**		**5,218.4587**	**5,218.4587**	**0.2969**	**1.6900e-003**	**5,226.3841**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3196	6.4515	17.1726	0.0505	2.2807	0.0626	2.3433	0.6479	0.0590	0.7069		5,126.4335	5,126.4335	0.2951		5,133.8114
Unmitigated	1.3196	6.4515	17.1726	0.0505	2.2807	0.0626	2.3433	0.6479	0.0590	0.7069		5,126.4335	5,126.4335	0.2951		5,133.8114

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	145.38	145.38	145.38	468,321	468,321
General Office Building	145.38	145.38	145.38	468,321	468,321
Parking Lot	0.00	0.00	0.00		
Total	290.75	290.75	290.75	936,642	936,642

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
General Office Building	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Parking Lot	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
NaturalGas Unmitigated	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	391.067	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.4300e-003**	**0.0767**	**0.0644**	**4.6000e-004**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**		**92.0157**	**92.0157**	**1.7600e-003**	**1.6900e-003**	**92.5625**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.391067	8.4300e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003		92.0157	92.0157	1.7600e-003	1.6900e-003	92.5625
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.4300e-003**	**0.0767**	**0.0644**	**4.6000e-004**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**		**92.0157**	**92.0157**	**1.7600e-003**	**1.6900e-003**	**92.5625**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Unmitigated	0.5966	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0682					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Total	**0.5966**	**4.0000e-005**	**4.4900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.4900e-003**	**9.4900e-003**	**3.0000e-005**		**0.0101**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0682					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.4900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.4900e-003	9.4900e-003	3.0000e-005		0.0101
Total	**0.5966**	**4.0000e-005**	**4.4900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.4900e-003**	**9.4900e-003**	**3.0000e-005**		**0.0101**

23480 Park Sorrento - Operational

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	1.62	1000sqft	0.05	1,620.00	0
Parking Lot	32.00	Space	0.29	12,800.00	0
Unenclosed Parking with Elevator	38.00	Space	0.34	15,200.00	0
Retirement Community	42.00	Dwelling Unit	1.32	42,000.00	120

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Vehicle Trips - Trip rates taken from traffic report completed by Associated Transportation Engineers, 2016.

Woodstoves - No woodburning fireplaces allowed in new developments. Assumed one gas burning unit for each DU

Energy Use - California Energy Commission, Adoption Hearing, 2016 Building Energy Efficiency Standards, June 10, 2015. Available: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf. Accessed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblEnergyUse	LightingElect	3.70	3.52
tblEnergyUse	LightingElect	0.88	0.83
tblEnergyUse	LightingElect	1,001.10	720.79
tblEnergyUse	LightingElect	2.63	2.50
tblEnergyUse	T24E	2.12	2.01
tblEnergyUse	T24E	245.59	176.83
tblEnergyUse	T24NG	15.24	14.48
tblEnergyUse	T24NG	13,843.20	9,967.10
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	35.70	42.00
tblFireplaces	NumberNoFireplace	4.20	0.00
tblFireplaces	NumberWood	2.10	0.00
tblLandUse	LotAcreage	0.04	0.05
tblLandUse	LotAcreage	8.40	1.32
tblTripsAndVMT	HaulingTripNumber	166.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	64.00
tblVehicleTrips	ST_TR	86.32	150.00
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	SU_TR	31.90	150.00
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	WD_TR	148.15	150.00
tblVehicleTrips	WD_TR	2.40	3.44

tblWoodstoves	NumberCatalytic	2.10	0.00
tblWoodstoves	NumberNoncatalytic	2.10	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076
Energy	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267
Mobile	0.7564	3.1175	8.0708	0.0222	1.6034	0.0262	1.6296	0.4291	0.0246	0.4537		2,250.4819	2,250.4819	0.1328		2,253.8010
Total	**1.9151**	**4.0011**	**11.9303**	**0.0278**	**1.6034**	**0.1133**	**1.7168**	**0.4291**	**0.1118**	**0.5409**	**0.0000**	**3,332.1698**	**3,332.1698**	**0.1596**	**0.0197**	**3,342.0354**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076
Energy	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267
Mobile	0.7564	3.1175	8.0708	0.0222	1.6034	0.0262	1.6296	0.4291	0.0246	0.4537		2,250.4819	2,250.4819	0.1328		2,253.8010
Total	**1.9151**	**4.0011**	**11.9303**	**0.0278**	**1.6034**	**0.1133**	**1.7168**	**0.4291**	**0.1118**	**0.5409**	**0.0000**	**3,332.1698**	**3,332.1698**	**0.1596**	**0.0197**	**3,342.0354**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7564	3.1175	8.0708	0.0222	1.6034	0.0262	1.6296	0.4291	0.0246	0.4537		2,250.4819	2,250.4819	0.1328		2,253.8010
Unmitigated	0.7564	3.1175	8.0708	0.0222	1.6034	0.0262	1.6296	0.4291	0.0246	0.4537		2,250.4819	2,250.4819	0.1328		2,253.8010

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Bank (with Drive-Through)	243.00	243.00	243.00	260,653	260,653
Parking Lot	0.00	0.00	0.00		
Retirement Community	144.48	144.48	144.48	493,710	493,710
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	387.48	387.48	387.48	754,363	754,363

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Bank (with Drive-Through)	16.60	8.40	6.90	6.60	74.40	19.00	27	26	47
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Retirement Community	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Bank (with Drive-Through)	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Parking Lot	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Unenclosed Parking with Elevator	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Retirement Community	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267
NaturalGas Unmitigated	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Bank (with Drive-Through)	94.7145	1.0200e-003	9.2900e-003	7.8000e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004		11.1429	11.1429	2.1000e-004	2.0000e-004	11.2091
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	1486.47	0.0160	0.1370	0.0583	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.8784	174.8784	3.3500e-003	3.2100e-003	175.9176
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0171**	**0.1463**	**0.0661**	**9.3000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**		**186.0213**	**186.0213**	**3.5600e-003**	**3.4100e-003**	**187.1267**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Bank (with Drive-Through)	0.0947145	1.0200e-003	9.2900e-003	7.8000e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004		11.1429	11.1429	2.1000e-004	2.0000e-004	11.2091
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	1.48647	0.0160	0.1370	0.0583	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.8784	174.8784	3.3500e-003	3.2100e-003	175.9176
Unenclosed Parking with	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0171**	**0.1463**	**0.0661**	**9.3000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**		**186.0213**	**186.0213**	**3.5600e-003**	**3.4100e-003**	**187.1267**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076
Unmitigated	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0783					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8736					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0815	0.6967	0.2965	4.4500e-003		0.0563	0.0563		0.0563	0.0563	0.0000	889.4118	889.4118	0.0171	0.0163	894.6971
Landscaping	0.1083	0.0406	3.4970	1.8000e-004		0.0191	0.0191		0.0191	0.0191		6.2549	6.2549	6.2300e-003		6.4105
Total	**1.1417**	**0.7373**	**3.7934**	**4.6300e-003**		**0.0754**	**0.0754**		**0.0754**	**0.0754**	**0.0000**	**895.6666**	**895.6666**	**0.0233**	**0.0163**	**901.1076**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0783					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8736					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0815	0.6967	0.2965	4.4500e-003		0.0563	0.0563		0.0563	0.0563	0.0000	889.4118	889.4118	0.0171	0.0163	894.6971
Landscaping	0.1083	0.0406	3.4970	1.8000e-004		0.0191	0.0191		0.0191	0.0191		6.2549	6.2549	6.2300e-003		6.4105
Total	**1.1417**	**0.7373**	**3.7934**	**4.6300e-003**		**0.0754**	**0.0754**		**0.0754**	**0.0754**	**0.0000**	**895.6666**	**895.6666**	**0.0233**	**0.0163**	**901.1076**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

23480 Park Sorrento - Operational

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	1.62	1000sqft	0.05	1,620.00	0
Parking Lot	32.00	Space	0.29	12,800.00	0
Unenclosed Parking with Elevator	38.00	Space	0.34	15,200.00	0
Retirement Community	42.00	Dwelling Unit	1.32	42,000.00	120

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Vehicle Trips - Trip rates taken from traffic report completed by Associated Transportation Engineers, 2016.

Woodstoves - No woodburning fireplaces allowed in new developments. Assumed one gas burning unit for each DU

Energy Use - California Energy Commission, Adoption Hearing, 2016 Building Energy Efficiency Standards, June 10, 2015. Available: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf. Accessed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblEnergyUse	LightingElect	3.70	3.52
tblEnergyUse	LightingElect	0.88	0.83
tblEnergyUse	LightingElect	1,001.10	720.79
tblEnergyUse	LightingElect	2.63	2.50
tblEnergyUse	T24E	2.12	2.01
tblEnergyUse	T24E	245.59	176.83
tblEnergyUse	T24NG	15.24	14.48
tblEnergyUse	T24NG	13,843.20	9,967.10
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	35.70	42.00
tblFireplaces	NumberNoFireplace	4.20	0.00
tblFireplaces	NumberWood	2.10	0.00
tblLandUse	LotAcreage	0.04	0.05
tblLandUse	LotAcreage	8.40	1.32
tblTripsAndVMT	HaulingTripNumber	166.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	64.00
tblVehicleTrips	ST_TR	86.32	150.00
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	SU_TR	31.90	150.00
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	WD_TR	148.15	150.00
tblVehicleTrips	WD_TR	2.40	3.44

tblWoodstoves	NumberCatalytic	2.10	0.00
tblWoodstoves	NumberNoncatalytic	2.10	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076
Energy	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267
Mobile	0.7308	3.1759	7.8225	0.0210	1.6034	0.0265	1.6299	0.4291	0.0249	0.4540		2,131.4554	2,131.4554	0.1338		2,134.7999
Total	**1.8895**	**4.0595**	**11.6820**	**0.0266**	**1.6034**	**0.1136**	**1.7171**	**0.4291**	**0.1121**	**0.5412**	**0.0000**	**3,213.1433**	**3,213.1433**	**0.1606**	**0.0197**	**3,223.0342**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076
Energy	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267
Mobile	0.7308	3.1759	7.8225	0.0210	1.6034	0.0265	1.6299	0.4291	0.0249	0.4540		2,131.4554	2,131.4554	0.1338		2,134.7999
Total	**1.8895**	**4.0595**	**11.6820**	**0.0266**	**1.6034**	**0.1136**	**1.7171**	**0.4291**	**0.1121**	**0.5412**	**0.0000**	**3,213.1433**	**3,213.1433**	**0.1606**	**0.0197**	**3,223.0342**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7308	3.1759	7.8225	0.0210	1.6034	0.0265	1.6299	0.4291	0.0249	0.4540		2,131.4554	2,131.4554	0.1338		2,134.7999
Unmitigated	0.7308	3.1759	7.8225	0.0210	1.6034	0.0265	1.6299	0.4291	0.0249	0.4540		2,131.4554	2,131.4554	0.1338		2,134.7999

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Bank (with Drive-Through)	243.00	243.00	243.00	260,653	260,653
Parking Lot	0.00	0.00	0.00		
Retirement Community	144.48	144.48	144.48	493,710	493,710
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	387.48	387.48	387.48	754,363	754,363

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Bank (with Drive-Through)	16.60	8.40	6.90	6.60	74.40	19.00	27	26	47
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Retirement Community	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Bank (with Drive-Through)	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Parking Lot	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Unenclosed Parking with Elevator	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Retirement Community	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267
NaturalGas Unmitigated	0.0171	0.1463	0.0661	9.3000e-004		0.0118	0.0118		0.0118	0.0118		186.0213	186.0213	3.5700e-003	3.4100e-003	187.1267

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Bank (with Drive-Through)	94.7145	1.0200e-003	9.2900e-003	7.8000e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004		11.1429	11.1429	2.1000e-004	2.0000e-004	11.2091
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	1486.47	0.0160	0.1370	0.0583	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.8784	174.8784	3.3500e-003	3.2100e-003	175.9176
Unenclosed Parking with	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0171**	**0.1463**	**0.0661**	**9.3000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**		**186.0213**	**186.0213**	**3.5600e-003**	**3.4100e-003**	**187.1267**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Bank (with Drive-Through)	0.0947145	1.0200e-003	9.2900e-003	7.8000e-003	6.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004		11.1429	11.1429	2.1000e-004	2.0000e-004	11.2091
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	1.48647	0.0160	0.1370	0.0583	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.8784	174.8784	3.3500e-003	3.2100e-003	175.9176
Unenclosed Parking with	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0171**	**0.1463**	**0.0661**	**9.3000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**		**186.0213**	**186.0213**	**3.5600e-003**	**3.4100e-003**	**187.1267**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076
Unmitigated	1.1417	0.7373	3.7934	4.6300e-003		0.0754	0.0754		0.0754	0.0754	0.0000	895.6666	895.6666	0.0233	0.0163	901.1076

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0783					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8736					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0815	0.6967	0.2965	4.4500e-003		0.0563	0.0563		0.0563	0.0563	0.0000	889.4118	889.4118	0.0171	0.0163	894.6971
Landscaping	0.1083	0.0406	3.4970	1.8000e-004		0.0191	0.0191		0.0191	0.0191		6.2549	6.2549	6.2300e-003		6.4105
Total	**1.1417**	**0.7373**	**3.7934**	**4.6300e-003**		**0.0754**	**0.0754**		**0.0754**	**0.0754**	**0.0000**	**895.6666**	**895.6666**	**0.0233**	**0.0163**	**901.1076**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0783					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8736					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0815	0.6967	0.2965	4.4500e-003		0.0563	0.0563		0.0563	0.0563	0.0000	889.4118	889.4118	0.0171	0.0163	894.6971
Landscaping	0.1083	0.0406	3.4970	1.8000e-004		0.0191	0.0191		0.0191	0.0191		6.2549	6.2549	6.2300e-003		6.4105
Total	**1.1417**	**0.7373**	**3.7934**	**4.6300e-003**		**0.0754**	**0.0754**		**0.0754**	**0.0754**	**0.0000**	**895.6666**	**895.6666**	**0.0233**	**0.0163**	**901.1076**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Appendix A.3
Title 24 Energy Savings

23480 Park Sorrento

Air Quality and Greenhouse Gas Assessment

Title 24 Energy Savings Adjustment

Nonresidential

% savings over Title 24 (2016)	% savings over Title 24 (2013)
0%	5.0%
5%	9.8%
10%	14.5%
15%	19.3%
20%	24.0%

Residential

% savings over Title 24 (2016)	% savings over Title 24 (2013)
0%	28.0%
5%	31.6%
10%	35.2%
15%	38.8%
20%	42.4%

Project Energy Use Factors Adjustment

Nonresidential % savings over Title 24 (2013) =	14.5%
Residential % savings over Title 24 (2013) =	28.0%

	T24 Electricity	NT24 Electricity	Lighting Electricity	T24 NG	NT24 NG
Title 24 (2013 - CalEEMod Default)					
Project Nonresidential Land Uses					
Office/Bank	4.94	4.94	4.46	4.22	1.00
Surface Parking Lot	-	-	0.88	-	-
Unenclosed Parking with Elevator	-	0.19	2.63	-	-
Project Residential Land Uses				2.01	
Senior Housing	245.59	3,126.32	1,001.10	13,843.20	2,951.00
Title 24 (2016)					
Project Nonresidential Land Uses					
Office/Bank	4.22	4.94	3.81	3.61	1.00
Surface Parking Lot	-	-	0.75	-	-
Unenclosed Parking with Elevator	-	0.19	2.25	-	-
Project Residential Land Uses					
Senior Housing	176.83	3,126.32	720.79	9,967.10	2,951.00

Sources:

California Emissions Estimator Model (CalEEMod), version 2016.3.1.

California Energy Commission, Adoption Hearing, 2016 Building Energy Efficiency Standards, June 10, 2015. Available: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf. Accessed December 2016.

Appendix A.4
South Coast Air Quality Management District Rule 403

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure		Guidance
Unpaved roads/parking lots	19-1	Stabilize soils to meet the applicable performance standards; and	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
	19-2	Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	
Vacant land	20-1	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

APPENDIX B

Biological Resources Technical Report

BIOLOGICAL RESOURCES TECHNICAL REPORT
PARK SORRENTO
CALABASAS, CALIFORNIA

BIOLOGICAL ASSESSMENT SERVICES – November 2016

BIOLOGICAL RESOURCES TECHNICAL REPORT
PARK SORRENTO

CALABASAS, CALIFORNIA

Applicant:

Ken Stockton Architects, Inc.
5522 Fallbrook Ave.
Woodland Hills, CA 91367
Contact: Mr. Ken Stockton

Prepared by:

Biological Assessment Services
709 E. Woodbury Rd.
Altadena, California 91001
Ph. 858-967-6508
Contact: Ty Garrison

November 2016

TABLE OF CONTENTS

Figures

Tables

Appendix

1 Sensitive Biological Resources Evaluations
2 Floral and Faunal Compendia

Cover: Green Heron on the Park Sorrento Project Site

SUMMARY

This biological constraints analysis reports on the existing biological resources on the Park Sorrento project site at 23400 and 23480 Park Sorrento, Calabasas, CA and the constraints to development that they represent. The project proposes to demolish an existing 2-story office building and construct a new 63,301 square-foot mixed use project, which includes 2,128 square feet of commercial retail space and 42 age restricted residential units. The applicant is requesting to change the General Plan land use designation from Business-Professional Office (B-PO) to Mixed Use 0.95 (MU 0.95) and the zoning designation from Commercial Office (CO) to Commercial Mixed Use (CMU). The proposed project includes five (5) affordable housing units located on-site and designated for very low income seniors (55+).

The project site is comprised of approximately 1.93 acres of developed and natural land in Calabasas. The site is currently occupied by 1.06 acres of developed land consisting of a building, parking lot, and landscaped areas that include lawns and ornamental trees; and 0.87 acres of southern coast live oak riparian forest that includes many nonnative canopy and understory elements associated with McCoy Creek, which runs along the southern and eastern portions of the project site.

There are more than 110 sensitive biological resources reported to occur in the vicinity, among these are species that are not considered in immediate danger of extirpation but local experts have noted apparent signs of decline and have placed them on watch lists. Others have no possibility of occurring onsite as they are limited to specific localized habitat types such as coastal dunes or salt marshes. After removing most of the lower sensitivity resources and those that could not occur onsite, there are 107 biological resources in the vicinity that are either high ranking in sensitivity or could occur onsite. Forty (37) of these are plants, 56 are wildlife, and 14 are habitat types. Of these, six (6) sensitive bird species are known to occur on the site. Several habitat types protected

under City, State and Federal legislation or policies occur on the project site. These include riparian habitats, streamcourses, and mature trees, especially oaks. In each case there is a prescribed permitting process that must be followed and conditions that must be met. The U.S. Army Corps of Engineers, California Regional Water Quality Control Board, and California Department of Fish and Wildlife regulate impacts to streamcourses and riparian habitats.

Oak trees that have a diameter at breast height of two (2) inches or greater (DBH; 4.5 feet above the natural grade surrounding the tree) are protected under the City of Calabasas Oak Tree Preservation and Protection Guidelines and Section 17.26.070 of the Calabasas Municipal Code. According to the ok tree report prepared for the project there are 52 coast live oaks (*Quercus agrifolia*) and 12 valley oaks (*Quercus lobata*) of ordinance size within 200 feet of the project footprint, totaling 64 live oak trees (two dead trees were also noted onsite). Of these, 8 oaks (1 removal, 7 permanent encroachments) may be impacted and will be mitigated in accordance with the City Ordinance or special conditions of approval for this project. Please refer to the oak tree report prepared for the project (Greeley, 2015) for details regarding the oak tree survey and results. While analyzing impact to oak riparian woodland several discrepancies were discovered between the habitat analysis and the oak tree report. The first is that two trees that may be impacted appear on the tree location map but are not noted in the report. These are trees number 124 and 126. Another discrepancy has more to do with interpretation of potential impacts. When a conservative 10-foot buffer is added to the grading limits of the project, several additional trees would be impacted, including three additional removals and two additional encroachments.

Mitigation for impacts to biological resources will be required in order to obtain some or all of the necessary permits. Mitigation may include one or a combination of the following measures: impact avoidance; purchase of credits in an established mitigation bank; purchase and preservation of similar habitats in the project vicinity; $^{and}/_{or}$ creation or enhancement of existing similar resources on the project site or in the project vicinity.

In conclusion, project implementation will result in no significant unavoidable impacts to biological resources on the project site. All impacts to biological resources will be mitigated to levels of less than significant.

INTRODUCTION

The proposed project is located on a 1.93-acre lot with an office building parking lot and landscaped areas that occupy 1.06 acres and natural habitat consisting of oak-riparian woodland associated with McCoy Creek that occupies 0.87 acres. The project proposes to demolish an existing 2-story office building and construct a new 63,301 square-foot mixed use project, which includes 2,128 square feet of commercial retail space and 42 age restricted residential units. The applicant is requesting to change the General Plan land use designation from Business-Professional Office (B-PO) to Mixed Use 0.95 (MU 0.95) and the zoning designation from Commercial Office (CO) to Commercial Mixed Use (CMU). The proposed project includes five (5) affordable housing units located on-site and designated for very low income seniors (55+).

The location of the proposed project site is 23480 Park Sorrento, Calabasas in the western portion of Los Angeles County. The site is surrounded by residential and commercial properties. The 1.93-acre site can be located on the United States Geological Survey 7.5 minute *Calabasas* quadrangle map. The site is located in a portion of Section 22 in T1N, R17W San Bernardino Baseline and Meridian.

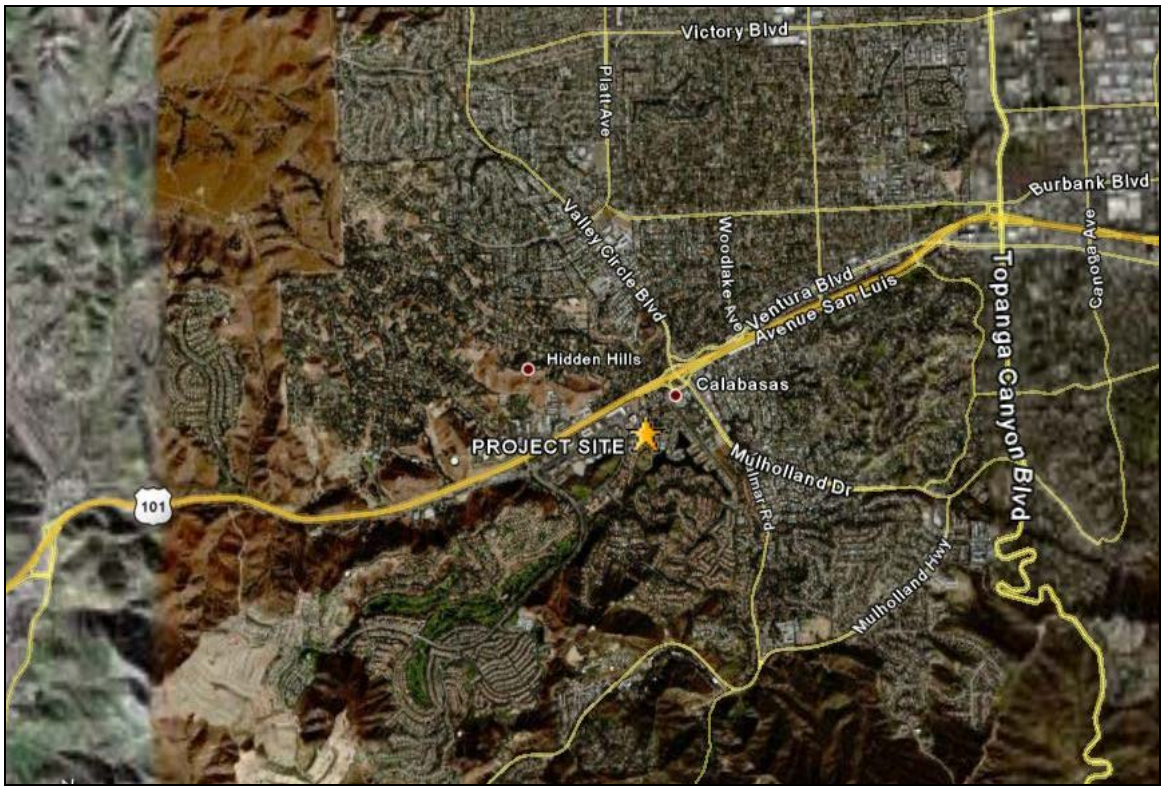


FIGURE 1: VICINITY MAP

RESOURCE DESCRIPTION

The natural resources known to occur in the project area are described in general terms. The resources found on the project site are described in greater detail. The floral and faunal composition of the project site is described herein from information compiled through field reconnaissance, supplemented by existing documentation of biological resources within the project vicinity. The general survey was conducted by Biological Assessment Services and the initial preliminary constraint survey was conducted by Land Design Consultants biologists Michael Cady and Laurel Peelle on May 11, 2006. A follow up survey was conducted by biologist Joel Boggus of Biological Assessment Services on October 30, 2012 as part of the potential area of impact for the adjacent Avanti project. Additional surveys on the site were conducted at regular intervals as part of the ongoing environmental monitoring for the construction of the Avanti project by Ty Garrison of BAS. One additional survey of the site was conducted by Ty Garrison on September 15, 2016 with a brief follow up on December 19, 2016. The surveys included vegetation mapping; general plant inventory; habitat assessment for evaluating the potential for special status wildlife species; general wildlife inventory; and evaluation of potential U.S. Army Corps of Engineers and California Department of Fish and Wildlife jurisdictional waters and wetlands.

Regional Overview

The proposed project site is located in the foothills at the southeastern edge of the San Fernando Valley. The Santa Monica Mountains rise to the south, with Beverly Hills and the west Los Angeles basin beyond that. The Santa Monica Mountains stretch to the east and west of the site and the San Fernando Valley is just north of the property. The transmontane location of the project site is within the rain shadow Coast Range Mountains. The available, though infrequent, precipitation provides for a series of arid plant communities that show an interesting cross-section of both inland and Southern Coast Range biota.

The region experiences a Mediterranean climate characterized by hot dry summers, and cool, mild winters, with precipitation occurring in the winter months. The area is within the climatic transition zone from the moister coastal region to the more arid inland regions of southern California. The transition zone is characterized by shift in species composition of the plant and animal communities from coastal species or races to those found in the inland valleys. Many plant and animal specimens collected in this transition region exhibit characteristics of both inland and coastal populations. Valley and coast live oak woodlands and savannas, riparian woodland, chaparral, coastal sage scrub, and grassland compose the natural biotic communities in the project vicinity.

SITE CHARACTERIZATION

The physical and biotic characteristics of the site are described as it existed at the time of the biological surveys.

Non-Biotic Characteristics

The nearly 2-acre project site is currently occupied by a two story office building with associated, access roads, a parking lot, and sidewalks. McCoy Creek, a stream that is a tributary to Arroyo Calabasas (all are a part of the Los Angeles River watershed), is located in the southern and eastern portions of the project site. The stream onsite is bordered by relatively steep banks dominated by southern coast live oak riparian woodland. Oak woodlands are deemed riparian when their canopies overhang a streamcourse and thus may affect the ecology of the stream or if they are entirely dependent on the streamcourse for their water supply. North of the project site, and across Park Sorrento, are residential and commercial developments. A tennis club and commercial complex are located to the east of the site's boundaries, and another commercial complex is located to the west. Beyond the stream to the south is a park that includes a man-made lake.

Habitats

The vegetation on the project site consists of one natural plant community, southern coast live oak riparian forest, and landscaped areas. Figure 2: HABITAT MAP illustrates the location and amount of habitats located onsite.

Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest (as defined by Robert Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* 1986) occupies 0.87 acres (45.0%) of the project site along McCoy Creek. According to Holland this vegetation type is open, to locally dense, evergreen sclerophyllous riparian woodlands dominated by coast live oak. Valley oak (*Quercus lobata*), arroyo willow (*Salix lasiolepis*), narrow-leaved willow (*Salix exigua*), and Fremont cottonwood (*Populus*

fremontii) were also found onsite as overstory and mid-story components of the habitat. A stand of London plane (*Platanus x acerifolia*) trees is located between the landscaped areas and the oak riparian woodland. This hybrid sycamore, though not native, is analogous to the riparian native western sycamore (*Platanus racemosa*), and is included in the riparian habitat designation. Nonnative Peruvian peppers (*Schinus molle*) are also present. This habitat appears to be richer in herbs and poorer in understory shrubs than other riparian communities. The understory was composed primarily of periwinkle (*Vinca major*), poison oak (*Toxicodendron diversilobum*) and California blackberry (*Rubus ursinus*). This habitat typically occurs in valley bottoms and outer floodplains along larger streams, in sandy soils or alluvium (Holland 1986; Sawyer and Keeler-Wolf 1995).

Landscaped

Landscaped and developed areas associated with the existing office building occupy 1.06 acres (55 %) of the project site. The landscaping consists primarily of trees and shrubs around the existing office building. Trees used in the landscaping include silver dollar Eucalyptus (*Eucalyptus polythemos*), blue gum *(Eucalyptus globulus*), crepe myrtle (*Lagerstroemia* sp.) and Jacaranda (*Jacaranda mimosifolia*) among others. Various shrubs are used in the landscaping for ornamental and visual shielding purposes.

Streamcourse – USACE / CDFW / CRWQCB Jurisdictional Areas

McCoy Creek, located to the south and east of the project site, had a steady flow of water during the surveys of the site. The stream connects to Arroyo Calabasas, which is a direct tributary to the Los Angeles River. This qualifies the stream as "Waters of the US" and puts it under the jurisdiction of the United States Army Corps of Engineers (USACE) under Section 404 of the Federal Clean Water Act. The total amount of USACE jurisdictional "Waters of the US," has not yet been determined using a detailed jurisdictional delineation but based on the topographical map is approximately 0.13 acres. The jurisdiction of the Regional Water Quality Control Board (RWQCB) is over discharge into "Waters of the State" which includes any surface or ground water in the state of California, according to the California Porter-Cologne Water Quality Act. While this jurisdiction may at times include more area than the Waters of the US, the extent is

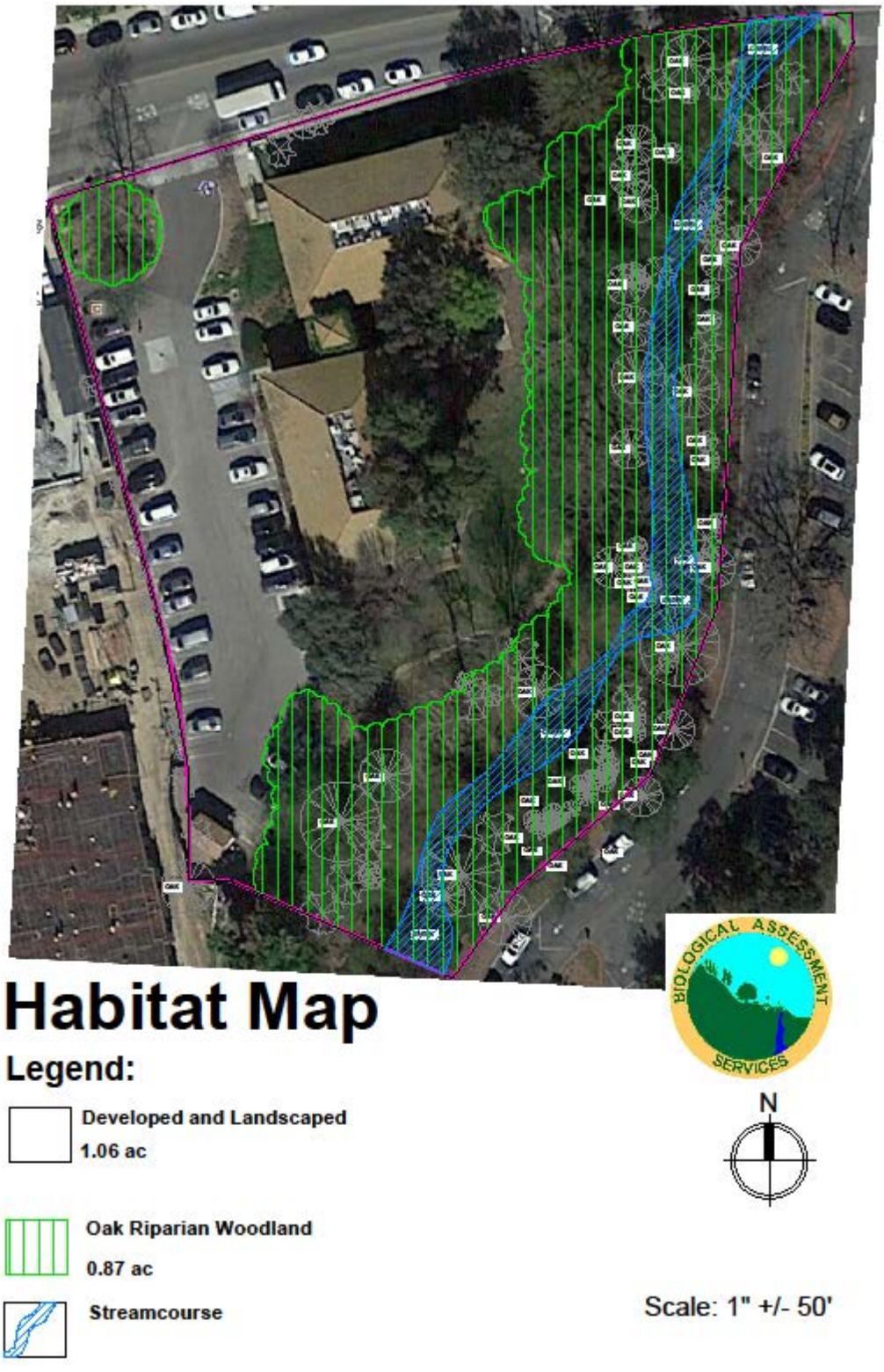
equivalent on the Park Sorrento project site. The RWQCB also asserts jurisdiction over discharge into Waters of the US separately under Section 401 of the Federal Clean Water Act. California Department of Fish and Wildlife (CDFW) jurisdiction includes and often extends beyond USACE jurisdiction, encompassing the streambed and bank, riparian vegetation adjacent to the stream, and the canopies of the coast live oaks and other various trees that overhang the stream, are dependent on the stream or affect the water quality of the stream. CDFW jurisdictional area is equivalent to the oak riparian woodland at 0.87 acres onsite. The streamcourse and riparian habitat are illustrated on the habitat map.

Oak Trees

An oak tree survey was also conducted on the project site. All of the surveyed trees have a diameter breast height (DBH; 4.5 feet above the natural grade surrounding the tree) of two (2) inches or greater. Oaks with a DBH of less than two inches, but more than one inch, were located and mapped. Each tree was assigned three letter grades, one health and one aesthetic rating as required by the City, and an overall grade that incorporates ecological value in addition to health and aesthetic values. The health and aesthetic rating of the trees are based on the guidelines established in the City of Calabasas Oak Tree Preservation and Protection Guidelines. The overall grade of each tree was determined through a subjective evaluation of its health, aesthetic value, and ecological value.

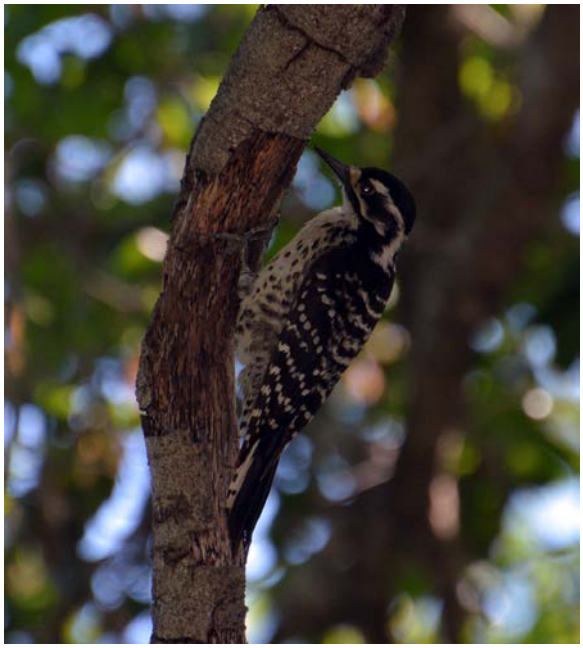
There are 52 coast live oaks (*Quercus agrifolia*) and 12 valley oaks (*Quercus lobata*) of ordinance size on the project site, totaling 64 oak trees. Note that at least two oak trees not discussed in the oak tree report are mapped on the oak tree map included in the report. Please refer to the oak tree report prepared for the project (Greeley, 2015) for details regarding the oak tree survey and results.

Figure 2 Habitat Map



Wildlife

Most wildlife species are not restricted to a single plant community, occurring instead in several communities, especially those of similar species composition and physical structure. However, some animals, birds and wide-ranging mammals in particular, may utilize an array of dissimilar communities for forage and cover. Most animals found onsite during the present survey are common, widespread, and highly adaptable species. Wildlife species recorded as occurring on the project site include both those species that were observed and those whose occurrence can be deduced due to the presence of diagnostic sign on the site. All vertebrates recorded or expected to occur on the project site are listed in APPENDIX 2: FLORAL AND FAUNAL COMPENDIUM.



Nuttall's Woodpecker Onsite

Wildlife species observed during the site survey were limited because of the large percentage of the site that has been developed. Birds were the most evident and abundant form of fauna observed onsite, especially in the coast live oaks in the riparian area and large ornamental trees that occur within the landscaped area onsite. Acorn (*Melanerpes formicivorus*) and Nuttall's (*Picoides nuttallii*) woodpeckers were observed foraging on the upper trunks of some of the larger trees onsite. Oak titmouse (*Baeolophus inornatus*) and Wilson's warbler (*Wilsonia pusilla*) were seen flitting in the canopies of the oaks in the riparian areas. Mallards (*Anas platyrhynchos*) were found drifting along the stream and red-shouldered hawk (*Buteo lineatus*) and white-throated swifts (*Aeronautes saxatalis*) were observed flying overhead. In the ornamental gardens on the south-side of -the site, Anna's (*Calypte anna*) and rufous hummingbirds (*Selasphorus rufus*) were observed feeding on the flowering plants. Many other birds are expected to occur within the southern coast live oak riparian

forest and landscaped areas onsite as either foraging transients (local or migratory) $^{and}/_{or}$ nesting pairs. Birds likely to nest onsite are the species typically found in association with human development, including American crow (*Corvus brachyrhynchos*), acorn woodpeckers, Anna's hummingbird, and bushtits (*Psaltriparus minimus*) among others.

Two nonnative fish were observed in McCoy Creek: mosquitofish (*Gambusia affinis*) and koi (*Cyprinus carpio*). Observations of amphibians occurring onsite were limited to two species: Pacific treefrog (*Pseudacris regilla*) and the nonnative American bullfrog (*Rana catesbeiana*). The treefrog was found on the north bank of the stream and the bullfrog was observed several times leaping from streamside basking areas into the stream. Other amphibians expected to occur onsite include black-bellied salamander (*Batrachoseps nigriventris*) and western toad (*Bufo boreas*). Western fence lizard (*Sceloperus occidentalis*) was the only representation of reptiles that was observed onsite, but gophersnake (*Pituophis catenifer*) may also occur in the forested area.

The eastern fox squirrel (*Sciurus niger*), was the only mammal directly observed onsite. Several dusky-footed woodrat (*Neotoma fuscipes*) nests, raccoon (*Procyon lotor*) tracks and coyote (*Canus latrans)* tracks were also observed, confirming the presence of these species. Virginia opossum (*Didelphis virginiana*), desert cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*) and striped skunk (*Mephitis mephitis*) are also expected to occur onsite.


Eastern Fox Squirrel Onsite

Sensitive Biological Resources

Sensitive biotic resources reported in the project vicinity and their known or expected status onsite are discussed in this section. The status of each resource was determined by consideration of: known preferred ecologic parameters and direct observation for plants, known habitat preferences and direct observation for faunal components, and direct observation for habitat types.

There are more than 109 sensitive biological resources reported to occur in the vicinity, among these are species that are not considered in immediate danger of extirpation but local experts have noted apparent signs of decline and have placed them on watch lists. Others have no possibility of occurring onsite as they are limited to specific localized habitat types such as coastal dunes or salt marshes. After removing most of the lower sensitivity resources and those that could not occur onsite, there are 107 biological resources in the vicinity that are either high ranking in sensitivity or could occur onsite. Fifty-one (51) of these are plants, 44 are wildlife, and 14 are habitat types. Of these, six (6) sensitive bird species are known to occur on the site. Several habitat types protected under City, State and Federal legislation or policies occur on the project site. These include riparian habitats, streamcourses, and mature trees, especially oaks. This determination is based on local knowledge of BAS biologists and searches of appropriate references and databases. Sources used for the determination of sensitive biological resources and their potential presence onsite are as follows: **wildlife** - U.S. Fish and Wildlife Service (FWS) (2016), California Department of Fish and Wildlife (1980, 1989,) California Natural Diversity Data Base (CNDDB 2016), and Remsen (1978); **plants** - FWS (2016), CDFG(W) (1989, 2016), CNDDB (2016), and California Native Plant Society (CNPS, 2016) (Smith and Berg 1988); and **habitats** - CNDDB (2016) and Holland (1986). Table 1 below includes each of the sensitive biotic resources reported in the vicinity, its status with the above agencies, and its expected occurrence onsite. A detailed analysis of each species is found in Appendix 1 of this report – Sensitive Species Evaluations.

Table 1
SENSITIVE BIOLOGICAL RESOURCES IN THE
PARKWAY CALABASAS SITE VICINITY

COMMON NAME	SCIENTIFIC NAME	PRESENCE ONSITE	FWS	CDFW	CNPS PIF
Plants					
Western Spleenwort	*Asplenium vespertinum*	N	--	--	4.2
Braunton's Milk-vetch	*Astragalus brauntonii*	N	E	--	1B
Ventura Marsh Milk-vetch	*Astragalus pycnostachyus* var. *lanosissimus*	N	E	E	1B
Coastal Dunes Milk-vetch	*Astragalus tener* var. *titi*	N	E	E	1B
Coulter's Saltbush	*Atriplex coulteri*	N	--	--	1B
South Coast Saltscale	*Atriplex Pacifica*		--	--	1B.2

Table 1
SENSITIVE BIOLOGICAL RESOURCES IN THE
PARKWAY CALABASAS SITE VICINITY

COMMON NAME	SCIENTIFIC NAME	PRESENCE ONSITE	FWS	CDFW	CNPS PIF
Parrish's Brittlescale	*Atriplex parishii*	N	--	--	1B
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	N			1B.2
Malibu Baccharis	*Baccharis malibuensis*	N	--	--	1B
Brewer's Calandrinia	*Calandrinia breweri*	N	--	--	4.2
Round-leaved Filaree	*California macrophylla*	N	--	--	2
Catalina Mariposa Lily	*Calochortus catalinae*	N	--	--	4.2
Club-haired Mariposa Lily	*Calochortus clavatus* var. *clavatus*	N	--	--	4.3
Slender Mariposa Lily	*Calochortus clavatus* var. *gracilis*	N	--	--	1B
Late-flowered Mariposa Lily	*Calochortus fimbriatus*	N	--	--	1B.3
Plummer's Mariposa Lily	*Calochortus plummerae*	N	--	--	1B
Peirson's Morning-glory	*Calystegia peirsonii*	N	--	--	4.2
Lewis' Evening-primrose	*Camissoniopsis lewisii*	N	--	--	3
Southern Tarplant	*Centromadia parryi* ssp. *australis*	N	--	--	1B
Island Mountain-mahogany	*Cercocarpus betuloides var. blancheae*	N	--	--	4.3
Salt Marsh Bird's-beak	*Chloropyron maritimum ssp. maritimum*	N	E	E	1B
San Fernando Valley Spineflower	*Chorizanthe parryi* var. *fernandina*	N	C	E	1B
Parry's Spineflower	*Chorizanthe parryi* var. *parryi*	N	--	--	3
Small-flowered Morning-glory	*Convolvulus simulans*	N	--	--	4.2
Santa Susana Tarplant	*Deinandra minthornii*	N	--	R	1B
Dune Larkspur	*Delpinium parryi* ssp. *blochmaniae*	N	--	--	1B
Western Dichondra	*Dichondra occidentalis*		--	--	4.2
Beach Spectacledpod	*Dithyrea maritime*	N	--	T	1B
Slender-horned Spineflower	*Dodecahema leptoceras*	N	E	E	1B
Blochman's Dudleya	*Dudleya blochmaniae* ssp. *blochmaniae*	N	--	--	1B
Agoura Hills Dudleya	*Dudleya cymosa* ssp. *agourensis*	N	T	--	1B
Marcescent Dudleya	*Dudleya cymosa* ssp. *marcescens*	N	T	R	1B
Santa Monica Mountain Dudleya	*Dudleya cymosa* ssp. *ovatifolia*	N	T	--	1B
Many-stemmed Dudleya	*Dudleya multicaulis*	N	--	--	1B
Conejo Dudleya	*Dudleya parva*	N	T	--	1B
Conejo Buckwheat	*Eriogonum crocatum*	N	--	R	1B
Palmer's Grapplinghook	*Harpogonella palmeri*	N	--	--	4.2
Vernal Barley	*Hordeum intercedens*	N	--	--	3.2
Decumbent Goldenbush	*Isocoma menziesii* var. *decumbens*	N	--	--	1B.2
Southern California Black Walnut	*Juglans californica*	N	--	--	4.2
Southwestern Spiny Rush	*Juncous acutus ssp leopoldii*	N	--	--	4.2
Fragrant Pitcher Sage	*Lepichinia fragrans*	N	--	--	4.2
Coulter's Goldfields	*Lasthenia glabrata* ssp. *coulteri*	N	--	--	1B.1
Ocellated Humboldt lily	*Lilium humboldtii* ssp. *ocellatum*	N	--	--	4.2
Ojai Navarretia	*Navarretia ojaiensis*	N			1B.1
Mud Nama	*Nama stenocarpum*	N	--	--	2
Chaparral Nolina	*Nolina cismontane*	N	--	--	1B
California Orcutt Grass	*Orcuttia californica*	N	E	E	1B

Table 1
SENSITIVE BIOLOGICAL RESOURCES IN THE
PARKWAY CALABASAS SITE VICINITY

COMMON NAME	SCIENTIFIC NAME	PRESENCE ONSITE	FWS	CDFW	CNPS PIF
Lyon's Pentachaeta	*Pentachaeta lyonii*	N	E	E	1B
Salt Spring Checkerbloom	*Sidalcea neomexicana*	N	--	--	2
Sonoran Maiden Fern	*Thelypteris puberula* var. *sonorensis*	N	--	--	2
Invertebrates					
Riverside Fairy Shrimp	*Streptocephalus woottoni*	N	E	--	--
Tengellid Spider	*Socalchemmis gertschi*	N	--	--	--
Santa Monica Shieldback Katydid	*Neduba longipennis*	N	--	--	--
Santa Monica Grasshopper	*Trimerotropis occidentaloides*	N	--	--	--
Sandy Beach Tiger Beetle	*Cicindela hirticollis gravida*	N	--	--	--
Globose Dune Beetle	*Coelus globosus*	N	--	--	--
Crotch Bumble Bee	*Bombus crotchii*	N	--	--	--
Monarch Butterfly (roosting)	*Danaus plexippus*	N	--	--	--
Quino Checkerspot	*Euphydryas editha quino*	N	E	--	--
Fish					
Tidewater Goby	*Eucyclogobius newberryi*	N	E	--	--
Arroyo Chub	*Gila orcutti*	N	--	SC	--
Southern Steelhead	*Oncorhynchus mykiss irideus*	N	E	--	--
Amphibians					
Western Spadefoot	*Spea hammondii*	N	SC	SC	--
Arroyo Toad	*Anaxyrus californicus*	N	E	SC	--
California Red-legged Frog	*Rana aurora draytonii*	N	T	SC	--
Reptiles					
Southwestern Pond Turtle	*Actinemys marmorata pallida*	N	SC	SC	--
Coast (San Diego) Horned Lizard	*Phrynosoma coronatum blainvillei*	N	--	SC	--
Coastal Western Whiptail	*Aspidoscelis tigris stejnegeri*	N	--	SC	--
Southern Cal. Legless Lizard Fmr. Silvery legless Lizard	*Aniella stebbensi* (*A. pulchra pulchra*)	P	--	SC	--
Coast Patch-nosed Snake	*Salvadora hexalepis virgultea*	N	--	SC	--
San Diego Mountain Kingsnake	*Lampropeltis zonata pulchra*	N	--	SC	--
Two-striped Garter Snake	*Thamnophis hammondii*	P	--	SC	--
San Bernardino Ring-necked Snake	*Diadophus punctatus modestus*	P	--	--	--
Birds					
Golden Eagle	*Aquila chrysaetos*	N	FP	SC	--
Cooper's Hawk	*Accipiter cooperii*	O	--	W	
Sharp-shinned Hawk	*Accipiter striatus*	V	--	W	
Burrowing Owl	*Athene cunicularia*	N	SC	SC	--
White-throated Swift	*Aeronautes saxatalis*	O-T	--	--	T&D
Rufous Hummingbird	*Selasphorus rufus*	O-T	--	--	T&D
Nuttall's Woodpecker	*Picoides nuttallii*	O	--	--	RR
Least Bell's Vireo	*Vireo bellii pusillus*	N	E	E	T&D
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	P	E	E	
Bank Swallow	*Riparia riparia*	N	--	T	--
Oak Titmouse	*Baeolophus inornatus*	O	SLC	--	T&D
Coastal California Gnatcatcher	*Polioptila californica californica*	N	T	SC	RR
Yellow-breasted Chat	*Icteria virens*	U	--	SC	

Table 1
SENSITIVE BIOLOGICAL RESOURCES IN THE
PARKWAY CALABASAS SITE VICINITY

COMMON NAME	SCIENTIFIC NAME	PRESENCE ONSITE	FWS	CDFW	CNPS PIF
Yellow Warbler	*Setophaga petechia*	O	--	SC	
Grasshopper Sparrow	*Ammodramus savannarum*	N	--	SC	
Bell's Sage Sarrow	*Artemisiospiza belli belli*	N	--	W	
Southern California Rufous-crowned Sparrow	*Aimophilia ruficeps canescens*	N	--	SC	--
Brewer's Sparrow	*Spizella breweri*	N			
Tricolored Blackbird	*Agelaius tricolor*	N	--	SC	RR
Mammals					
American Badger	*Taxidea taxus*	N	--	--	--
San Diego Desert Woodrat	*Neotoma lepida intermedia*	N	--	SC	--
Habitats					
California Walnut Woodland	--	N	--	--	--
Cismontane Alkali Marsh	--	N	--	--	--
Southern California Coastal Lagoon	--	N	--	--	--
Southern California Steelhead Stream	--	N	--	--	--
Southern Coast Live Oak Riparian Forest*	--	O	--	--	--
Southern Coastal Salt Marsh	--	N	--	--	--
Southern Cottonwood Willow Riparian Forest	--	N	--	--	--
Southern Mixed Riparian Forest	--	N	--	--	--
Southern Riparian Scrub	--	N	--	--	--
Southern Sycamore Alder Riparian Woodlands	--	N	--	--	--
Southern Willow Scrub	--	N	--	--	--
Valley Needlegrass Grassland	--	N	--	--	--
Valley Oak Woodland*	--	N	--	--	--
Streamcourses**	--	O	--	--	--

FOOTNOTES FOR SENSITIVE BIOLOGICAL RESOURCES -- Table 1

OCCURRENCE
- O Species **O**ccurs onsite.
- O-T Species **O**ccurs onsite as a **T**ransient
- V Species **V**ery likely occurs onsite.
- P-T Species **P**ossibly Occurs onsite as a **T**ransient
- P Species **P**ossibly may occur onsite.
- U Species is **U**nlikely to occur onsite.
- N **N**o occurrence onsite.

STATUS
- E **E**ndangered; Species is in immediate danger of extirpation or extinction from existing pressures.
- SC **S**pecies of **C**oncern, formerly a candidate for federal listing but that category was eliminated but these species are thought to warrant special attention due to suspected declines.
- 3A Species withdrawn from candidacy for federal listing; believed to be extinct.
- 3B Species withdrawn from candidacy for federal listing; believed not to be taxonomically valid given current information.
- 3C Species withdrawn from candidacy for federal listing; proven to be more widespread than previously believed and/or not subject to any identifiable threat.

FP **F**ully **P**rotected by special ordinance or statute.

CT / CE State candidate for listing as threatened (T) or Endangered (E).

PT **P**roposed **T**hreatened; Species for which a proposed rule to list as endangered or threatened has been published in the Federal Register (exclusive of taxa for which the proposed rule has been withdrawn or finalized).

T **T**hreatened; Species not presently threatened with extinction, but is likely to become an Endangered species in the foreseeable future in the absence of special protection and management efforts.

1A CNPS Priority List 1A; plant presumed extinct in CA.

1B CNPS Priority List 1B; plant Rare, Threatened, or Endangered in CA and elsewhere; eligible for State listing.

2 CNPS Priority List 2; plant rare, threatened, or Endangered in CA, but more common elsewhere; eligible for state listing.

3 CNPS Priority List 3; more information is needed about this species.

4 CNPS Priority List 4; on watch list for plants of limited distribution.

* CA has no authority to legally list invertebrate species; however, a legal agreement (1988) requires the state to monitor the status of federally listed species for threats of extinction and/or extirpation.

m Though not protected by the state or federal government, oaks are protected by a number of local ordinances and are invariably defended vehemently by public and private special interest groups.

SC CDFW Species of **S**pecial **C**oncern; native species not having state or federal Threatened or Endangered Species status, but thought to warrant monitoring due to declining population numbers. Includes those species tracked in the CNDDB but not given any other special status.

SLC **S**pecies of **L**ocal **C**oncern as reported in the FWS Sacramento region's Species of concern list.

CSC1 CDFW Species of Special Concern, Highest Priority; species appears to face a high probability of extinction or extirpation from their entire geographic range in CA if current trend continues.

c CDFW Species of Special Concern, Second Priority; population is definitely in jeopardy and declining, but the threat of extinction or extirpation is not immediate.

d CDFW Species of Special Concern, Third Priority; species does not appear to face extinction soon, but populations are declining seriously or they are otherwise highly vulnerable to human developments.

FSS **F**ederal (Bureau of Land Management and US Forest Service) **S**ensitive **S**pecies.

CNDDB ranks are shorthand formulas that provide information on the rarity of a species or subspecies, both throughout its global range and its range within the State. We use the best information available to assign these ranks and they are regularly updated as new information becomes available.

GLOBAL RANKS: Worldwide status of a full species: G1 to G5

G1 = Extremely endangered: <6 viable occurrences (EO's) or <1,000 individuals, or < 2,000 acres of occupied habitat

G2 = Endangered: about 6-20 EO's or 1,000 - 3,000 individuals, or 2,000 to 10,000 acres of occupied habitat

G3 = Restricted range, rare: about 21-80 EO's, or 3,000 – 10,000 individuals, or 10,000 – 50,000 acres of occupied habitat

G4 = Apparently secure; some factors exist to cause some concern such as narrow habitat or continuing threats

G5 = Demonstrably secure; commonly found throughout its historic range

STATE RANKS: Statewide status of a full species or a subspecies: S1 to S5

Same general definitions as global ranks, but just for the range of the taxa within California.

T-RANKS: Status of a subspecies throughout its range: T1 to T5

A subspecies is given a T-rank. This is attached to the G-rank for the full species. The S-rank, in this case, will refer to the status of the subspecies within California. The T-rank has the same general definitions as the global ranks.

Partners in Flight (PIF) watch list is produced by a coalition of non governmental organizations including the National Audubon Society, American Bird conservancy, American Birding Association, National Fish and Wildlife Foundation, Colorado Bird Observatory, Cornell Lab of Ornithology and others. Watched species are those that are faced with population decline, limited geographic range, and/or threats such as habitat loss on their breeding and wintering grounds. The list excludes species listed under the ESA. The PIF watch list Continental threat ranks are categorized as follows:

Urbanization (U)
Changing Forest Conditions (F)
Tropical Deforestation (T)
Climate Change (Cl)
Agricultural Conversion (A)
Changing Rangeland Conditions (R)

Energy/Resource Extraction (E)
Contaminants (Co)
Disease (D)
Invasive Species (I)
Hunting/Trapping (H)

W **W**atch List; Location information for this species not computerized. The CNDDB is currently collecting distribution information.

* Protected by County Ordinance (all oak species)

** Protected by CDFG Code Chapter 1600 and Section 404 of the Clean Water Act (U.S. Army Corps of Engineers (USACE).

Vegetation

None of the 51 listed sensitive plant species that have been recorded by CNDDB $^{and}/_{or}$ CNPS in the vicinity of the project site were observed during the surveys. None of the listed sensitive plant species is thought to occur or possibly occur on the project site. This determination was made by post-survey analysis using the data gathered during the surveys in conjunction with the known ecological requirements (habitat, soil, aspect, elevation, etc.) of each of the listed plants. The majority of the site has been developed or landscaped, and the naturally occurring habitats onsite have been degraded due to the proximity of human activity and the introduction of nonnative plant species.

Wildlife

The following discussion provides a brief summary of the results of detailed analysis made for each of the sensitive wildlife species known to occur in the project vicinity. For a more complete analysis please refer to Appendix 1.

No wildlife species listed as Threatened or Endangered is thought to occupy the project site. The Southwestern willow flycatcher may occur on the site as a transient. As illustrated in Table 1, six (6) sensitive wildlife species are known to occur on the site. These are all Partners in Flight Watchlist species. Each of these species either occupies the site as a transient or is a year round resident on the site. These were identified by direct observation.

The oak titmouse and Nuttall's woodpecker were both observed onsite and because the preferred habitat of both species (oaks) occur onsite, it is believed that both species are year-round residents on the project site. The yellow warbler was observed onsite and could nest there. This summer resident of the area prefers riparian habitats for breeding and migrates to tropical climates for the winter. The rufous hummingbird and white-throated swift were observed on the project site, but have been classified as occurring as transients. The rufous hummingbird primarily occurs in Southern California as a winter resident or as a transient during the fall and spring migration. The breeding range for the species is from northern California to southern Alaska. The white-throated swift occurs as a year-round resident in Southern California, but the appropriate nesting habitat (cliff

walls and ledges) does not occur on this site. The white-throated swift will utilize the airspace over the site for foraging. The Cooper's hawk was observed on the site hunting smaller birds. The Cooper's hawk has not been observed nesting on the site but the habitat is appropriate for nesting Cooper's hawk. The sharp-shinned hawk has much the same dietary and habitat requirements as the Cooper's hawk and it is likely that the sharp-shinned hawk also hunts on the site, but that has not been observed.

Two sensitive reptile species may possibly occur on the site: two-striped garter snake and San Bernardino ring-necked Snake. McCoy Creek and the southern coast live oak riparian forest are appropriate habitat for these species. In addition, the mosquitofish, Pacific treefrog, and the tadpoles of American bullfrog are all prey species for the garter snake and the ring-necked snake preys upon small terrestrial creatures found in the undergrowth and leaf litter, especially salamanders.

Habitats

Southern coast live oak riparian forest is the one (1) sensitive habitat, as listed by CNDDB, which occurs onsite. The habitat occupies 0.87 acres of the site along the stream that runs along the southern and eastern portions of the site. Coast live oaks are the dominant plant species, typically occurring in dense stands that limit the amount of sunlight available to the understory components of the habitat. Southern coast live oak riparian forest, like most riparian habitats are in rapid decline in southern California due to development.

Streamcourses

Often with only seasonal surface water in Southern California, streamcourses are becoming increasingly rare due to the pressures of development. As a result, the California Department of Fish & Game Code Chapter 1600 and Sections 401, 402, and 404 of the Clean Water Act stringently protect these areas. McCoy Creek is considered "Waters of the U.S." by the U.S. Army Corps of Engineers (USACE), which administers Section 404. Impacts to the streambed, bank, and associated riparian vegetation are regulated by the CDFW, which administers the Fish and Game Code. The Regional Water Quality Control Board regulates discharge into "Waters of the US" under Section

401 of the Clean Water Act and "Waters of the State" under the Porter-Cologne Water Quality Act.

Wildlife Movement Corridors

A wildlife corridor is a strip of land that connects two, or more, larger land areas and is free of barriers that would seriously curtail or prevent wildlife passage. These corridors can serve as useful habitat in their own right, or can serve as travel lanes for seasonal movements of wildlife. Their value depends upon width, habitat type and structure, nature of surrounding habitat, human use patterns, and other factors. Typically, a wildlife corridor provides refuge and ease of movement, and often follows ridgelines or drainages. Wildlife movement corridors are important for the free movement of animals between population centers, for access to food and water sources during drought, as escape routes from brush fires, and, in the longer term, for dispersal of genetic traits between population centers.

Urban development fragments natural habitats into smaller and more isolated units. In the process, it destroys habitat of many species, modifies habitat of others, and creates new habitat for some (Adams and Dove, 1989). Many studies have indicated that, in general, habitat size is the most important factor in determining land vertebrate species diversity (Adams and Dove 1989). The degree of habitat isolation and percentage of vegetative cover are other major factors in species variety and abundance.

Genetic dispersion is the key factor in maintaining viable wildlife and plant populations as they become more and more fragmented. The smaller the population (as in populations isolated by development), the greater is the likelihood of inbreeding. Inbreeding allows harmful recessive alleles to be paired together, thereby manifesting the trait. Without the presence of the dominant allele that would mask an otherwise fatal inherited disease, the recessive allele for that disease could become predominant in the isolated population, resulting in the eventual extinction of that population. Wildlife corridors can prevent local extinctions by connecting relatively small open space

preserves, thereby allowing gene flow and providing for a wide diversity of genetic traits throughout the interconnected populations.

The site does not function as a part of a regional wildlife movement because it is generally isolated away from large blocks of natural open space or native wildlife habitat. Residential and commercial developments are located north of the project site, and across Park Sorrento, with the 101 Freeway ¼ mile further. A tennis club and commercial complex are located to the east of the site's boundaries, and another commercial complex is located to the west. Beyond the McCoy Creek to the south is a residential development that features waterfront properties around a manmade lake. The only possible connection to large blocks of open space is along McCoy Creek to the southeast. This connection is obstructed partially by several roads and animals traversing it would reach a dead-end at the project site

ENVIRONMENTAL IMPACTS

Anticipated impacts of the proposed project are presented. Thresholds of significance for the anticipated impacts are determined by interpretation of the CEQA Guidelines as presented below. Those impacts requiring mitigation are numbered to correspond with numbered mitigation measures. Mitigation measures are proposed to reduce impacts not found to be significant and/or to reduce impacts that are considered significant to levels of less than significant.

Threshold of Significance

Pursuant to Appendix G of CEQA Guidelines, a significant impact to biological resources would result if the project would:

T-1 Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Services.

T-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Services.

T-3 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

T-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

T-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

T-6 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Project Impacts

The primary impact of the proposed project would be the direct removal of onsite portions of a sensitive plant community and the wildlife habitat that it represents. Degradation of remaining natural areas after project implementation would constitute a secondary project impact. There is a potential for secondary impacts to the biotic resources remaining onsite after project completion. These impacts may be direct, such as removal by the new occupants, or indirect such as the poisoning of native plants with herbicides or fertilizers used in landscaping. Other secondary impacts include degradation of the remaining natural habitats by the introduction of exotic plants into the natural environment through nonnative landscaping. The native vegetation that remains within the planning areas or along the perimeter of the project might be adversely impacted by various project associated grading activities such as deposition of dust on vegetation.

Impacts to Habitat

I-1 Loss of Southern Coast Live Oak Riparian Forest - Approximately 0.15 acres (17 %) of southern coast live oak riparian forest habitat is within or hanging over the project grading limits. When the additional 0.083 ac (approximately 10%) that is located within the 10-foot buffer zone is added, the total impact figure, based solely on grading limits, is 0.23 ac or approximately 27% of the oak riparian woodland present. Figure 3 HABITAT IMPACT MAP illustrates proposed impacts to habitat by implementation of the Park Sorrento project. Because this habitat is increasingly rare, and because it is considered riparian, any impacts to the habitat are considered significant on a project level unless mitigation measures are implemented. Any permanent loss of this habitat is considered cumulatively significant under CEQA. Please note that the oak on the Northwest corner of the project site will be removed, and has been mapped as part of the oak riparian woodland, but this is not a riparian tree. This tree is not included in the calculations of riparian woodland impacts.

I-2 Loss of Oak Trees – The project's oak tree report notes that project development would result in impacts to 8 ordinance sized oak trees onsite: 1 removal, 7

encroachments from grading. The loss of oaks is considered significant in the City of Calabasas and is regulated by the City's oak tree ordinance. An oak tree report has been prepared for the project and a detailed account of oak impacts is available in that report. The loss of individual oaks is considered significant unless mitigation is undertaken. Please refer to the oak tree report prepared for the project for details regarding the oak tree survey results and proposed mitigation measures.

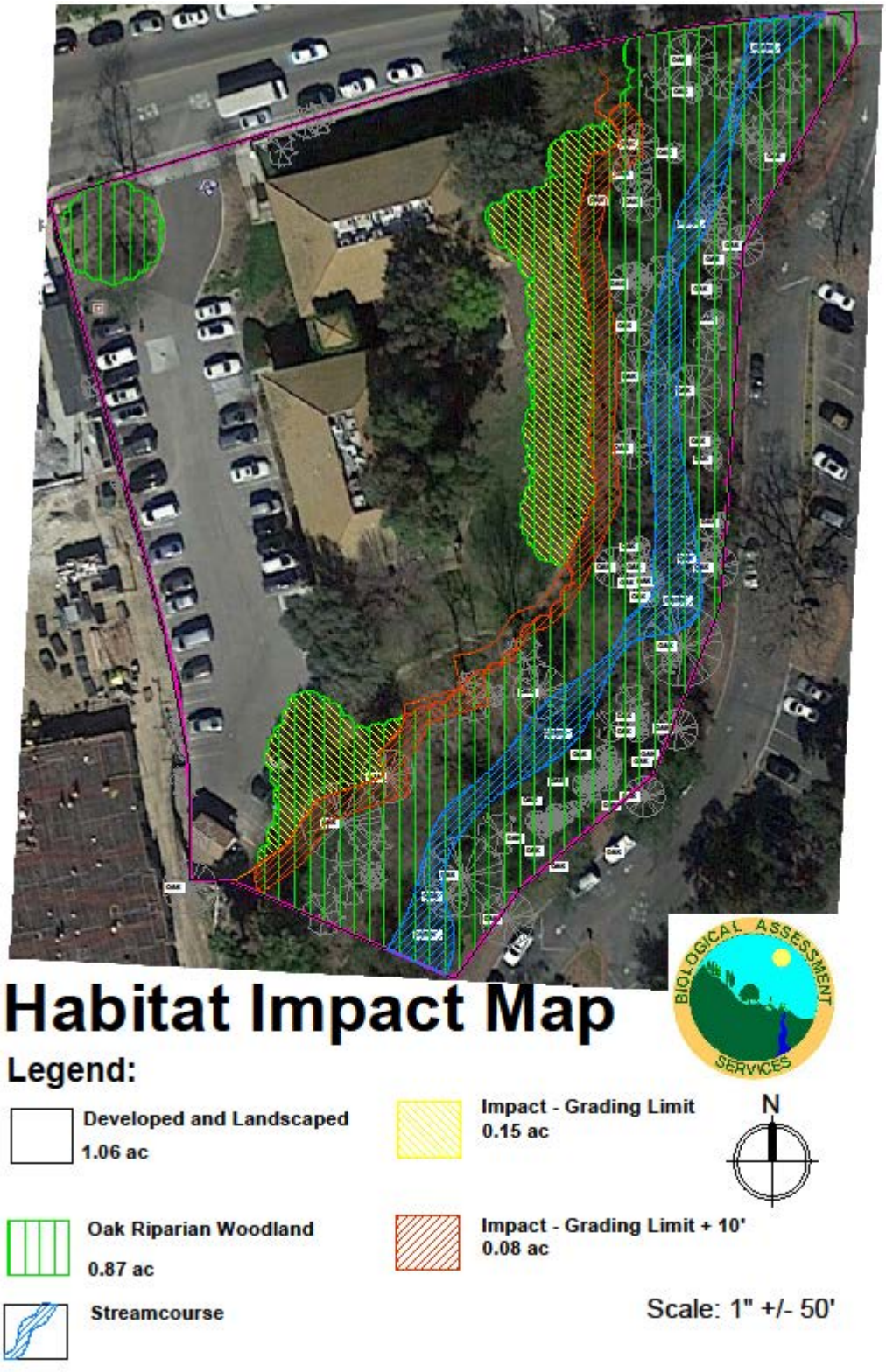
While analyzing impact to oak riparian woodland several discrepancies were discovered between the habitat analysis and the oak tree report. The first is that two trees that may be impacted appear on the tree location map but are not noted in the report. These are trees number 124 and 126. Another discrepancy has more to do with interpretation of potential impacts. When a conservative 10-foot buffer is added to the grading limits of the project, several additional trees would be impacted, including three additional removals and two additional encroachments.

I-3 Loss of Developed Areas - The developed areas onsite do not support sensitive native flora or fauna, and do not function as a part of the natural ecosystem of the area. The redevelopment of developed area on the site is not significant.

I-4 Loss of Landscaped Habitats – Landscaped vegetation does not function as a part of the natural ecological system in the area, and the grading resulting in impacts to this habitat is not significant. It is assumed that the development will replace this loss as a normal part of suburban development and landscaping.

I-5 Loss of CDFW Jurisdictional Habitat – McCoy Creek streambed would not be altered by the project, so none of the USACE's "Waters of the US" or waters within RWQCB jurisdiction would be impacted. Portions of the of the oak riparian woodland habitat (southern coast live oak riparian forest) encompassing the creek, falling under CDFW jurisdiction, would be impacted by the project. These would result in the loss of approximately 0.15 acres (17 %) of southern riparian oak woodland.

Figure 3 Habitat Impact Map



Impacts to Wildlife

Construction would temporarily and permanently impact potential habitat in the development area and reduce the viability of the rest of the site as wildlife habitat. Upon project completion, and assuming the implementation of mitigation measures, wildlife species will return to the remaining natural habitat on the site. Among the native members of the Southern California fauna known for their ability to thrive near human habitation are the western fence lizard, coyote, raccoon, and several bird species.

Landscaping around the new development may provide new habitats that could attract some fauna not now present as well as increasing habitat value for some species present or expected onsite. These will principally be introduced species or highly adaptive native species that are tolerant of human disturbance. Among those nonnative species that might experience a population increase caused by the altered environment, and are often considered pests in this category, are the Norway rat (*Rattus norvegicus*), house mouse (*Mus musculus*), spotted dove (*Streptopelia chinensis*), rock pigeon (*Columba livia*), European starling, and house sparrow. Those native species that might experience a population increase caused by the altered environment include the northern mockingbird (*Mimus polyglottos*) and mourning dove (*Zenaida macroura*).

I-6 General Wildlife Mortality – The immediate impact of project implementation would be the direct mortality of species that are unable to escape impacts, specifically impacts that occur in the southern coast live oak riparian forest. Species of low mobility, particularly burrowing reptiles and mammals in the impacted areas of this habitat, might be eliminated by site preparation. This impact is not significant at the project level, but is significant when considered cumulatively without mitigation. No impacts to bats are considered likely because there are not likely any maternity colonies on the project site. Individual bats roosting in trees are expected to relocate if construction activity disturbs them.

I-7 Loss of Nesting Birds Onsite and in Adjacent Areas – If oak trees were removed during residential and migratory bird nesting season, it is possible that direct loss

of young or eggs could occur. Nests could also fail in unimpacted onsite and offsite areas if construction activities were to disrupt nesting behavior. The loss of these species while nesting would be a violation of the California Fish and Game Code and the Migratory Bird Treaty Act. These impacts would be significant independently and cumulatively unless preventative mitigation measures are taken.

I-8 Wildlife Habitat Loss – Those species that are able avoid construction activities will be impacted by the loss of southern coast live oak riparian forest they previously occupied. Many species can be expected to move to adjacent areas of similar habitat. Wildlife that does emigrate is subject to mortality by predation and unsuccessful competition for food and territory, decreasing chances for survival. This impact is considered significant at the project level and cumulatively unless mitigation for the habitat loss is implemented.

I-9 Impacts of Litter – The completed project could potentially result in an increase in the amount of litter deposited on the site and in surrounding natural areas. Aside from being an eyesore, litter is detrimental to wildlife for a variety of reasons. Many larger animals will attempt to eat the remnants of food products often associated with litter and in the process ingest plastic and other inedible and potentially fatal products. Many smaller animals and birds will use various inorganic litter products for nesting materials with potentially fatal results to their young. The impact of litter on local wildlife is not significant on a project level. Cumulatively, the impact of litter on wildlife is significant. Additionally, if litter results in the mortality of a sensitive species, that impact would be considered independently significant.

I-10 Night Lighting – Increased night lighting may be detrimental to animals in the onsite and offsite southern coast live oak riparian forest habitat for a variety of reasons. These include disruption of circadian rhythms and avoidance due to light sensitivity in species with exceptional night vision. Some insectivorous species benefit from night lighting because it attracts and concentrates large numbers of

insects for feeding purposes. However, the typical net effect of lighting is that adjacent areas are utilized by wildlife to less than their fullest extent. The impact of increased night lighting is not significant on a project level and the incremental increase in night lighting resulting from the proposed project would not significantly contribute to the cumulative impacts on night lighting in the region. However, regionally, the cumulative impact of night lighting on wildlife is significant.

Impacts to Sensitive Biological Resources

I-11 Downstream Impacts – The location of the project site in the Los Angeles River watershed means that any aspect of project implementation that affects the stream onsite may also affect the entire downstream waters. Indirectly, downstream habitats could be affected by development construction and the resulting community, both of which could produce by-products that would eventually impact the Los Angeles River. The result of this could be a significant alteration of the biochemistry of the creek, which would hinder efforts being proposed by the City of Los Angeles to revitalize the water quality of the Los Angeles River. Construction activities and community development present several potential sources for water quality degradation in the stream including the following:

a) Construction activities, especially those involving the mixing of mortar and concrete, often result in the production of substantial quantities of sullied waste water which would seriously pollute the creek if it were to be deposited there.

b) Other construction activities that expose the earth and remove vegetation have the potential to increase erosion. Erosion may result in the degradation of downstream water quality, increased siltation, and turbidity.

c) In addition to direct impacts like those above, build-out of the project site will have a number of secondary impacts to the watershed. These include a variety of home activities which are seemingly innocuous but are

ultimately harmful to the environment. The list includes the application of pesticides and fertilizers in gardening, and the disposal or spillage of household cleaning solvents, paints, and automobile fluids (oil, gasoline, etc.) on impervious surfaces. A serious concern over the careless disposal of these household chemicals is that their deposition in the ground, or in areas which will run off the site, will lead to the further contamination of the Los Angeles River and contribute to the continued degradation of the LA and Long Beach Harbor and near shore waters. Without mitigation, the buildup of such toxic materials will be harmful to the wildlife that depends on this water source. The buildup of toxic materials may also occur from streets and other paved areas. This will not pose the same threat to the watershed if runoff is filtered prior to being deposited in the Los Angeles River watershed.

These impacts would be significant on an individual project basis and at the cumulative level unless mitigation measures are implemented.

I-12 Sensitive Wildlife Species Mortality – Three of the six sensitive wildlife species known to occur onsite (Nuttall's woodpecker and oak titmouse) are resident or locally nesting birds and would likely avoid direct mortality if construction did not take place during nesting bird season. If site clearing were to take place within the nesting season of resident bird species, unhatched or unfledged young could be killed or nest failure could occur. This impact would be considered both independently and cumulatively significant under CEQA.

The Cooper's hawk has been observed on the site and could nest there, but nesting has not occurred during the last five years. Should the Cooper's hawk nest onsite, or even in adjacent woodland areas, construction could impact nesting success. If that should happen, the impact would be considered significant.

The two-striped garter snake and San Bernardino ring-necked snake may possibly occur onsite, utilizing McCoy Creek and the undergrowth of the southern coast

live oak riparian forest. The loss or disturbance of these areas could result in the direct mortality of the species.

I-13 Resident Sensitive Wildlife Habitat Loss – The sensitive wildlife species known to occur as residents on the site are Nuttall's woodpecker and oak titmouse. The loss of southern coast live oak riparian forest and individual oaks could decrease the available nesting opportunities and foraging areas onsite for the species. The two-striped garter snake and San Bernardino ring-necked snake may possibly occur onsite, utilizing McCoy Creek and the undergrowth of the southern coast live oak riparian forest. The loss of either of these habitats would limit the sites potential to support individuals of either species. Any loss of habitat for sensitive wildlife species is considered independently and cumulatively significant and would require mitigation.

I-14 Transient Sensitive Wildlife Habitat Loss - The two remaining sensitive wildlife species, rufous hummingbird and white-throated swift, that were observed onsite are considered transients. These species would not suffer direct loss as a result of project implementation, but could be impacted by an incremental loss of habitat. Any loss of habitat for sensitive wildlife species is considered independently and cumulatively significant and would require mitigation.

Cumulative Impacts

Without mitigation development of the project site would contribute to the incremental loss of southern coast live oak riparian forest and the species that are dependent on the habitat. Riparian habitats are rapidly becoming a scarce commodity in the San Fernando Valley and the southern California region. Mitigation will be required in order to obtain the required permits for encroachment or branch trimming in the oak woodland. By definition, this mitigation will result in no permanent, and thus cumulative, impact to the oak woodland and riparian oak woodland resource.

The loss of habitat results in the loss of species that depend on each habitat. Some of these may be common in the habitat or elsewhere in the state. Others may be limited in

distribution to the local biome and there may be few remaining habitat areas or wildlife populations in cismontane southern California. The proposed project will be required, per City ordinance and State regulations, to fully mitigate any native habitat loss. The net result will be no permanent, and thus cumulative, habitat loss.

MITIGATION MEASURES

Proposed mitigation measures include both project specific measures that are designed to eliminate or minimize the expected impacts of the project as enumerated above, and standard general mitigation measures that are intended to offset or minimize unanticipated impacts or impacts not identified as significant. In some cases project specific mitigation measures may include elements that would reduce or offset unanticipated or less than significant impacts.

M-1 To Mitigate the Loss of Individual Oaks and the Loss of Southern Coast Live Oak Riparian Forest (I-1), Loss of Oak Trees (I-2), Wildlife Habitat Loss (I-8), Resident Sensitive Wildlife Habitat Loss (1-13), and Transient Sensitive Wildlife Habitat Loss (I-14) – To eliminate potential unapproved or offsite grading incidents, earth-moving equipment shall be confined to within the approved limits of grading during construction. The limits of grading shall be fenced so that construction equipment does not impact areas outside the approved limits of grading.

Construction is planned in the vicinity of native oaks, and efforts will be exercised to avoid their damage or removal. The City of Calabasas has an oak tree ordinance that stipulates acceptable mitigation for the loss of oaks in the City. The proposed project would necessitate the removal of 3 oaks, the permanent encroachment of 9 oaks. Mitigation measures would be implemented in accordance with the City Ordinance. Please refer to the oak tree report prepared

for the project for details regarding the oak tree survey results and proposed mitigation measures.

M-2 To Mitigate Potential Loss of CDFW Jurisdictional Habitat (I-5) – Any alteration of a streamcourse requires that a Section 1600 Agreement be reached with the California Department of Fish and Wildlife (CDFW). In order to reach a 1600 Agreement, CDFW will require mitigation for the riparian habitat lost and the stream course area affected. This mitigation may include one or a combination of the following measures: 1) The onsite creation of at least an equal amount of equal quality riparian habitat; 2) Enhancement of quality onsite riparian habitat, usually on a greater than 1:1 habitat lost to habitat enhanced ratio; 3) Creation of offsite riparian habitat where none currently exists. 4) Preservation of offsite riparian habitat by direct purchase of payment of an in-lieu fee to the Santa Monica Mountains Conservancy or similar organization. 5) Payment of an in-lieu fee to the CDFW or U.S. Forest Service Nonnative Invasive Plant Removal (riparian enhancement) program. All mitigation measures involving the creation of riparian habitat should be self-sustaining and utilize natural water supplies.

If the area available for onsite riparian habitat creation is inadequate, one, or a combination of, the offsite mitigation options must be used. Generally, the CDFW prefer local mitigation, the closer to the impact location the better. Usually the farther the mitigation site is from the impact site, the higher the mitigation ratio.

Project plans include the removal of nonnative vegetation from the stream banks and adjacent slopes. The nonnative vegetation that is removed will be replaced with native species appropriate for stream banks and oak understory. In addition, and oak branches trimmed will be mitigated in accordance with the City's oak tree ordinance as described. The nonnative removal plan and native restoration proposed for the project will be consistent with the McCoy Creek Restoration Plan for the City of Calabasas (Edaw, 2003).

If these mitigation measures are implemented, the impacts to CDFW jurisdictional areas will be reduced to a level of less than significant.

M-3 To Reduce General Wildlife Mortality (I-6) and Sensitive Wildlife Species Mortality (I-12) - Prior to the initiation of grading, biologists will attempt to capture and relocate all reptiles (including any two-striped garter snakes and San Bernardino ring-necked snakes) within the impact area. Other ground dwelling wildlife, i.e. amphibians and mammals, will be relocated if the opportunity presents itself. Wildlife will be relocated to preserved areas of the site when appropriate or to nearby (in the same watershed) permanent open space areas. It is assumed that a two-person team can adequately salvage the reptiles in one day.

If these mitigation measures are implemented, the impacts to wildlife mortality and sensitive wildlife species mortality will be reduced to a level of less than significant.

M-4 To Reduce or Eliminate Impacts to Nesting Birds Onsite and in Adjacent Areas (I-7) and Sensitive Wildlife Species Mortality (I-12) - To prevent the take of nesting native bird species (including the sensitive bird species) all clearing and grubbing of the project site shall take place between August 15 and February 15. Winter site clearing will insure that nesting birds are not present and impacted. If construction is scheduled or ongoing near the perimeter of the grading footprint during bird nesting season (February 15 to August 15), qualified biologists will survey the area within 200 feet (or up to 300 feet depending on topography or other factors and 500 feet for raptors) of the grading activity to determine if grading is disturbing nesting birds. If nesting activity is being compromised, construction will be suspended in the vicinity of the nest until fledging is complete.

If these mitigation measures are implemented, the impacts to nesting birds onsite and in adjacent areas will be reduced to a level of less than significant.

M-5 To Reduce the Impacts of Litter (I-12) - CC&Rs will be established ensuring that maintenance crews will be responsible for the removal of litter from the site.

If these mitigation measures are implemented, the impacts of litter will be reduced to a level of less than significant.

M-6 To Reduce The Potentially Adverse Effects Of Night Lighting (I-13) – To reduce the potentially adverse effects of night lighting on surrounding natural areas, the following measures will be implemented: (1) building lighting in areas adjacent to natural areas will be directed away from native habitat areas (the stream course and associated habitat) or shielded; (2) low-intensity lamps; (3) low elevation lighting poles; and (4) by internal silvering of the globe or external opaque reflectors directing the light away from open space areas. The degree to which these measures are utilized shall be dependant upon the distance of the light source from the natural areas. Use of private sources of illumination around homes shall be restricted to eliminate the use of arc lighting adjacent to open space areas.

If these mitigation measures are implemented, the impacts of night lighting will be reduced to a level of less than significant.

M-7 To Prevent Downstream Impacts (I-14)

a. To Prevent Contaminated Wastewater from Entering Downstream Habitats (I-13a) – Designated areas will be set aside for equipment washing and small batch mixing of concrete or other chemicals. The set aside areas will be lined with an impermeable liner and all washings or residue will be collected and properly disposed of following construction.

b. To Prevent Downstream Impacts from Runoff and Erosion (I-13b). A complete Storm Water Pollution Prevention Plan SWPPP will be prepared, approved by the County, and implemented. Monitoring of the SWPPP measures will take place monthly during the summer and weekly during the

winter. SWPPP measures will also be checked after each rain event. A monitoring report will be prepared and presented to the County bi-annually or whenever measures are not being adequately implemented.

c. To Prevent Downstream Impact from Residential Runoff (I-13c). The first 0.75 inch of rainfall on the site must be captured and treated prior to release into the Los Angeles River natural watershed. The following Best Management Practices (BMPs) are included in project design and are under review at the County Land Development Division, Plan Checking Section. These measures will limit pollution in the Los Angeles River and the potential negative impact on downstream biotic resources.

1) Lot runoff to be infiltrated from the graded pad areas through onsite pervious soils.
2) Direct rooftop runoff to the yards or vegetated areas.
3) Slope Protection – convey runoff from the tops of slopes and stabilize disturbed slopes with landscaping per County standards.
4) Vegetate slopes with native, drought tolerant vegetation to minimize erosion.
5) Provide one-foot wide by 1-foot deep gravel strip between back of driveway and sidewalk.
6) Use permeable materials for private sidewalks, driveways, and parking lots.
7) All street runoff will be collected and transported via storm drains away from the site and away from direct surface deposit in the Los Angeles River watershed. All runoff from the site must be filtered through a detention basin, bio swale, mechanical filter, or similar feature, prior to entering the Los Angeles River watershed. The preferred method should utilize a bio-filtration system that uses plants to remove the pollutants from the runoff.
8) If biofiltration detention basins are not feasible, CDS or similar devices will be installed in all storm drains at appropriate location to

capture and filter the first 0.75 inch of rainfall and all regular "nuisance" runoff.

9) Runoff from streets shall be collected into catch basins with pipe drains to the proposed deflection separator unit prior to outlet into existing system.
10) All catch basins and inlets shall be stenciled with "WARNING! DRAINS TO OCEAN." Notes and symbols per NPDES BMP standards or as approved by DWP.
11) Desilting Basin – Infiltrate runoff from northern offsite lands through basin bottom.

If these mitigation measures are implemented, the impacts to downstream waters will be reduced to a level of less than significant.

Level of Significance After Mitigation

The proposed project for 23400 and 23480 Park Sorrento will consist primarily of the development of previously developed areas, with limited impacts on the onsite and offsite biological resources. If the proposed mitigation measures are implemented, then it is expected that the impacts associated with the development will be reduced to levels of less than significant.

REFERENCES

The following resources, whether directly quoted, referenced, or cited, were used in the preparation of this report.

Abrams, L. 1923. Illustrated Flora of the Pacific States. Stanford University Press. Stanford, California.

American Ornithologists' Union (AOU). 1983 The A.O.U. Check-List of North American Birds. 6th ed. Allen Press, Lawrence, Kansas.

Calflora: Information on California plants for education, research and conservation. [web application]. 2016. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/.

California Department of Fish and Game (CDFG). 1980. At the Crossroads: A Report on the Status of California Endangered and Rare Fish and Wildlife. State of California Resources Agency, Sacramento, California.

CNPS, Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 05 December 2016].

California Natural Diversity Data Base (CNDDB). 2016. Data Base Record Search of Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species and Communities in the Vicinities of: Simi Valley West, Simi Valley East, Oat Mountain, Thousand Oaks, Calabasas, Canoga Park, Point Dume, Malibu Beach, Topanga, California. California Department of Fish and Wildlife, State of California Resources Agency, Sacramento, California.

Greeley, Kay J. 2015. Oak Tree Report. Park Sorrento Mixed Use. 23480 Park Sorrento, Calabasas, California, 91302. April 14.

Collins, B.J. 1972. Key to Coastal and Chaparral Flowering plants of Southern California. California State University, Northridge, California.

Gales, D.M. 1974. Handbook of Wildflowers, Weeds, Wildlife, and Weather of the Palos Verdes Peninsula. Caligraphics Printing and Publishing. San Pedro, California.

Grinnell, J. 1933. Review of the Recent Mammal Fauna of California. University of California Publications in Zoology. Vol 40, No. 2, pp. 71-234. University of California Press, Berkeley California.

Hickman, ed. 1993 The Jepson Manual. University of California-Berkeley. Accessed October 2012. http://ucjeps.berkeley.edu/interchange.html

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, Department of Fish and Game.

Jennings, M.R. 1983. "An Annotated Check List of the Amphibians and Reptiles of California." California Fish and Game 69(3):151-171.

Jepson Online Interchange, The. 2012. The Regent of the University of California. Berkeley. http://ucjeps.berkeley.edu/interchange.html

Jones, J.K., J.R., D.C. Carter, H.H. Genoways, R.S. Hoffman, and D.W. Rice. 1982. " Revised Checklist of North American Mammals North of Mexico, 1982." Occas. Pap. Mus. Texas Tech Univ., No. 80.

Klopatek, J.M., R.J. Olson, C.J. Emerson, and J.L. Jones. 1979. Land-use conflicts with natural vegetation in the United States. Environ. Conservation 6: 191-199.

McAuley, M. 1996. Wildflowers of the Santa Monica Mountains. Canyon Publishing Company, Canoga Park, California.

McConnaughey, B.H. and E. McConnaughey. 1985. The Audubon Society Nature Guides: Pacific Coast. Alfred A. Knopf, New York, NY.

Muns, B. 1983. Santa Monica Mountains Flora: A Checklist. Bob Muns, Arcadia, California.

Munz, P.A. 1974. A Flora of Southern California. University of California Press, Berkeley, California.

Munz, P.A., and D.D. Keck. 1959. A California Flora. University of California Press, Berkeley, California.

NCCP, 1992. Natural Communities Conservation Plan Draft Process Guidelines

Niehaus, T.F. and C.L. Ripper. 1976. A Field Guide to Pacific States Wildflowers. Houghton Mifflin Company. Boston, Massachusetts.

Remsen, J.V. 1978. "Bird Species of Special Concern in California: An Annotated List of Declining or Vulnerable Bird Species." Nongame Wildlife Investigations, Wildlife Management Branch, California Department of Fish and Game. Administrative Report No. 78-1.

Robbins, W.W., M.K. Bellue and W.S. Ball. 1951 “Weeds of California.” State of California Department of Agriculture.

Smith, J.P. and K. Berg. 1988. Inventory of Rare and Endangered Vascular Plants of California. Special Publication No. 1 (4th Edition), California Native Plant Society.

Stokes, D. and L. 1996. Field Guide to Birds, Western Region. Little, Brown and Company, Boston, New York, and London.

Thorne, R.F. 1976. "The Vascular Plant Communities of California." In: June Latting, ed., Plant Communities of Southern California. Special Publication No. 2, California Native Plant Society.

Ruth, J.M. 2016. Partners in Flight – U.S. website. Served by the USGS Patuxent Wildlife Research Center, Laurel, Maryland, USA. http://www.partnersinflight.org

United States Fish and Wildlife Service (FWS). 2012. Endangered and Threatened Wildlife and Plants. Federal Register 50 CFR 17.11 and 17.12. U.S. Department of the Interior.

APPENDIX C

Oak Tree Report

Oak Tree Report

Site:

Park Sorrento Mixed-Use

23480 Park Sorrento

Calabasas, California 91302

Prepared for:

Attention: Rob Raznick

Raznick & Sons, Inc.

5525 Oakdale Avenue

Woodland Hills, California 91364

Prepared by:

Kay J. Greeley

Board Certified Master Arborist WC-1140B

284 Valley Gate Road

Simi Valley, California 93065

(805) 577-8432

Date:

April 14, 2015

TABLE OF CONTENTS

Oak Tree Report

Park Sorrento Mixed-Use
23480 Park Sorrento
Calabasas, California 91302

INTRODUCTION

This Oak Tree Report was prepared at the request of Mr. Rob Raznick, Raznick & Sons, Inc. Raznick & Sons proposes to demolish the existing office complex at 23480 Park Sorrento, Calabasas, California and construct a new mixed-use project. There are 66 native oak trees located within the immediate vicinity of this work, including 10 Heritage oaks. There are two stumps. No major pruning is anticipated, though some minor pruning may be required for adequate roof clearance.

This report was prepared in accordance with Section 17.26.070 of the Municipal Code of the City of Calabasas, relating to oak trees. The City of Calabasas lies within a unique area of Los Angeles County, the beauty and welfare of which is greatly enhanced by the presence of large numbers of oak trees and scrub oak habitat areas. Past development of the area resulted in removal of a great number of these trees and diminished resource habitat areas. Further destruction of these finite resources would detrimentally affect the ecosystem and aesthetics of the city.

It is the policy of the city to preserve and enhance its ecosystem, one element being its inventory of oak trees and scrub oak habitat, due in part to their contribution to the hardwood canopy and wildlife habitat. Other identified benefits of oak trees and scrub oak habitat to the health, safety and welfare of the citizens of Calabasas include but are not limited to, erosion control, solar benefits, dust control, visual enjoyment, energy reduction, property values and the sense of community and place created by the surrounding vistas.

Any person or entity that owns, controls or has custody or possession of any real property within the city shall maintain all oak trees and scrub oak habitat located thereon in a state of good health pursuant to the most current “Oak Tree Preservation and Protection Guidelines” as adopted by a resolution of the City Council and which may be found on file in the office of the city clerk.

SCOPE OF WORK

The scope of work included a full ground field observation of the cultural and physical conditions of 66 oak trees located within the vicinity of the subject project, including all of the oak trees in the drainage corridor directly to the east. Photographs for reference and record purposes are included in Appendix B. An Oak Tree Location Map was created utilizing the project site plan and is included in Appendix D. Original field data was collected in February 2015 by associate

Certified Arborist Thomas Juhasz. All information provided by the preparer is certified by the preparer to be true and correct as of the date of the field observations.

TREE CHARACTERISTICS AND SITE CONDITIONS

A reference number is shown for each tree on the Oak Tree Location Map in Appendix D. Existing tag numbers that were present from a study performed by others were utilized where feasible. All of the trees are either *Quercus agrifolia*, commonly referred to as coast live oak or *Q. lobata*, commonly referred to as valley oak. Two trees, #37 and #41 were only stumps; they had failed and/or were removed since the prior study performed by others.

The trees are concentrated along the drainage on the parcel immediately to the east of the site. With the possible exception of tree #134 just west of the driveway, each of the 66 trees appears to have grown naturally in place. Tree #'s 4, 6, 12, 13, 24, 30, 31, 46, 58, and 138 are Heritage oaks; their trunk diameters are at least 24 inches. Detailed information with respect to diameter, height, canopy dimensions, form, crown class, age class, and pruning history is provided for each of the subject trees on the Field Evaluation Forms in Appendix A.

TREE HEALTH

The oak trees exhibit normal foliage color with no few signs of epicormic growth. They range in condition from Fair to Excellent, as evaluated on Table 1 in Appendix C. Detailed information with respect to tree health issues and defects is documented for each of the subject trees in the Field Evaluation Forms contained in Appendix A. The overall health rating of each tree is also shown on Table 1 in Appendix C.

VALUATION

The value of each tree was calculated in accordance with the PRC standards of the City of Calabasas. Detailed calculations are provided in Tables 1 and 2 in Appendix C. The total PRC value for the 66 trees evaluated was calculated at $1,331,200.

IMPACT ANALYSIS AND SPECIFIC RECOMMENDATIONS

As previously noted, one tree will be removed to construct the project as proposed. Tree #134, located in a planter to the west of the existing driveway would be removed to allow for the construction of a new structure at that location. Construction of the larger structure to the east would encroach within the protected zone of Heritage oak tree #'s 4, 6, 12, 13, and 24 and non-Heritage oak tree #'s 5 and 129. The protected zone area of each tree and the amount of encroachment into the protected zone is shown on Table 3 in Appendix C. As shown, the seven encroachments and one removal will result in an impact to approximately six percent of the total protected zone area for all of the trees.

The encroachments for tree #'s 4, 5, 6, 12, 13, and 24 will result from construction of the new mixed-use structure on the easterly side of the project. Up to five feet of over-excavation may be required for the building footings. Of particular potential concern are the relative locations of tree #'s 5 and 13. The distance from the trunks to the potential limit of over-excavation dictate that

great caution be utilized when performing the initial excavation. Work will need to be performed using small equipment under the direct observation of a qualified oak tree consultant. If roots over two inches in diameter are encountered, a bridging detail may be required to allow the roots to remain. Removal of larger structural roots close to these large trees could result in instability and subsequent tree failure. A final review of the proposed work within the protected zone of these trees should be performed once construction documents are prepared and prior to mobilization to evaluate these encroachments in more detail.

Should any incidental roots less than two inches in diameter be encountered during excavation, they should be cut cleanly at the edge of the excavation. The trees should not suffer from adverse impacts as a result of this work.

GENERAL RECOMMENDATIONS

The following general recommendations should be followed to establish and maintain a healthy cultural environment for oak trees. It must be understood that these recommendations apply to oak trees in general; specific questions should always be referred to the oak tree consultant.

WORK WITHIN THE PROTECTED ZONE

The protected zone is an area surrounding a tree, defined by the City of Calabasas. It includes all area within the dripline of the tree, plus five feet beyond the dripline. This distance must generally be no less than 15 feet from the trunk. For Heritage oaks, the area is increased to a diameter of 50 feet around the trunk. Given the high sensitivity of oak trees, great care must be taken when work is conducted within the protected zone. Specifically:

Observation -- All work conducted within the protected zone of an oak tree should be performed within the presence of a qualified oak tree consultant. Usually this work will also require a permit from the City of Calabasas. This will help to insure that work is performed in a manner that will not harm a tree.

Notice -- Forty-eight hours notice should be provided to the oak tree consultant prior to the planned start of work. This notification must usually be provided to the City of Calabasas also. The notice will insure that the project receives the highest possible scheduling priority and avoid delays.

Hand Tools -- All work should be accomplished with the use of hand tools only. Except under special circumstances, tractors, backhoes and other vehicles cannot be operated in a manner that will preserve major tree roots, minimize soil compaction, and insure the safety of both the vehicle operator and the tree.

Certification -- All work conducted within the protected zone should be certified by a qualified oak tree consultant. For work performed under a permit, this may be a requirement of the City of Calabasas.

WORK OUTSIDE OF THE PROTECTED ZONE

To protect trees within the vicinity of major construction, trees should usually be temporarily fenced at the edge of the protected zone prior to the beginning of construction operations on a site. The fence should be constructed of chain link material, a minimum of five feet in height. The project arborist should be contacted to develop a fencing plan, generally required by the

City of Calabasas. The fence may be removed at the completion of the construction upon approval by the City of Calabasas. Fencing may not be required for some projects; always contact the project arborist for recommendations.

PLANTING WITHIN THE PROTECTED ZONE

Planting within the protected zone of an oak tree is discouraged. Ideally, the leaf litter from the tree should be allowed to collect beneath the tree, creating a natural mulch and fertilizer. If planting is necessary or the natural leaf litter is removed, the following should be considered:

Plant Material -- Only drought tolerant plantings should be utilized. All plantings should be compatible with native oak trees. A good reference for compatible plant material is Compatible Plantings Under and Around Oaks by the California Oak Foundation.

Irrigation -- No spray-type irrigation systems should be used within the protected zone. It is important that sprinkler systems do not throw water against the trunk of an oak tree. A continuously wet soil condition near the root crown, the area where the tree trunk meets the ground, favors the growth of predatory disease organisms. The two most prominent organisms in Southern California are avocado root rot (*Phytophora cinnamomi*) and oak root fungus (*Armillaria mellea*). As an absolute minimum, all spray irrigation should be located at least 15 feet from the trunk.

Resistant Varieties -- Avoid plants that are susceptible to either avocado root rot or oak root fungus. Oak trees are particularly susceptible to these diseases in developed areas. Avoiding other plants susceptible to these diseases will also help to keep the diseases in a dormant state. Consult publications by the University of California Cooperative Extension for plant lists.

Mulch -- Place a three-inch (3”) thick layer of organic mulch throughout the protected zone of each tree, keeping the mulch slightly away from the trunk. Aesthetically pleasing options include crushed walnut hulls and shredded bark. These mulches are beneficial when the natural leaf litter is not available, minimizing evaporation and providing weed control.

TREE MAINTENANCE AND PRUNING OPERATIONS

Most oak trees require very little pruning, with the exception of periodic deadwooding. However, if a tree has a major defect, the employment of proper pruning practices may be more desirable than the uncontrolled damage that could otherwise occur. Always consult qualified professionals for advice.

Ornamental or Aesthetic Pruning -- Removal of live tissue for the purpose of altering the appearance of an oak tree is not desirable and is generally not allowed by the City of Calabasas. Activities such as thinning out, heading up, or other similar practices contribute to the onset of insect and disease attacks.

Deadwooding -- Removal of dead tissue, regardless of size, may usually be performed without a permit. All pruning should follow standards endorsed by the International Society of Arboriculture.

Other Pruning Operations -- Branches that are considered to be unsafe due to decay, cavities, cracks, physical imbalance, fire damage, disease, or insects should be referred to a qualified oak tree consultant for inspection, especially if the branches exceed two inches in diameter. A permit is generally required to remove such branches. A brief written report will be prepared by the oak tree consultant to provide the basis for the request.

Cavities and Hollows -- Cavities and hollows should be kept free of loose debris. Some contain decayed wood; these should generally be referred to a qualified arborist for treatment. Concrete or other materials should not be used to seal or fill in cavities or hollows. These materials create a haven for diseases and insects over time. Openings may be covered with screening to prevent debris build-up.

Wound Seal -- Pruning wounds should generally not be sealed with any type of compound. Over time, these materials crack and create entry points for disease and insects. A proper pruning cut will heal naturally over a short period of time.

WATERING AND FERTILIZATION

Winter rains should be sufficient to provide the water needed for oak trees in natural areas. Oak trees in landscaped areas will usually receive enough water from adjacent plantings. If you suspect that an oak tree is in need of supplemental water, contact a qualified oak tree consultant for advice.

Watering -- If supplemental water is required, use a water probe, such as a "Ross Root Feeder" to apply the water. Alternatively, a low volume soaker hose could be utilized. Apply the water at various locations, just outside the dripline of the tree. A total of fifteen to twenty hours of low volume application should suffice. Repeat this watering cycle every one to two months as needed. Water should generally not be applied in the summer, as most oak trees are dormant and cannot accept the water.

Fertilization -- Fertilizer can be applied along with the water. A total of 0.75 pound of actual nitrogen per inch of trunk diameter per year is a basic rule-of-thumb. However, ask a local certified nurseryman for a specific recommendation and follow the manufacturer's directions carefully. Over-fertilization can be deadly.

Aeration -- Ventilation of the root system can be very beneficial in areas where soil has been compacted. Hand dig holes six inches in diameter to a depth of two feet. Do not cut any roots in excess of one inch in diameter. Dig the holes two feet on center, in concentric circles around the trunk, throughout the dripline. If possible, add holes outside of the dripline. Fill the holes with an organic matter. If oak leaf litter is not available, a mixture such as fifty percent "Kellogg's Nitrohumus" and fifty- percent nitrolized redwood shavings will be beneficial. This organic matter will be decomposed, producing a year-round source of fertilizer for the oak tree.

DISEASES AND INSECTS

Effective pest control starts with observation by the homeowner. Changes, such as abnormal leaf drop, oozing sap, and discolored or dying leaves indicate that something has changed and expert inspection is required. Tree owners should be very careful when using pesticides around an oak tree. Herbicides should never be utilized within 100 feet of an oak tree, unless applied by a certified pesticide applicator. Misuse of these compounds can lead to the death of beneficial organisms or even to the death of the tree.

GRADE CHANGES

Any change to the grade at the root crown of an oak tree can have a negative impact. As little as six inches of change can lead to the death of the tree. Drainage patterns should be maintained to prevent water from flowing and ponding at the base of a tree. If fill soil exists, use a shovel to remove the excess soil. The flare at the root crown should just be visible.

INSPECTION

Oak trees should be inspected on a periodic basis by a qualified oak tree consultant. The inspection basis should be determined by the relative hazard value of the tree. For example, trees surrounding a high-use business should be inspected on a quarterly basis, whereas trees located within a low-use open space might only require bi-annual inspection. It is the responsibility of the property owner to establish and implement an appropriate inspection schedule upon the recommendation provided by the oak tree consultant.

WARRANTY

The trees discussed herein were generally reviewed for physical, biological, functional, and aesthetic conditions. This examination was conducted in accordance with presently accepted industry procedures: an at-grade, macro-visual observation only. No extensive microbiological, soil/root excavation, upper crown examination, nor internal tree investigation was conducted and therefore, the reportings herein reflect the overall visual appearance of the trees on the date reviewed. No warranty is implied as to the potential failure, health or demise of any part or the whole of any tree described in this report.

Clients are advised that should physical or biological concerns be evidenced for any specimen within this report, prudent further investigation, detailed analysis or remedial action may be required.

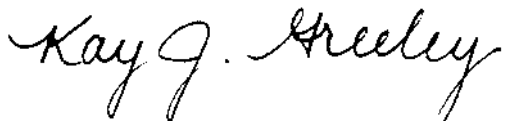
As living organisms, plants continually exhibit growth and response to environmental changes that influence the development, health and vigor of the specimen. These influences may not be externally visible and may be present or develop over various time periods depending on the site conditions.

It is recommended that due to the general nature of plant development and continued environmental and physical influences on vegetation at a specific site, regular monitoring by a qualified arborist is scheduled.

Locations of property lines or exact tree locations, site amenities, structures or easements are assumed to be as illustrated on any enclosed maps. They are a composite of information provided by the client, records of fact and/or on-site field review. No investigation was made to verify these conditions.

This report represents the independent opinion of the preparer and was conducted per the client's scope of request. The report is therefore limited to the extent described herein.

Respectfully submitted,



Kay J. Greeley, BCMA

APPENDIX A – FIELD EVALUATION FORMS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: FJ Date of last inspection: 1 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 1 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 2 dbH (inches): 17.6 Height (feet): 35

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	12	10	15	6	10	0	5	12
Clearance to canopy (feet)	30	30	12	15	25	0	15	30

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events 'Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics: Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☐ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 1

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks			L	
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ■ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: TJ Date of last inspection: 1 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 2 Species: ■ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 22 Height (feet): 50

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	29	26	20	28	8	10	9	22
Clearance to canopy (feet)	20	20	20	25	15	15	12	10

Form: ■ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ■ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ■ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ■ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ■ specimen ☐ heritage/historic ■ wildlife ☐ unusual ☐ street tree ■ screen ■ shade ■ indigenous ■ protected by government agency

TREE HEALTH

Foliage color: ■ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ■ normal ☐ sparse

Leaf size: ■ normal ☐ small

Annual shoot growth: ☐ excellent ■ average ☐ poor

Woundwood development: ☐ excellent ■ average ☐ poor ☐ none

Vigor class: ☐ excellent ■ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ■ commercial ☐ industrial ☐ park ☐ open space ☐ natural ■ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ■ shrub border ☐ wind break

Irrigation: ■ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ■ never ☐ seldom ☐ regularly

* in RIPARIAN CORRIDOR

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 2

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☑ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☐ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 3 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 3 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 8 Height (feet): 30

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	8	9	8	7	6	10	6
Clearance to canopy (feet)	12	30	30	25	30	30	25	30

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☐ normal ☑ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☐ fair ☑ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 3

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			S	S
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target:? Y N Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☐ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 4 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 4 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 29 Height (feet): 65

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	28	32	28	26	24	37	39	31
Clearance to canopy (feet)	35	40	40	40	40	50	50	20

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☑ excellent ☐ average ☐ poor ☐ none

Vigor class: ☑ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☑ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 4

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TT Date of last inspection: 5 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 5 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 23 Height (feet): 50

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	8	0	8	6	27	47	35
Clearance to canopy (feet)	0	8	0	0	8	20	30	15

Form: ☐ generally symmetric ☑ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☑ lawn ☑ shrub border ☐ wind break

Irrigation: ☐ none ☑ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 5

TARGET

Lawn

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☒ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		M	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razmik Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 134 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 16 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 33 Height (feet): 65

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	43	35	33	39	39	30	0
Clearance to canopy (feet)	0	50	40	40	40	45	20	0

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☑ excellent ☐ average ☐ poor ☐ none

Vigor class: ☑ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 6

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y ☑ Move target:? Y (N) Other:
_____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☐ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ___ Coordinate: ___

Date: 02/25/2015 Inspector: TJ Date of last inspection: 7 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 7 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 7 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	6	8	13	0	0	0	5	0
Clearance to canopy (feet)	10	10	12	0	0	0	10	0

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☒ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 7

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☒ moderate ☐ low Undermined: ☐ severe ☒ moderate ☐ low — Erosion from Creek

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M	M	
Bow, sweep		S	S	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☐ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 8 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 8 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	5	3	9	0	11	5	8	3
Clearance to canopy (feet)	4	5	4	6	6	6	0	4

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☑ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☐ normal ☑ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☐ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

on Creek Bank

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 8

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☑ moderate ☐ low Undermined: ☐ severe ☑ moderate ☐ low — from Creek erosion

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____
☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 9 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 9 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 7 Height (feet): 25

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	0	12	8	6	3	0	0
Clearance to canopy (feet)	8	0	25	25	25	25	0	0

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☒ suppressed

Age class: ☐ young ☒ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☒ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☐ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M	M	
Bow, sweep		S	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 10 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 10 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 22 Height (feet): 55

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	0	11	42	45	10	4	6
Clearance to canopy (feet)	0	0	30	50	50	7	5	8

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

Tree Number 10

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2016 Inspector: TJ Date of last inspection: 11 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 11 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 8 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	13	11	10	9	6	11	10
Clearance to canopy (feet)	12	15	15	12	8	8	5	5

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☒ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 11

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☐ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznik Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 12 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 12 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 34 Height (feet): 70

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	28	39	31	26	0	0	15	24
Clearance to canopy (feet)	20	40	40	50	0	0	30	30

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest Right on Creek Bank

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 12

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☒ moderate ☐ low Undermined: ☐ severe ☒ moderate ☐ low — Creek erosion

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: TJ Date of last inspection: 13 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 13 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 37 Height (feet): 65

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	46	42	50	45	44	50	45	42
Clearance to canopy (feet)	50	65	60	50	50	65	50	30

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

* on Creek bank

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 13

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: (a) occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate (☑) low Undermined: ☐ severe ☐ moderate ☑ low — erosion from creek

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____
☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Baznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 14 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 14 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 11 Height (feet): 30

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	6	12	15	0	15	15	7	5
Clearance to canopy (feet)	5	20	30	0	30	30	9	8

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 14

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23840 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: TJ Date of last inspection: 15 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 15 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 6 Height (feet): 20

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	5	13	8	8	8	10	12
Clearance to canopy (feet)	0	8	20	0	8	6	15	20

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☒ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

* on Creek bank

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 15

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			L	L
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 DARK SORRENTO. Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 16 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 16 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 13 Height (feet): 40

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	11	0	0	0	18	16	15	12
Clearance to canopy (feet)	20	0	0	0	20	12	10	10

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girding				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kazwick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 17 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 17 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 10 Height (feet): 40

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	11	0	0	0	0	11	10
Clearance to canopy (feet)	40	30	0	0	0	0	30	40

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☐ indigenous ☐ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 17

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: RAZNICK REALTY GROUP ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: TJ Date of last inspection: 18 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 18 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 14 Height (feet): 35

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	11	10	21	11	13	9	6	8
Clearance to canopy (feet)	20	20	15	15	10	8	0	8

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☐ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

ON BANK OF CREEK IN RIPARIAN CORRIDOR.

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 18

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☑ moderate ☐ low Undermined: ☐ severe ☑ moderate ☐ low → Creek erosion

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks			M	
Multiple attachments				
Included bark			L	
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: TJ Date of last inspection: 19 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 19 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 15 Height (feet): 50

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	19	12	15	17	11	6	7	14
Clearance to canopy (feet)	20	30	30	30	10	15	10	25

Form: ☒ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☒ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☒ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☐ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☒ single tree ☐ below canopy ☒ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

In Riparian Corridor

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 19

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 20 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 20 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 17 Height (feet): 30

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	26	28	25	0	0	0	0
Clearance to canopy (feet)	0	30	20	20	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 20

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: (☑) occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		S		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other:
_____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 21 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 21 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 11 Height (feet): 40

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	30	33	26	0	0	0	0
Clearance to canopy (feet)	0	40	40	40	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☒ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

 Tree Number 21

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☐ occasional use ☑ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		S	M	
Bow, sweep		S	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 22 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 22 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 11 Height (feet): 25

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	11	14	22	0	10	0	0	0
Clearance to canopy (feet)	12	15	15	0	20	0	0	0

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☒ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☒ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 22

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		L		
Co-dominants, forks			M	
Multiple attachments				
Included bark			M	
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 23 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 23 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 9 Height (feet): 25

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	25	12	0	0	0	0	0
Clearance to canopy (feet)	0	20	15	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 23

TARGET

Use Under Tree: ☐ building ☐ parking ☒ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks		M		
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____
☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razmick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 24 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 24 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 29 Height (feet): 70

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	35	41	39	41	12	0	0	0
Clearance to canopy (feet)	40	50	50	50	70	0	0	0

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☑ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 24

TARGET

Use Under Tree: ☐ building ☒ parking ☒ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks			M	
Multiple attachments				
Included bark			M	
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target? Y N Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 25 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 25 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 14 Height (feet): 25

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	0	35	36	0	0	0	0
Clearance to canopy (feet)	0	0	20	20	0	6	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? (Y) N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 25

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		S	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☐ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 26 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 26 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 10 Height (feet): 20

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	0	15	0	0	0	0	0
Clearance to canopy (feet)	0	0	12	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☒ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☒ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☒ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☒ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 26

TARGET

Use Under Tree: ☐ building ☑ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? (Y) N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		S		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				M
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Rexnick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/05/2015 Inspector: TJ Date of last inspection: 27 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 27 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 10 Height (feet): 35

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	18	12	15	6	4	0	0	5
Clearance to canopy (feet)	30	30	30	20	50	0	0	25

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☐ open space ☒ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 27

TARGET

Use Under Tree: ☐ building ☐ parking ☒ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		L		
Bow, sweep		L		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See TREE Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Rexnick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 07/23/2015 Inspector: TJ Date of last inspection: 28 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 28 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 20 Height (feet): _____

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	30	23	0	8	0	11	12	20
Clearance to canopy (feet)	15	20	0	8	0	25	25	25

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest on Creek bank

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 28

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☑ severe ☑ moderate ☐ low Undermined: ☐ severe ☑ moderate ☐ low from erosion by creek

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			L	L
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____
☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/05 Inspector: TS Date of last inspection: 29 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 29 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 12 Height (feet): 30

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	11	20	16	14	14	11	10	15
Clearance to canopy (feet)	8	30	20	10	10	20	25	30

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 29

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☐ occasional use ☑ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks			L	
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razmick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2013 Inspector: TJ Date of last inspection: 30 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 30 Species: ☐ *Quercus agrifolia* ☑ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 24 Height (feet): 60

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	28	13	16	22	23	27	32	30
Clearance to canopy (feet)	60	30	50	50	30	50	60	60

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☑ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest On Creek Bank

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 30

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☑ moderate ☐ low Undermined: ☐ severe ☑ moderate ☐ low From Creek Erosion

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target? Y N Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Rosnick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 31 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 31 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 30 Height (feet): 60

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	32	25	20	33	38	36	31	40
Clearance to canopy (feet)	60	50	50	60	60	20	15	30

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☒ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☒ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 31

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks			M	
Multiple attachments			M	
Included bark		M	M	
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 32 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 32 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 7 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	6	16	22	0	0	0	0	0
Clearance to canopy (feet)	9	10	8	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 32

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☑ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines

Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M	M	
Bow, sweep		S	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			M	M
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:

_____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Resnick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento. Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 33 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 33 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 10 Height (feet): 30

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	3	16	24	16	0	0	0	0
Clearance to canopy (feet)	30	25	20	25	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 33

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M	L	
Bow, sweep		M	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razuck Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 7380 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 34 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 34 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 16 Height (feet): 45

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	18	30	29	0	0	8	8
Clearance to canopy (feet)	6	12	45	30	0	0	10	6

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 34

TARGET

Use Under Tree: ☐ building ☐ parking ☒ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M	M	
Bow, sweep		M	L	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			L	L
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razvick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 35 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 35 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 7 Height (feet): 10

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	5	8	23	0	0	0	0	0
Clearance to canopy (feet)	6	7	12	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☒ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 35

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		S	M	
Bow, sweep		S	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report.

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razmick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 3/6 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 36 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 6 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	0	16	0	0	0	0	0
Clearance to canopy (feet)	0	0	12	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☒ suppressed

Age class: ☐ young ☒ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☒ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☒ fair ☒ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 36

TARGET

Use Under Tree: ☐ building ☒ parking ☒ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M	M	
Bow, sweep		S	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Resnick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento. Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 37 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 37 Species: ☐ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: _____ dbH (inches): Removed Height (feet): _____

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)								
Clearance to canopy (feet)								

Form: ☐ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☐ indigenous ☐ protected by government agency

TREE HEALTH

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☐ normal ☐ sparse

Leaf size: ☐ normal ☐ small

Annual shoot growth: ☐ excellent ☐ average ☐ poor

N/A Removed

Woundwood development: ☐ excellent ☐ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☐ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☐ never ☐ seldom ☐ regularly

Removed

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 37

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments		Removed		
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target? Y N Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☐ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: _____

ADDITIONAL COMMENTS

Removed.

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 38 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 38 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 8 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	10	5	3	6	6	0	0
Clearance to canopy (feet)	0	12	7	7	7	7	0	0

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☑ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☑ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☑ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☐ normal ☑ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☑ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 38

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M		
Bow, sweep		M		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 39 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 39 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 7 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	5	0	0	0	15	11	0
Clearance to canopy (feet)	8	0	0	0	0	12	15	0

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 39

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: (O) occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		S	S	
Bow, sweep		S	S	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 40 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 40 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 13 Height (feet): 50

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	13	14	9	8	11	16	18	0
Clearance to canopy (feet)	50	50	40	20	25	20	25	0

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 40

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: (a) occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ (a) no action required at this time

Effect on adjacent trees: (a) none ☐ evaluate Notification: (a) owner ☐ manager (b) governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 41 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 41 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: _____ dbH (inches): Removed Height (feet): _____

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)								
Clearance to canopy (feet)								

Form: ☐ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☐ indigenous ☐ protected by government agency

TREE HEALTH

N/A Removed

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☐ normal ☐ sparse

Leaf size: ☐ normal ☐ small

Annual shoot growth: ☐ excellent ☐ average ☐ poor

Woundwood development: ☐ excellent ☐ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☐ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing N/A

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Removed

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☐ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 41

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight	REMOVED			
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target? Y N Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☐ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: _____

ADDITIONAL COMMENTS

Removed - Stump resprouting

FIELD EVALUATION FORM

Owner: Razmick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 42 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 42 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 8 Height (feet): 25

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	0	0	0	18	15	18	0
Clearance to canopy (feet)	0	0	0	0	25	20	20	0

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 47

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		M		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kasnick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 43 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 43 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 2 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	6	5	6	0	6	6	8	12
Clearance to canopy (feet)	12	10	10	0	7	7	10	12

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☑ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 43

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? (Y) N Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 44 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 44 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	3	6	4	5	4	0	4	5
Clearance to canopy (feet)	12	10	10	10	10	0	8	8

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 14

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Rozmick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 45 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 45 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 11 Height (feet): 40

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	11	10	15	13	0	0	5	14
Clearance to canopy (feet)	30	30	35	35	0	0	40	40

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☑ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 45

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notifications: ☐ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Resnick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 46 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 46 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 12@2', 13@2' Height (feet): 25

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	7	5	10	15	10	24	24	0
Clearance to canopy (feet)	10	8	12	10	15	20	20	0

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☑ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☐ average ☐ poor

Woundwood development: ☐ excellent ☐ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 46

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines

Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☐ occasional use ☒ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		L		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity			L	
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			M	M
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 48 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 48 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	6	6	0	0	0	0	0
Clearance to canopy (feet)	0	10	10	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☐ normal ☑ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

 Tree Number 48

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			M	M
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☐ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TT Date of last inspection: 49 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 49 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 8 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	12	15	16	12	0	0	0
Clearance to canopy (feet)	0	12	12	12	12	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☑ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☑ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☑ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 49

TARGET

Use Under Tree: ☐ building ☑ parking ☑ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☐ occasional use ☑ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		M	M	
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☐ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Rasnick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 13480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 50 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 50 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 6 Height (feet): 20

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	7	7	8	7	7	6	8	13
Clearance to canopy (feet)	20	17	6	4	10	10	20	20

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☐ young ☑ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 5/7 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 57 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	12	4	4	5	8	8	8
Clearance to canopy (feet)	8	12	7	4	6	8	0	0

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☑ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☐ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y N Twig Dieback? Y N

Foliage density: ☐ normal ☑ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 57

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☑ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razmick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TT Date of last inspection: 5? ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 52 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 2 Height (feet): 10

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	0	6	5	0	0	0	0
Clearance to canopy (feet)	0	0	10	10	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☑ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 52

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target:? Y N Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 53 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 53 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	0	0	0	0	9	11	8
Clearance to canopy (feet)	8	0	0	0	0	12	15	12

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☐ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 53

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target? Y N Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Razmick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK Sorrento. Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 5/4 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 54 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 2 Height (feet): 10

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	6	3	3	6	0	0	0	4
Clearance to canopy (feet)	10	7	5	10	0	0	0	8

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☑ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 54

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☒ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Rozwick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 55 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 55 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	7	7	0	0	0	0	0
Clearance to canopy (feet)	0	8	10	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☑ intermediate ☐ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☑ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☑ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☐ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☐ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 55

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M		
Bow, sweep		M		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TT Date of last inspection: 56 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 56 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 6 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	14	12	0	0	8	0	0	0
Clearance to canopy (feet)	12	12	0	0	8	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☑ intermediate ☐ suppressed

Age class: ☐ young ☑ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☐ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☑ other LARGE WILLOW

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 56

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper		M		
Bow, sweep		M		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			L	L
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Rarnick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 2348D PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 57 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 57 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 22 Height (feet): 65

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	40	35	42	37	22	25	8	27
Clearance to canopy (feet)	60	60	60	45	15	30	25	30

Form: ☒ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☒ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest on Creek Bank

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☒ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 57

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____

☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TT Date of last inspection: 58 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 58 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 2 dbH (inches): 10, 16 Height (feet): _____

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	8	12	15	8	8	14	12
Clearance to canopy (feet)	8	8	10	0	0	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☑ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

Overhangs the Creek

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 59

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☑ severe ☐ moderate ☐ low Undermined: ☑ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☒ low

LEAN: 45 degrees from vertical ☑ natural ☐ unnatural ☒ self-corrected Soil heaving? Y (N) – Erosion from Creek

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☐ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 58 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 59 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 2 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	0	0	0	0	0	4	5	0
Clearance to canopy (feet)	0	0	0	6	0	12	12	0

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☑ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☐ normal ☑ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☑ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 59

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y ☑ ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 13460 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: _____ ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 60 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 4 Height (feet): 15

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	6	7	8	10	10	5	1	7
Clearance to canopy (feet)	5	6	10	12	6	7	5	10

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☑ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☑ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

* trunk damage from vehicle / machinery used to install construction fencing.

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 60

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines

Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____

☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: TJ Date of last inspection: 128 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 128 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 15 Height (feet): 45

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	9	7	8	8	13	12	15	16
Clearance to canopy (feet)	45	15	15	15	25	25	25	8

Form: ☒ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☒ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☒ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☐ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

RIPARIAN CORRIDOR

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 128

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☐ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Raznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 PARK SORRENTO Thomas Guide: Page: ____ Coordinate: ____

Date: 02/23/2015 Inspector: TJ Date of last inspection: 129 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 129 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 20 Height (feet): 55

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	12	9	25	21	20	23	26	29
Clearance to canopy (feet)	50	10	50	50	15	40	30	12

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☑ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☑ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☑ excellent ☐ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☐ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☑ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

* within RIPARIAN CORRIDOR

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 129

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☐ owner ☐ manager ☒ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaznick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: 02/25/2015 Inspector: TJ Date of last inspection: 134 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 134 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 16 Height (feet): 40

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	8	0	0	26	27	28	27	12
Clearance to canopy (feet)	15	0	0	30	30	30	30	20

Form: ☑ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☑ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☐ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Major pests/diseases: Borers

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☐ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y N ☑ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	(0%)	(10-25%)	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☑ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

* possible root issues (encircling roots)
* temp utility Box installed within 5' of trunk.

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 134

TARGET

Use Under Tree: ☐ building ☐ parking ☑ traffic ☑ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☐ occasional use ☐ intermittent use ☑ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: 20 degrees from vertical ☐ natural ☐ unnatural ☑ self-corrected Soil heaving? Y (N)

Decay in plane of lean? Y (N) Roots broken? Y (N) Soil cracking? Y (N) Lean severity: ☐ severe ☑ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants		M		
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report.

ADDITIONAL COMMENTS

Epicormic shoots

FIELD EVALUATION FORM

Owner: Reznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 135 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 135 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 10

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	5	5	6	5	5	0	0	0
Clearance to canopy (feet)	6	3	7	5	6	0	0	0

Form: ☐ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☒ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y ☒ Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☒ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 35

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☑ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? Y N

Occupancy: ☑ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target? Y (N) Other: _____ ☑ no action required at this time

Effect on adjacent trees: ☑ none ☐ evaluate Notification: ☑ owner ☐ manager ☑ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaznick Realty Group ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: TJ Date of last inspection: 136 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 136 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 3 Height (feet): 10

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	5	0	5	10	7	0	0	0
Clearance to canopy (feet)	0	0	3	10	10	0	0	0

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☒ intermediate ☐ suppressed

Age class: ☒ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☒ none ☐ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? (Y) N

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☐ commercial ☐ industrial ☐ park ☒ open space ☒ natural ☒ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y ☒

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 136

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y (N) Can use be restricted? (Y) N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other:
_____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☒ governing agency Date: See Tree Report.

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kazwick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: _____ Date of last inspection: 138 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 138 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 3 dbH (inches): 7, 6, 12 all at 2' Height (feet): 25

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	14	21	23	15	10	7	8	10
Clearance to canopy (feet)	25	12	12	12	20	20	25	25

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☑ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☑ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☑ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☑ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☑ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y (N)

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☑ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2

Tree Number 138

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks		S	M	
Multiple attachments				
Included bark		S	M	
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs			L	L
Borers/termites/ants				
Cankers/galls/burls				
Previous failure		S		

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target? Y N Other:
_____ ☑ no action required at this time

Effect on adjacent trees: ☐ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Kaenick Realty Group ☐ public ☑ private ☐ unknown ☐ other: _____

Site/Address: 23480 Park Sorrento Thomas Guide: Page: ____ Coordinate: ____

Date: _____ Inspector: _____ Date of last inspection: 139 ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 139 Species: ☑ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 4 Height (feet): 12

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	5	5	4	6	8	8	2	2
Clearance to canopy (feet)	6	8	10	12	10	5	7	6

Form: ☐ generally symmetric ☑ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☑ co-dominant ☑ intermediate ☐ suppressed

Age class: ☑ young ☐ semi-mature ☐ mature ☐ over-mature/senescent Live crown ratio (conifers only): _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☑ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☑ multiple pruning events Approximate dates: _____ ☑ unknown

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☑ screen ☑ shade ☑ indigenous ☑ protected by government agency

TREE HEALTH

Foliage color: ☑ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☑ normal ☐ sparse

Leaf size: ☑ normal ☐ small

Annual shoot growth: ☐ excellent ☑ average ☐ poor

Woundwood development: ☐ excellent ☑ average ☐ poor ☐ none

Vigor class: ☐ excellent ☑ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

Major pests/diseases: _____

SITE CONDITIONS

Site character: ☐ residence ☑ commercial ☐ industrial ☐ park ☑ open space ☑ natural ☑ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☑ shrub border ☐ wind break

Irrigation: ☑ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	50-75%	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☑ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 139

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☒ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☐ small features ☐ utility lines
Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☒ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y N Mushroom/conk present? Y N ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

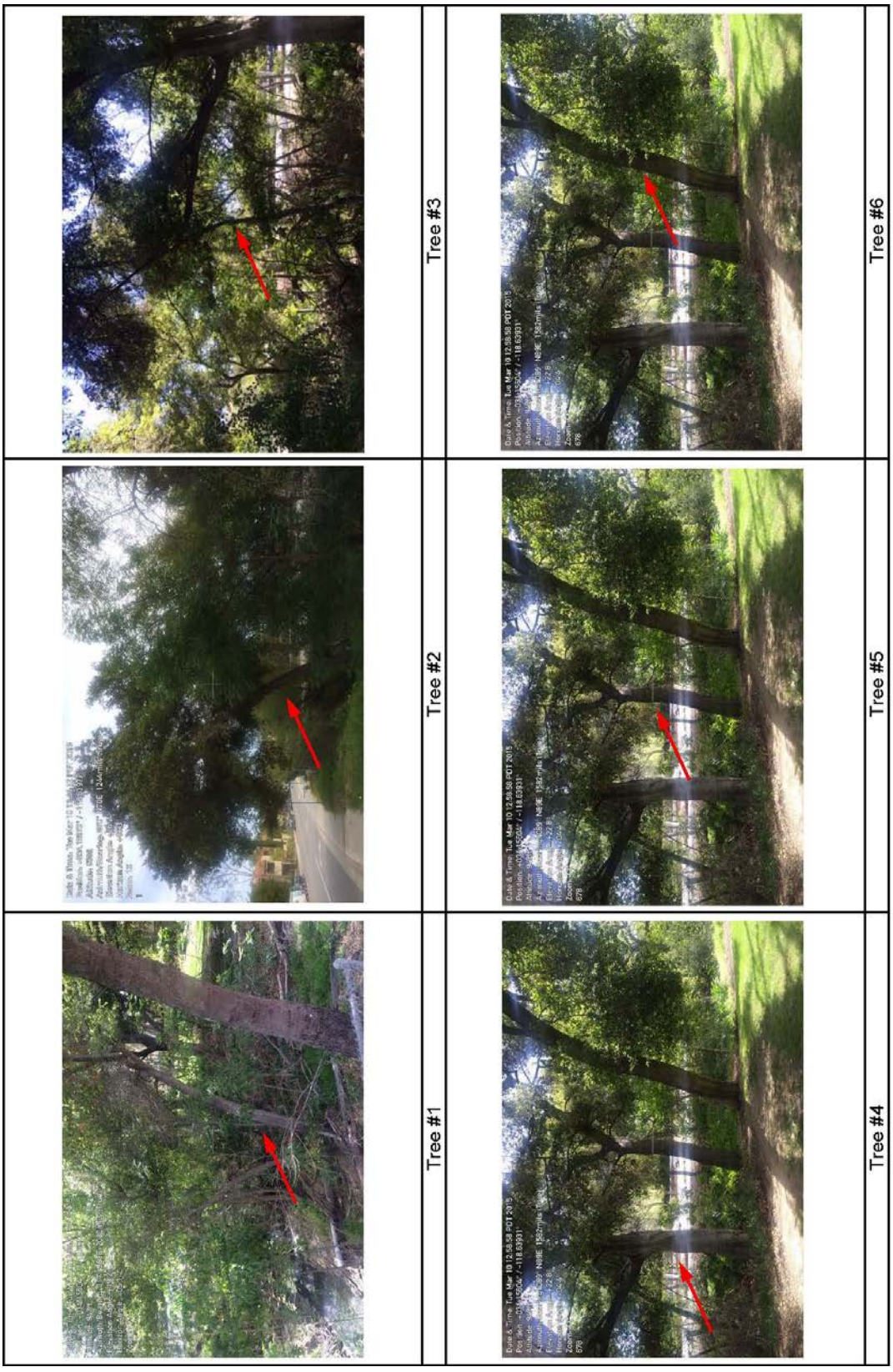
Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y N Replace tree? Y N Move target? Y N Other:
_____ ☒ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☒ owner ☐ manager ☐ governing agency Date: See Tree Report

ADDITIONAL COMMENTS

APPENDIX B - PHOTOGRAPHS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Tree #2
Tree #3
Tree #4
Tree #5
Tree #6


Tree #9
Tree #12
Tree #8
Tree #11
Tree #7
Tree #10


Tree #15
Tree #18
Tree #14
Tree #17
Tree #13
Tree #16


Tree #19
Tree #20
Tree #21
Tree #22
Tree #23
Tree #24

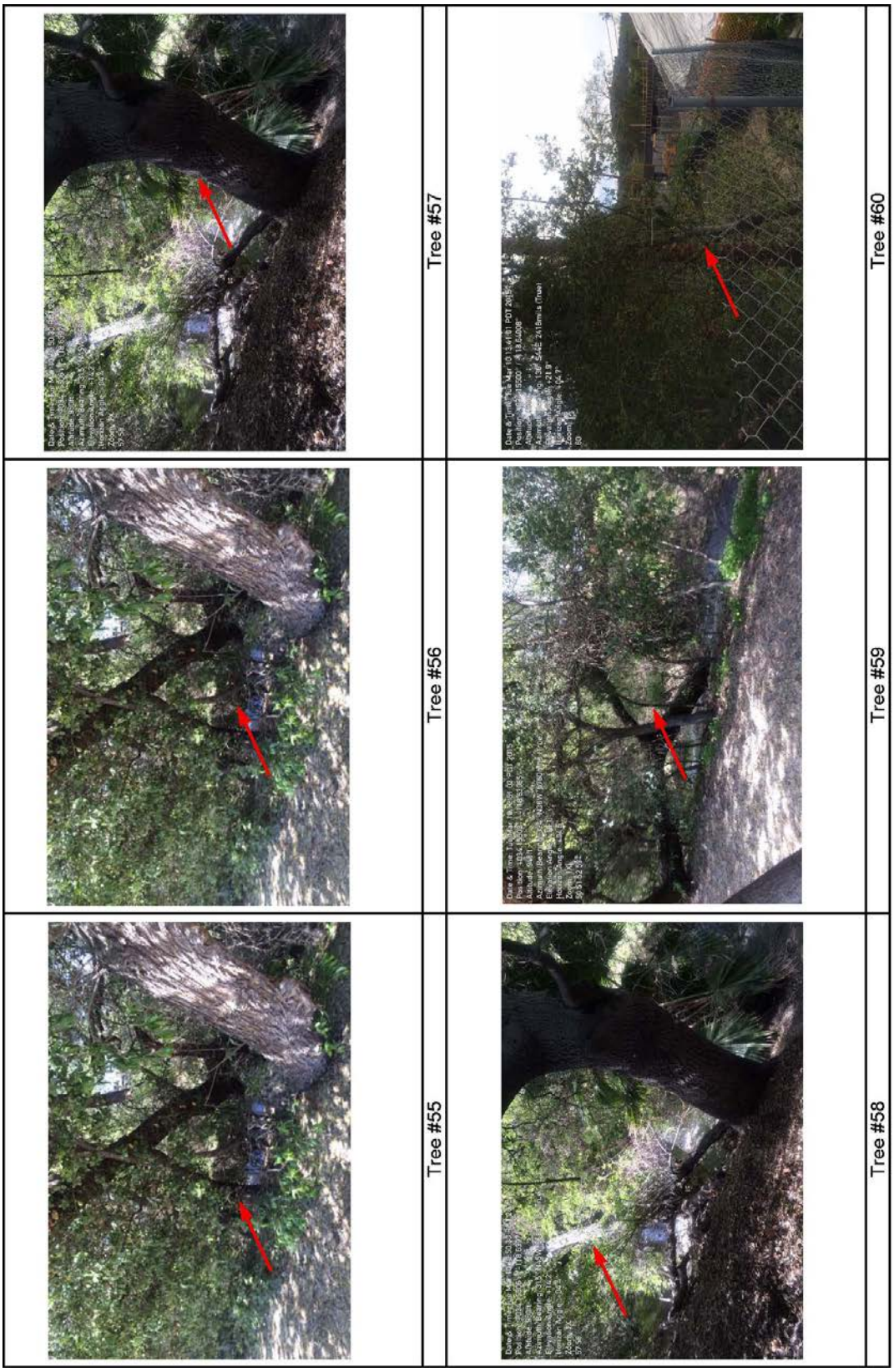

Tree #27
Tree #30
Tree #26
Tree #29
Tree #25
Tree #28


Tree #33
Tree #36
Tree #32
Tree #35
Tree #31
Tree #34


Tree #39
Tree #42
Tree #38
Tree #41
Tree #37
Tree #40


Tree #45
Tree #48
Tree #44
Tree #47
Tree #43
Tree #46


Tree #51
Tree #54
Tree #50
Tree #53
Tree #49
Tree #52


Tree #57
Tree #60
Tree #56
Tree #59
Tree #55
Tree #58


Tree #134
Tree #138
Tree #129
Tree #136
Tree #128
Tree #135

Tree #139

APPENDIX C – TABLES

TABLE 1
OAK TREE CONDITION ANALYSIS

Tree Number	Crown Development	Trunk Condition	Branch Structure	Twig Growth	Foliage	Insects/ Diseases	Roots	Total	Condition (%)	Class	Health Rating
1	5	5	5	5	5	5	5	35	100%	Excellent	A
2	3	3	3	5	3	5	5	27	81%	Good	B
3	2	2	2	2	2	5	5	20	60%	Fair	C
4	5	5	5	5	5	5	5	35	100%	Excellent	A
5	5	5	5	5	5	5	5	35	100%	Excellent	A
6	5	5	5	5	5	5	5	35	100%	Excellent	A
7	3	3	3	3	3	5	5	25	74%	Good	B
8	2	3	3	5	3	5	5	26	78%	Good	B
9	3	3	3	5	3	5	5	27	81%	Good	B
10	5	5	5	5	5	5	5	35	100%	Excellent	A
11	3	3	3	4	4	5	5	27	81%	Good	B
12	5	5	4	5	5	5	5	34	98%	Excellent	A
13	5	5	5	5	5	5	5	35	100%	Excellent	A
14	4	5	5	5	3	5	5	32	94%	Excellent	A
15	4	4	5	5	3	5	5	31	92%	Excellent	A
16	4	4	5	5	3	5	5	31	92%	Excellent	A
17	4	5	5	5	3	5	5	32	94%	Excellent	A
18	4	5	5	5	3	5	5	32	94%	Excellent	A
19	5	5	5	5	5	5	5	35	100%	Excellent	A
20	5	3	3	5	3	5	5	29	89%	Good	B
21	4	3	5	5	4	5	5	31	92%	Excellent	A
22	4	3	5	5	5	5	5	32	94%	Excellent	A
23	5	3	3	5	4	5	5	30	90%	Excellent	A
24	4	5	4	5	4	5	5	32	94%	Excellent	A
25	4	5	3	5	4	5	5	31	92%	Excellent	A
26	3	3	4	5	3	5	5	28	85%	Good	B
27	3	4	4	5	4	5	5	30	90%	Excellent	A
28	4	3	4	5	4	5	2	27	81%	Good	B
29	4	4	5	5	4	5	5	32	94%	Excellent	A
30	5	5	5	5	4	5	5	34	98%	Excellent	A
31	3	4	5	5	5	5	5	32	94%	Excellent	A
32	3	3	3	3	2	5	5	24	70%	Good	B
33	3	3	2	3	3	5	5	24	70%	Good	B
34	5	5	4	4	4	5	5	32	94%	Excellent	A
35	3	3	3	3	3	5	5	25	74%	Good	B
36	3	3	4	4	3	5	5	27	81%	Good	B
37	0	0	0	0	0	0	0	0	0%	Very Poor	F
38	4	5	5	5	4	5	5	33	96%	Excellent	A
39	4	5	5	4	5	5	5	33	96%	Excellent	A
40	4	5	5	4	5	5	5	33	96%	Excellent	A
41	0	0	0	0	0	0	0	0	0%	Very Poor	F
42	3	3	3	3	3	5	5	25	74%	Good	B
43	3	5	5	3	3	5	5	29	89%	Good	B
44	4	5	5	5	5	5	5	34	98%	Excellent	A
45	3	3	3	5	3	5	5	27	81%	Good	B
46	4	4	5	5	5	5	5	33	96%	Excellent	A
48	3	3	3	3	2	5	5	24	70%	Good	B
49	5	2	2	3	3	5	5	25	74%	Good	B
50	2	2	2	3	3	5	5	22	66%	Fair	C
51	2	2	2	3	3	5	5	22	66%	Fair	C
52	2	2	2	3	3	5	5	22	66%	Fair	C
53	2	2	2	3	3	5	5	22	66%	Fair	C
54	2	2	2	3	3	5	5	22	66%	Fair	C
55	2	2	2	3	3	5	5	22	66%	Fair	C
56	3	2	2	3	4	5	5	24	70%	Good	B

TABLE 1
OAK TREE CONDITION ANALYSIS

Tree Number	Crown Development	Trunk Condition	Branch Structure	Twig Growth	Foliage	Insects/ Diseases	Roots	Total	Condition (%)	Class	Health Rating
57	5	5	5	5	5	5	5	35	100%	Excellent	A
58	4	2	5	5	5	5	3	29	89%	Good	B
59	2	3	3	2	3	5	5	23	69%	Fair	C
60	5	2	5	5	5	5	5	32	94%	Excellent	A
128	5	5	5	5	5	5	5	35	100%	Excellent	A
129	5	5	5	5	5	5	5	35	100%	Excellent	A
134	2	4	3	4	3	5	5	26	78%	Good	B
135	3	2	2	3	5	5	5	25	74%	Good	B
136	3	3	2	2	3	5	5	23	69%	Fair	C
138	5	5	5	5	5	5	5	35	100%	Excellent	A
139	5	5	5	5	5	5	5	35	100%	Excellent	A

TABLE 2
OAK TREE VALUATION

Tree Number	Trunk Diameters (inches) D1	D2	D3	Total	Method	Basic Value	Condition Value	Adjusted Value	Final Value
1	11	6	0	17	P	$31,600	100%	$31,600	$31,600
2	22	0	0	22	P	$45,100	81%	$36,711	$36,700
3	8	0	0	8	P	$7,300	60%	$4,344	$4,300
4	29	0	0	29	P	$64,000	100%	$64,000	$64,000
5	23	0	0	23	P	$47,800	100%	$47,800	$47,800
6	33	0	0	33	P	$74,800	100%	$74,800	$74,800
7	7	0	0	7	A	$7,600	74%	$5,609	$5,600
8	3	0	0	3	A	$1,600	78%	$1,242	$1,200
9	7	0	0	7	A	$7,600	81%	$6,186	$6,200
10	22	0	0	22	P	$45,100	100%	$45,100	$45,100
11	8	0	0	8	P	$7,300	81%	$5,942	$5,900
12	34	0	0	34	P	$77,500	98%	$75,950	$76,000
13	37	0	0	37	P	$85,600	100%	$85,600	$85,600
14	11	0	0	11	P	$15,400	94%	$14,476	$14,500
15	6	0	0	6	A	$4,700	92%	$4,324	$4,300
16	13	0	0	13	P	$20,800	92%	$19,136	$19,100
17	10	0	0	10	P	$12,700	94%	$11,938	$11,900
18	14	0	0	14	P	$23,500	94%	$22,090	$22,100
19	15	0	0	15	P	$26,200	100%	$26,200	$26,200
20	17	0	0	17	P	$31,600	89%	$28,124	$28,100
21	11	0	0	11	P	$15,400	92%	$14,168	$14,200
22	11	0	0	11	P	$15,400	94%	$14,476	$14,500
23	9	0	0	9	P	$10,000	90%	$9,000	$9,000
24	29	0	0	29	P	$64,000	94%	$60,160	$60,200
25	14	0	0	14	P	$23,500	92%	$21,620	$21,600
26	10	0	0	10	P	$12,700	85%	$10,820	$10,800
27	10	0	0	10	P	$12,700	90%	$11,430	$11,400
28	20	0	0	20	P	$39,700	81%	$32,316	$32,300
29	12	0	0	12	P	$18,100	94%	$17,014	$17,000
30	24	0	0	24	P	$50,500	98%	$49,490	$49,500
31	30	0	0	30	P	$66,700	94%	$62,698	$62,700
32	7	0	0	7	A	$7,600	70%	$5,320	$5,300
33	10	0	0	10	P	$12,700	70%	$8,890	$8,900
34	16	0	0	16	P	$28,900	94%	$27,166	$27,200
35	7	0	0	7	A	$7,600	74%	$5,609	$5,600
36	6	0	0	6	A	$4,700	81%	$3,826	$3,800
37	0	0	0	0	A	$175	0%	$0	$0
38	8	0	0	8	P	$7,300	96%	$7,008	$7,000
39	7	0	0	7	A	$7,600	96%	$7,296	$7,300
40	13	0	0	13	P	$20,800	96%	$19,968	$20,000
41	0	0	0	0	A	$175	0%	$0	$0
42	8	0	0	8	P	$7,300	74%	$5,387	$5,400
43	2	0	0	2	A	$910	89%	$810	$800
44	3	0	0	3	A	$1,600	98%	$1,568	$1,600
45	11	0	0	11	P	$15,400	81%	$12,536	$12,500
46	13	12	0	25	P	$53,200	96%	$51,072	$51,100

TABLE 2
OAK TREE VALUATION

Tree Number	Trunk Diameters (inches) D1	D2	D3	Total	Method	Basic Value	Condition Value	Adjusted Value	Final Value
48	3	0	0	3	A	$1,600	70%	$1,120	$1,100
49	8	0	0	8	P	$7,300	74%	$5,387	$5,400
50	6	0	0	6	A	$4,700	66%	$3,094	$3,100
51	3	0	0	3	A	$1,600	66%	$1,053	$1,100
52	2	0	0	2	A	$910	66%	$599	$600
53	3	0	0	3	A	$1,600	66%	$1,053	$1,100
54	2	0	0	2	A	$910	66%	$599	$600
55	3	0	0	3	A	$1,600	66%	$1,053	$1,100
56	6	0	0	6	A	$4,700	70%	$3,290	$3,300
57	22	0	0	22	P	$45,100	100%	$45,100	$45,100
58	16	10	0	26	P	$55,900	89%	$49,751	$49,800
59	2	0	0	2	A	$910	69%	$628	$600
60	4	0	0	4	A	$1,950	94%	$1,833	$1,800
128	15	0	0	15	P	$26,200	100%	$26,200	$26,200
129	20	0	0	20	P	$39,700	100%	$39,700	$39,700
134	16	0	0	16	P	$28,900	78%	$22,426	$22,400
135	3	0	0	3	A	$1,600	74%	$1,181	$1,200
136	3	0	0	3	A	$1,600	69%	$1,104	$1,100
138	12	7	6	25	P	$53,200	100%	$53,200	$53,200
139	4	0	0	4	A	$1,950	100%	$1,950	$2,000
								Total:	**$1,331,200**

NOTE:

Method: A = Actual replacement value, used for trees < or = 7" dBH
P = PRC value, used for trees > 7" dBH

TABLE 3
OAK TREE IMPACT SUMMARY

Tree Number	Impact	Protected Zone (sq ft)	Removal/ Encroachment (sq ft)	% Encroachment
1	Preserve	811	0	0%
2	Preserve	2,151	0	0%
3	Preserve	707	0	0%
4	Encroach	7,854	820	10%
5	Encroach	2,618	1,108	42%
6	Encroach	7,854	699	9%
7	Preserve	734	0	0%
8	Preserve	712	0	0%
9	Preserve	713	0	0%
10	Preserve	2,606	0	0%
11	Preserve	767	0	0%
12	Encroach	7,854	1,501	19%
13	Encroach	8,257	1,961	24%
14	Preserve	922	0	0%
15	Preserve	755	0	0%
16	Preserve	1,001	0	0%
17	Preserve	724	0	0%
18	Preserve	919	0	0%
19	Preserve	1,120	0	0%
20	Preserve	1,622	0	0%
21	Preserve	1,909	0	0%
22	Preserve	939	0	0%
23	Preserve	1,005	0	0%
24	Encroach	7,854	74	1%
25	Preserve	1,888	0	0%
26	Preserve	1,322	0	0%
27	Preserve	898	0	0%
28	Preserve	1,519	0	0%
29	Preserve	1,142	0	0%
30	Preserve	7,854	0	0%
31	Preserve	7,854	0	0%
32	Preserve	997	0	0%
33	Preserve	1,146	0	0%
34	Preserve	1,562	0	0%
35	Preserve	900	0	0%
36	Preserve	1,265	0	0%
37	Dead	0	0	0%
38	Preserve	707	0	0%
39	Preserve	791	0	0%
40	Preserve	1,008	0	0%
41	Dead	0	0	0%
42	Preserve	996	0	0%
43	Preserve	724	0	0%
44	Preserve	707	0	0%
45	Preserve	960	0	0%
46	Preserve	7,854	0	0%
48	Preserve	707	0	0%
49	Preserve	918	0	0%
50	Preserve	725	0	0%
51	Preserve	724	0	0%
52	Preserve	707	0	0%

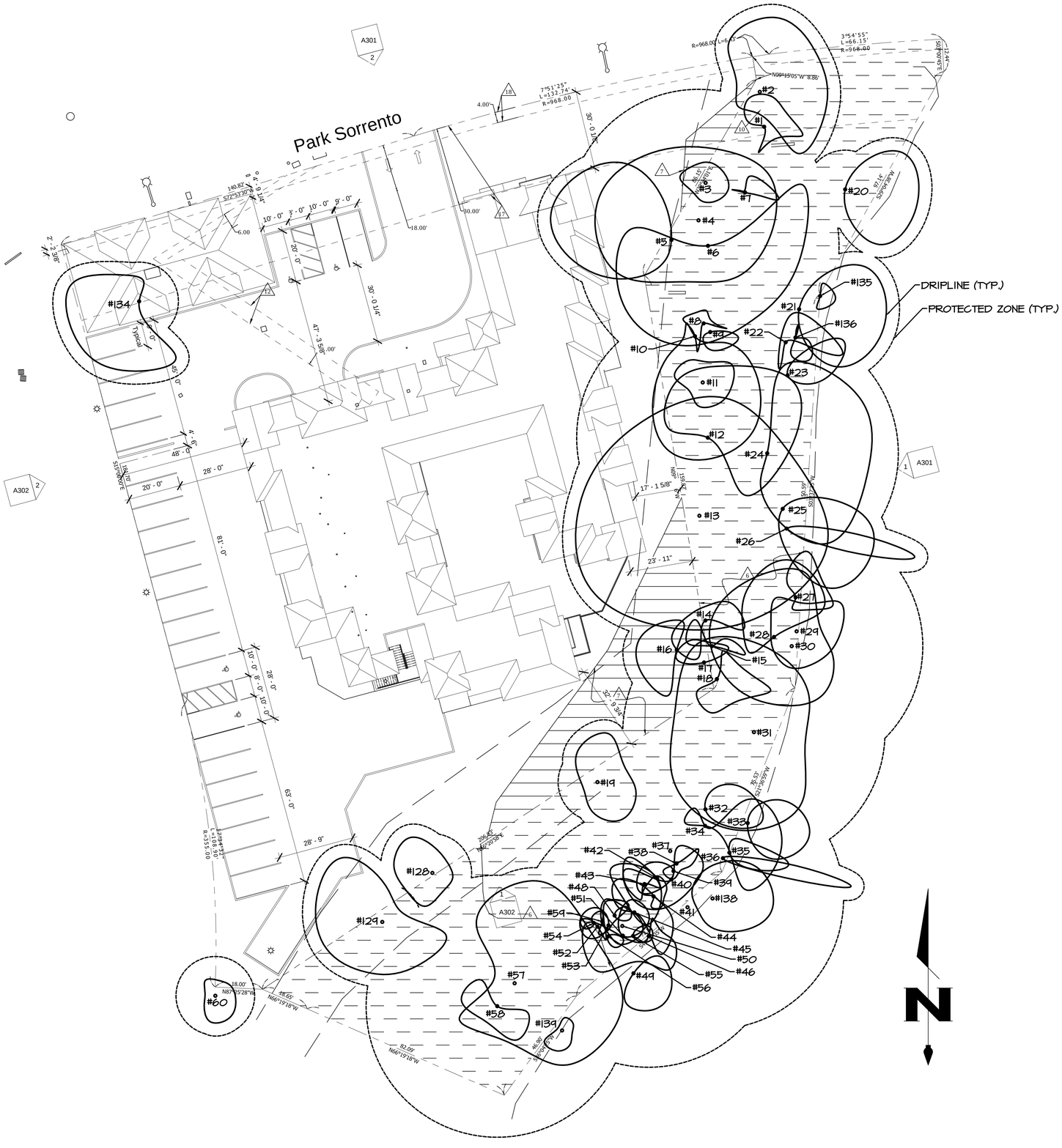
TABLE 3
OAK TREE IMPACT SUMMARY

Tree Number	Impact	Protected Zone (sq ft)	Removal/ Encroachment (sq ft)	% Encroachment
53	Preserve	718	0	0%
54	Preserve	707	0	0%
55	Preserve	707	0	0%
56	Preserve	786	0	0%
57	Preserve	4,064	0	0%
58	Preserve	7,854	0	0%
59	Preserve	707	0	0%
60	Preserve	710	0	0%
128	Preserve	926	0	0%
129	Encroach	2,198	598	27%
134	Remove	1,945	1,945	100%
135	Preserve	707	0	0%
136	Preserve	707	0	0%
138	Preserve	7,854	0	0%
139	Preserve	707	0	0%
Total		**139,580**	**8,706**	**6%**

Summary:	
Preserve	**56**
Encroach	**7**
Remove	**1**
Dead	**2**
Total	**66**

APPENDIX D – OAK TREE LOCATION MAP

TREE LOCATION MAP



General Notes

Firm Name and Address

Seven Elk Ranch Design Inc.
Kay J. Greeley, ASLA
Landscape Architect 4035
284 Valley Gate Road
Simi Valley, California 93065
(805) 577-8432
(406) 258-0398 fax

Project Name and Address

RAZNICK & SONS, INC.
23480 PARK SORRENTO
CALABASAS, CALIFORNIA 91302

Project	Sheet
Date 04/14/15	1
Scale 1" = 20'-0"	OF 1

APPENDIX D

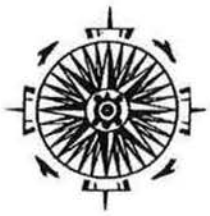
Phase I Archaeological Study

Phase I Archaeological Study:
23480 Park Sorrento,
City of Calabasas, Los Angeles County, California
(APN 2068-005-012)

Prepared for:
Rob Raznick
Raznick Reality Group
5525 Oakdale Ave.
Woodland Hills. CA 91364

Submitted by:
A. George Toren, B.A.
and
Gwen R. Romani, M.A., RPA

August 2015



Compass Rose
Archaeological, Inc.
18960 Nordhoff St., Northridge, CA. 91324
(818) 998-3116
compassrosearch@gmail.com

Table of Contents

Attachments

1.0 Introduction

This report describes the results of a Phase I archaeological study conducted by Compass Rose Archaeological, Inc. at 23480 Park Sorrento (APN 2068-005-012) located in the City of Calibasas, California (Figures 1 and 2). The Phase I study was conducted at the request of Mr. Rob Raznick of the Raznack Reality Group. The Phase I investigation encompassed the entire property.

This investigation was completed to determine if any cultural resources exist within the subject property, and to make preliminary recommendations regarding the potential significance of cultural resources in compliance with the California Environmental Quality Act (CEQA) guidelines (revised, to date), the California Register of Historical Resources, and the City of Calabasas cultural resource guidelines. This report has been prepared in accordance with state guidelines for the preparation of Archaeological Resource Management Reports (ARMR), proposed in the State of California Preservation Planning Bulletin No. 4(a) (State of California 1998) entitled *Archaeological Resource Management Reports* (ARMR): Recommended Contents and Format. The study included a review of site archives, conducted at the South Central Coastal Information Center (SCCIC), California State University, Fullerton, an intensive on-foot field survey of the property, and a report on the findings.

2.0 Project Location and Description

The proposed project is located at 23480 Park Sorrento within the City of Clabasas. Two existing Commercial buildings and a parking lot occupy the subject property. Plans are to demolish the existing buildings and construct new apartments. The property is within a neighborhood of existing apartment complexes with new construction ongoing to the west, Arroyo Calabasas to the east and south, and Park Sorrento to the north. The project area is within Section 23 Township 1 North, Range 17 West depicted on the USGS 7.5' Calabasas Quadrangle, (Figure 1).

Building plans entail the demolition of the present office buildings and the construction of a new apartment complex. Ground disturbance will involve removal and recompaction of the area of the existing buildings once they are removed. Proposed construction activities will disturb the present ground to an unknown depth. Since such construction would cause severe impacts to any cultural resources that may exist, the entire property was surveyed to determine their presence or absence.

3.0 Study Findings

No cultural resources have been previously recorded within the subject property. No recorded prehistoric and three historic cultural resources have been mapped within 0.5 mile of the property. Further, no cultural resources, either prehistoric or historical, were identified during the current field investigation.

4.0 Regulatory Requirements

4.1 California Register of Historical Resources

Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) consisting of the following criteria:

1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2) It is associated with the lives of persons important to local, California, or National History; or
3) It embodies the distinctive characteristics of a type, period, region, or method or construction, or represents the work of a master, or possesses high artistic values; or
4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

5.0 Background Information

5.1 Present Environment

The subject property is within a developed residential (apartments) and commercial neighborhood, with apartments situated to the north across Park Sorrento, and to the south, and west across Arroyo Calabasas. The property to the west is currently under development and has gone through extensive grading. The project property has been artificially terraced for the existing parking lot and building pads. The arroyo bank and buffer zone appears to be natural. Past disturbances include the grading for the existing parking lot, building pads and lawn area. Native vegetation has been removed except along the arroyo banks (riparian community) and at the northwest corner of the property (oaks).

5.2 Environmental Setting

5.2.1 Landform

The Santa Monica Mountains are part of the Transverse Ranges that extend approximately 40 miles (64 km) east-west from the Hollywood Hills in Los Angeles County to Point Mugu in Ventura County. This mountain range was created by repeated episodes of uplifting and submergence by the Raymond Fault that created complex layers of sedimentary rock. Volcanic intrusions have been exposed, including "Sandstone Peak," which is the highest in the range at 3110 ft (948 m). Malibu Creek, which bisects the range, eroded its own channel, while the mountains were slowly uplifted. The northern Channel Islands are considered to be a westward extension of the Santa Monica Mountains into the Pacific Ocean.

5.2.2 Flora

The natural vegetation of the Santa Monica Mountains area includes the following communities: chaparral, riparian woodland, coastal sage scrub, valley grassland, and southern oak woodland. These communities differ by species composition, spacing, and plant size based on natural conditions such as aspect, exposure, and moisture (Gamble and King 1997). Minor valley areas consist of oak savanna and woodlands, with significant stands of valley oaks (*Quercus lobata*) and coast live oaks (Q. agrifolia), that are also found in river bottoms and open grasslands. These trees would have yielded significant quantities of acorns, whereas the various native grasses bore numerous edible seeds, which would have been important food staples for the aboriginal inhabitants. Several edible bulb plants that are known to grow in the valley include wild onion (*Allium* spp.), blue dicks (*Brodiaea capitata*), and mariposa lilies (*Calochortus* spp.). A plant used for ceremonial purposes is Jimsonweed (*Datura meteloides)* or *toluache.*

5.2.2.1 Chaparral

Chaparral communities are found throughout the Transverse Range and exhibit xerophytic structures that are suitable for sustained periods of summer dry heat and/or draught conditions. Such characteristics include thick leathery leaves, reduced surface area, in a vertical position; rigid woody branches; extensive duel root system. These plants generally grow larger on north-facing slopes due to more favorable moisture conditions where there are lower evaporation rates from both the plants and soil. A number of the species that occur on north-facing slopes do not exist on south-facing slopes due to the overall drier conditions (Gamble and King 1997).

5.2.2.2 Riparian Woodland

This vegetation, which includes tall trees and some shrubs, occurs along streams, such as San Antonio Creek, and within small drainages. Various plants were used for structural materials and basketry.

5.2.2.3 Coastal Sage Scrub

This community is generally located on coastal-facing mountain slopes. These plants exhibit the same xerophytic characteristics as those in the Chaparral community, and many of the species are also shared (Gamble and King 1997).

5.2.2.4 Valley Grassland

This community is located in valleys, and throughout hills and mountains in well drained areas at all elevations. As a result of historical and modern grazing and cultivation practices, the introduction of non-native species has permanently altered the composition of the grasslands.

5.2.2.5 Southern Oak Woodland

This community is dominated by Coast Live Oaks, groves of which are located in valley grasslands,

river bottoms, on slopes and ridges. Slopes near most streams support southern oak woodlands, and many intermittent stream sites are of this community rather than riparian woodlands. An understory of smaller trees, shrubs, and herbal vegetation is an important aspect of the woodlands.

5.2.3 Fauna

A wide variety of terrestrial faunal resources can be found throughout the Santa Monica Mountains. The most important large land mammal that was procured by the Native Americans was the deer (*Odocoileus hemionus*), whereas small land mammals included three types of rabbits (cottontail rabbit - Sylvilagus *audboni*; brush rabbit - *Sylvilagus bachmani*; and blacktailed jack rabbit - *Lepus californicus*), and three rodents (ground squirrel - *Citelles beecheyi*; meadow mouse - Microtus *californicus*; and pocket gopher (*Thomomys bottae*). Although most mammals were found throughout the valley and surrounding mountains, their numbers and diversity were generally greater in grass/woodland/sagebrush communities (Gamble and King 1997).

5.3 Chronological Overview

Much of the following information regarding the prehistory along the Santa Barbara Channel area, including Malibu, is abstracted from King (1990 and 2000).

Chumash society developed within its historic boundaries for over 7500 years based on the continuity of mortuary practices, as well as the development of artifacts used in social activities. Prior to colonization by the Spanish, the long period of development of Chumash society was possible since the Santa Barbara Channel area contained a higher concentration of resources than adjacent areas, and the society occupying this area was more powerful than the surrounding societies. The length of time during which the indigenous Santa Barbara Channel society developed was long compared to the majority of extant societies, which acquired their territories more recently. At the time of the first European contact, Chumash society was uniquely adapted to its environments, and well organized as a result of their evolution over long periods of time.

5.3.1 Evidence of Earliest Occupation

Knowledge of occupations during the Pleistocene in the study area is very limited. This is due to the small size of early groups, and since charcoal, bones, and shells are not as likely to be preserved in earlier sites. Some early coastal sites were probably inundated or eroded away by the rise in sea level, associated with the melting of ice at the end of the Pleistocene. Also, it is difficult to define the earliest occupations at most early sites due to poor preservation of stratigraphic features. The earliest date of human occupation in the general Santa Barbara Channel area has not been determined, although it is believed that the area was settled prior to 11,000 years ago, since archaeological evidence does exist elsewhere throughout North America. The association of large fluted points in stratigraphic contexts with large Pleistocene animals at sites in the Great Plains and the Southwest indicates that the earliest populations in the western United States hunted large game animals. Recent discoveries of large fluted points on the California coast, including one in western Santa Barbara County, in addition to those found at Tulare Lake and at dry lakes in eastern California, indicate the presence of early large game hunters in southern California. The end of the

Pleistocene was marked by climatic warming and resulting changes in environmental conditions, which led to extinction or geographical displacement of most large Pleistocene animals. The changes in plants and animals caused by a changing environment, coupled with the growth of human populations, resulted in changes in subsistence patterns.

5.3.2 Early Period

The Early Period, which dates to approximately 6000-600 B.C., is the first period identified by archaeologists in California that contains the preserved remains of permanent settlements with associated cemeteries. Types of ornaments, charms, and other artifacts changed little throughout the period, although the numbers of artifact types increased, indicating a growth in social complexity. Several cemetery and residential contexts have been excavated in Chumash territory that are approximately 7000 years old. Artifacts and food remains recovered from these contexts indicate that people living along the cost were fishing with bone hooks, using boats or rafts to trade with the Channel Islands, and occasionally were taking sea mammals and large fish. The presence of deer bones, other animal bones, stone points, and knives indicates that hunting was also important.

Early mainland residential sites frequently contain large numbers of milling stones (manos and metates) believed to have been used to process small seeds. The mortar and pestle, historically used to pulp acorns and islay (wild cherry pits), although present, are not found in large numbers in early contexts. Because large seeds such as acorns and islay are not as consistently produced as smaller seeds, their use as staples required storage of large quantities for use in years of low crop yields. Obtaining and using new sources of energy required the development of a society able to store more food and make greater capital investments, such as building large boats and making large nets. The storage of ample amounts of food enabled people to increase their reliance on crops with widely fluctuating yields. There was a comparable increase in reliance on marine fishing both on the mainland and the islands.

Most early settlements consisted of small hamlets defensively situated on elevated landforms. During the Early Period, some settlements increased in size with the largest containing several hundred people. Large settlements were often less defensively situated than their smaller predecessors. Analysis of artifacts used to maintain social relationships and their distribution in mortuary contexts indicates that political power was largely dependent on the acquisition of wealth and ritual power (King 1990 and 2000).

Differences have long existed between archaeologists concerning the permanence of Early Period settlements. This diversity of opinion is a result of both inadequate information concerning the range of types of Early Period sites and the absence of a consensus regarding the causes of permanent settlements. The discovery of cemetery areas at many Early Period sites, the similar frequencies of artifact types found at most sites, and the frequent presence of later time period residential sites near Early Period sites, have been interpreted as reflecting the use of many Early Period sites as settlements (King 1990 and 2000). Large Early Period sites are surrounded by smaller, and possibly less permanent sites, of the same time period. The distribution of sites indicates that Early Period populations were distributed differently than those of the Middle and Late periods.

Evidently, during the Early Period, regional ceremonial centers were located at a few large settlements at major features of the landscape, such as points and sloughs. During the latter part of the Early Period, these centers were large, even in comparison with historic villages. Away from major centers, small to medium sized Early Period settlements are found near historic settlements and other Late Period sites, as well as on ridge tops, where little evidence for long term occupation during the later periods has been found. It appears that between large Early Period regional centers, most settlements were smaller and populations more dispersed than during later periods. Visits between settlements may have resulted in seasonal and even longer abandonment of many small settlements.

Differences in the contents of burial lots found at large and small Early Period settlements on Santa Cruz Island indicate that the occupants of large ceremonial centers had more valuable ceremonial regalia than those of small settlements. The inhabitants of small villages probably lived at more than one settlement during the year, and the inhabitants of large settlements may have maintained only one residence. Although the Early Period settlement pattern apparently resulted in the formation of many sites which were not continuously inhabited, the degree to which the population was sedentary may differ little from the Protohistoric Period.

5.3.3 Middle Period

The end of the Early Period and the beginning of the Middle Period (ca. 600 B.C.) is marked by changes in ornaments and other artifacts, as well as changes in the organization of cemeteries, which indicate the development of hereditary control of political and economic power. The presence of separate cemetery areas containing a predominance of either ritual objects or wealth objects at early Middle Period sites indicates the presence of a system of checks and balances between chiefs and priest-judge executioners. At the beginning of the Middle Period, the more powerful ritual objects, such as stone pipes, libation vessels, stone effigies, and pointed charmstones, were owned by people who were not political leaders but who had inherited rights to perform rituals. Similar systems of checks and balances were necessary to maintain stability in social systems throughout California, and these systems evolved shortly after the development of hereditary leadership positions. Similar changes in social organization occurred at the time of the Early-Middle period transition throughout North America and were accompanied by migrations into areas that were marginal to major population centers.

There was a tendency over time to choose less defensive village locations as villages became integrated into larger political units, and those away from important boundaries were less often the focus of surprise attacks. Changes in warfare and settlement situations indicate that, as economic integration increased in importance, there was a corresponding increase in the importance of political integration of large areas to protect the operation of the economic system. The importance of reducing warfare to enable trade is indicated by description of Chumash traditional history recorded from Fernando Librado by John P. Harrington. The descriptions indicate that one reason for the political integration of the Lulapin Province (central Chumash) was to reduce warfare which adversely affected trading (Hudson et al. 1977).

5.3.4 Late Period

Differentiation of bead types indicates the development of new economic subsystems. After ca. A.D. 1000, there was a rapid growth of systems which culminated in the highly developed economic system observed by the Spanish explorers. After the 1542 Cabrillo voyage, many small Chumash settlements were abandoned and some of the largest historic towns were founded. This change in population distribution can be attributed to growth in importance of trade centers and the development of more integrated political confederations, which were necessary to encourage trade. Their economic system enabled the Chumash to make efficient use of the wide diversity of environments present within their territory. Most of the plants and land animals used as food on the mainland were completely absent or present in low densities on the Channel Islands. Foods which could be easily stored, such as acorns, wild cherry pits, and seeds, were obtained by islanders in trade from the mainland. Since environments of people living in inland valleys lacked marine resources, fish and other sea foods were obtained from people living on the coast and from islanders trading at mainland coastal villages. The pooling of resources, which resulted from the development of their economic system, served to reduce the negative effects of local crop failures (King 1976 and 1990).

Religious institutions regulate behavior by molding perceptions of society and the physical world. Changes in the types and distributions of objects used in ritual contexts indicate corresponding changes in religious systems. The rarity of ritual objects in Late Period burial lots reflects control over religion by institutions that owned the ritual objects. By the Late Period, more powerful objects were controlled by institutions. Changes in whistles, historically used in the organization of ceremonies, indicate a growth in the importance of organized ceremonies. Objects associated with supernatural power, such as charmstones, effigies, and sunstick stones, did not change greatly over time. It appears that most Chumash religious ceremonies had their roots in the Early Period when objects similar to those used historically were regularly placed in mortuary associations and owned by religious leaders.

5.4 Ethnographic Overview

At the time of historic contact, the Malibu area was occupied by the Ventureño branch of the Chumash, who were a Hokan speaking people. The Chumash achieved a cultural complexity unique for hunter and gatherer groups in California. They possessed a stratified society containing an upper, middle, and lower class. Moreover, attributes usually attributed to chiefdom societies, such as ownership of resources/property, craft specialists, large permanent population centers (villages), a sodality consisting of religious elitists (Antap), and a market economy, were all a part of Chumash culture at the time of historic contact (Blackburn 1974).

Politically, there were at least six ethnographically known Chumash provinces. The following are the provinces from north to south and their corresponding capitals, respectively: 1) Gaviota (capital at *Shisholop or Upop)*; 2) Dos Pueblos (capital at *Mikiw)*; 3) Santa Barbara (capital at *Synhten)*; 4) Ventura (capital at *Shishopop)*; 5) Mugu (capital at *Muwu or Simomo*); and 6) Malibu (capital at *Humaliwu*). In addition, there were apparently two religious federations, *Muwu* and *Upop* (Hudson

and Underhay 1978:27-29).

All high status (Wots and shamans) or wealthy people were required to join a religious sodality known as the *Antap*. The *Antap* was the principal religious cult which dominated all aspects of Chumash religious and political society at the time of Spanish contact. Chumash religion could be accurately described as celestial, revolving around the worship of the sun, and various stars and planets comprising the Chumash pantheon (Sky People) (Blackburn 1975).

Traditionally, the Chumash were noted by the Spanish for their large domed houses, wood and stone craftsmanship, basketry, and foremost for the plank canoe (*tomol*). The implementation of the Spanish Mission system brought about a precipitous decline in the Chumash culture, with a disruption of the traditional social structure and a steady demise of the native population, caused in part by European diseases. This cultural decimation continued and perhaps was amplified during the post mission or Mexican period, until their near cultural extinction in the later Anglo (American) period. Chumash culture has been documented by John P. Harrington and C. Hart Merriam, and well summarized by Blackburn, Hudson, and others.

5.5 Historical Overview

Establishment of the Mission San Buenaventura in 1782, and the Mission San Fernando Rey de España in 1797, brought the first permanent European settlement into the area. Mission development brought agricultural operations into the Ventura, San Fernando Valley, and surrounding areas, as well as introduced European crops and animals. After secularization in 1834, former church lands became open to settlement. Potentially important early historic period sites include structures and features associated with the establishment of the mission and ranch operations.

In 1846, United States forces occupied California and in 1848 the U.S. formally gained control with the signing of the Treaty of Guadalupe Hidalgo. By 1850 the population, accelerated by the Gold Rush, had increased enough to justify admission to the Union. Following the brief mining frenzy, the economic focus began to shift from cattle ranching to farming and between 1860 and 1900; farming became the major industry of the area. The completion of the Southern Pacific Railroad line through the area in the 1880s accelerated growth by making access by immigrants easier. Potentially important sites from the American Period could include locations or structures from the early farming era (1850-1940s) and other structures from the early twentieth century associated with significant events, persons or early industry.

6.0 Sources Consulted

6.1 Results of Records Search

Background research to identify any previously recorded archaeological sites within the project vicinity was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, by W. H. Bonner on August 11, 2015. In addition, the National

Register of Historic Places (NRHP), the California Points of Historical Interest (CPHI), the California Historical Landmarks (CHL), and the California State Historic Resources Inventory (HRI) listings were reviewed for the proposed project location. No NRHP, CPHI, CHL, or HRI properties are listed at or within 0.25 mile of the project property.

Based on the records search, no prehistoric archaeological sites have been recorded within a 0.5-mile radius of the project property. Three historic sites, Leonis Adobe (recorded twice), Plummer House and the Sagebrush Cantina are within a 0.5-mile radius. A total of 11 cultural resource investigations have been conducted within the 0.5 mile radius. None of these studies addressed the subject property.

6.2 Native American Consultation

Gayle Totton, Program Analyst for the Native American Heritage Commission (NAHC), was contacted to conduct a search of the Sacred Lands File for both cultural materials and properties that may exist within the subject property. As of yet, no response has ben received from the NAHC.

7.0 Field Methods and Conditions

A. George Toren, who has a B.A. in Anthropology from CSUN, and over 30 years of professional archaeological experience in California, conducted the field survey on August 18, 2015. The field coverage consisted of walking linear transects spaced in approximately 5 meter intervals. Although the paved parking lot limited ground surface visibility, existing buildings, and lawn, planter areas, bare spots in the lawn and bare areas along the arroyo banks allowed for inspection of the ground surface (approximately 20 percent).

7.1 Results of the Field Investigation

7.1.1 Prehistoric Resources

No prehistoric cultural resources were encountered within the project property.

7.1.2 Historical Resources

No historical archaeological resources were encountered within the project property.

8.0 Remarks

A cultural resource investigation was conducted for the property located at 23480 Park Sorrento Drive in the City of Calabasas California. The study consisted of a records search and an intensive on-foot survey of the subject property. The records search indicated that no prehistoric cultural resources have been previously recorded within 0.5 mile of the property; and no evidence of any prehistoric or historical occupation or use was observed during the field survey. The subject property has been impacted by previous development which would have severely

impacted or destroyed any cultural resources should any had been present. Field inspection of the more intact arroyo banks did not indicate any evidence of prehistoric or historic occupation.

9.0 Recommendations

Since no cultural resources have been recorded or newly encountered within the subject property and based on past disturbances, no further archaeological work is warranted at this time. In the unlikely event that buried cultural resources are unearthed during any construction activities, all work must halt at that locality until a qualified archaeologist can properly evaluate such resources. If human remains are unearthed during future construction, State Health and Safety Code Section 7050.5 states that" ... no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98.

10.0 Certification

Prepared by: A. George Toren, Project Manager, Compass Rose Archaeological, Inc.
Submitted by: Gwen R. Romani M.A., R.P.A., Principal Investigator, Compass Rose Archaeological, Inc.

Signature	Date: August 25, 2015
	

11.0 Maps

Attachment A
Figure 1: Project Location and Vicinity Map: USGS 7.5' Calabasas Quadrangle,
Figure 2: Existing Site Plan

12.0 Photographs

Attachment B
Photographs: Photographs 1-4 (File Number: CR: 1524-S/15)

13.0 References

Blackburn, Thomas

1974 Ceremonial Integration and Social Interaction in Aboriginal California. In *'Antap: California Indian Political and Economic Organization,* edited by Lowell Bean and Thomas King.

1975 *December's Child: A Book of Chumash Oral Narratives.* University of California Press, Berkeley.

Gamble, Lynn H., and Chester King

1997 Middle Holocene Adaptation in the Santa Monica Mountains, pp. 61-72, *Archaeology of the California Coast During the Middle Holocene,* edited by J.M. Erlandson and M.A. Glassow, Perspectives in California Archaeology Volume 4, Institute of Archaeology, University of California, Los Angeles.

Grant, Campbell

1978 Eastern Coastal Chumash. In: *California*, edited by R.F. Heizer, pp 505-508. Handbook of the North American Indians, Vol.8, W. C. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

Hudson, Travis, Thomas Blackburn, Rosario Curletti, and Janice Timbrook (editors)

1977 The Eye of the Flute: Chumash Traditional History and Ritual as Told by Fernando Librado *Kitsepawit* to John P. Harrington. *The Santa Barbara Bicentennial Historical Series* No. 4. Santa Barbara Museum of Natural History, Santa Barbara.

Hudson, Travis, and Ernest Underhay

1978 Crystal in the Sky: An Intellectual Odyssey Involving Chumash Astronomy, Cosmology, and Rock Art. *Ballena Press Anthropological Papers* No. 10, edited by Lowell J. Bean and Thomas C. Blackburn. Ballena Press, Socorro, New Mexico.

King, Chester D.

1976 Chumash Inter-Village Economic Exchange. In *Native Californians: A Theoretical Retrospective*, edited by Lowell J. Bean and Thomas C. Blackburn. Ballena Press, Socorro, New Mexico.

1990 *Evolution of Chumash Society: A Comparative Study of Artifacts Used in Social System Maintenance in the Santa Barbara Channel Region Before A.D. 1804*. Revised Ph.D. dissertation, with a new preface and updated bibliography. In the Evolution of North American Indians, a 31-Volume series of outstanding dissertations edited by David Hurst Thomas. New York, Garland Publishing.

2000 Native American Indian Cultural Sites in the Santa Monica Mountains. Prepared for the Santa Monica Mountains and Seashore Foundation Funded Under Cooperative Agreement No. 8540-94-003 with the National Park Service Pacific West Region, Santa Monica Mountains National Recreation Area.

ATTACHMENT A:
Figures 1 and 2

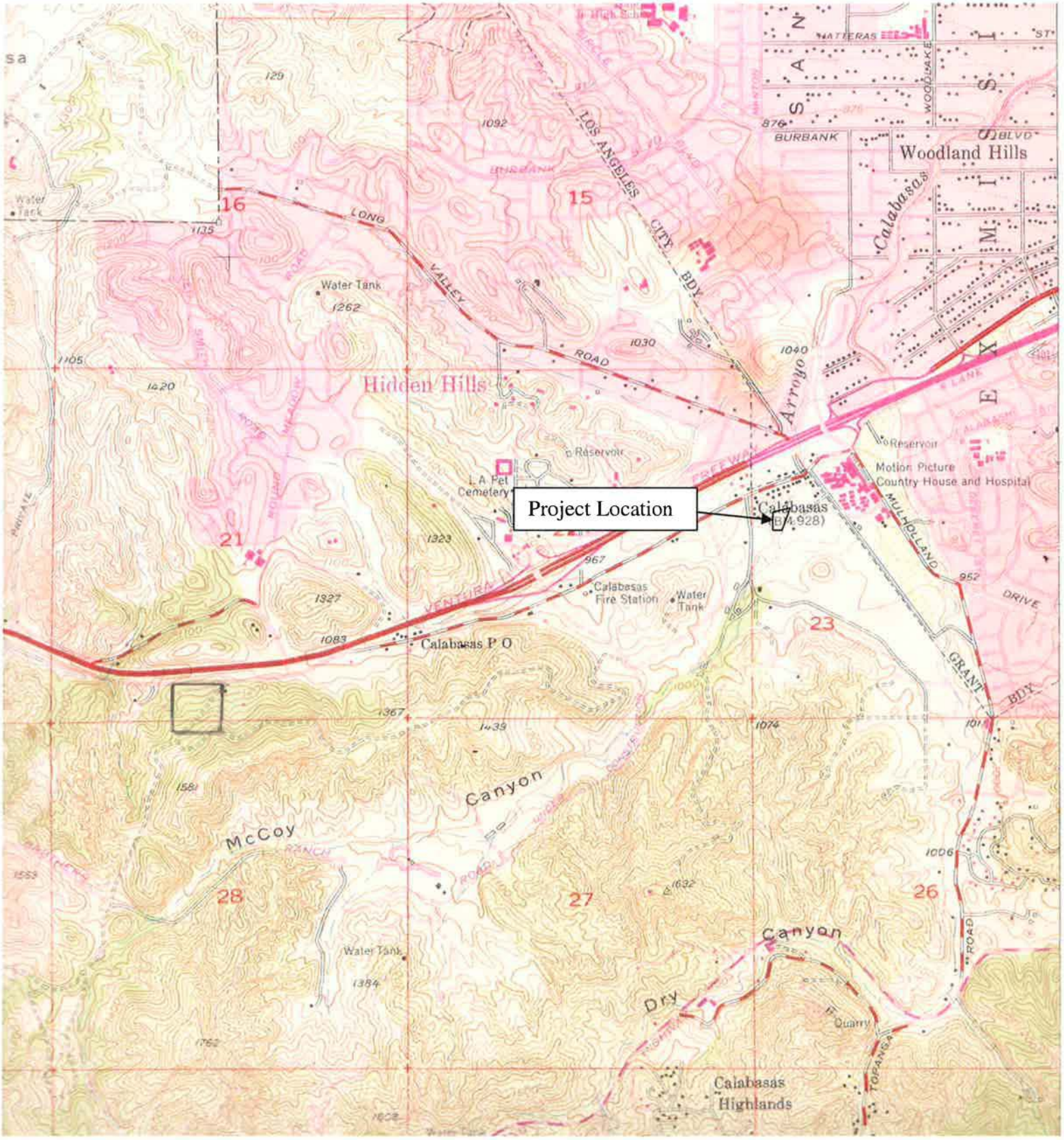
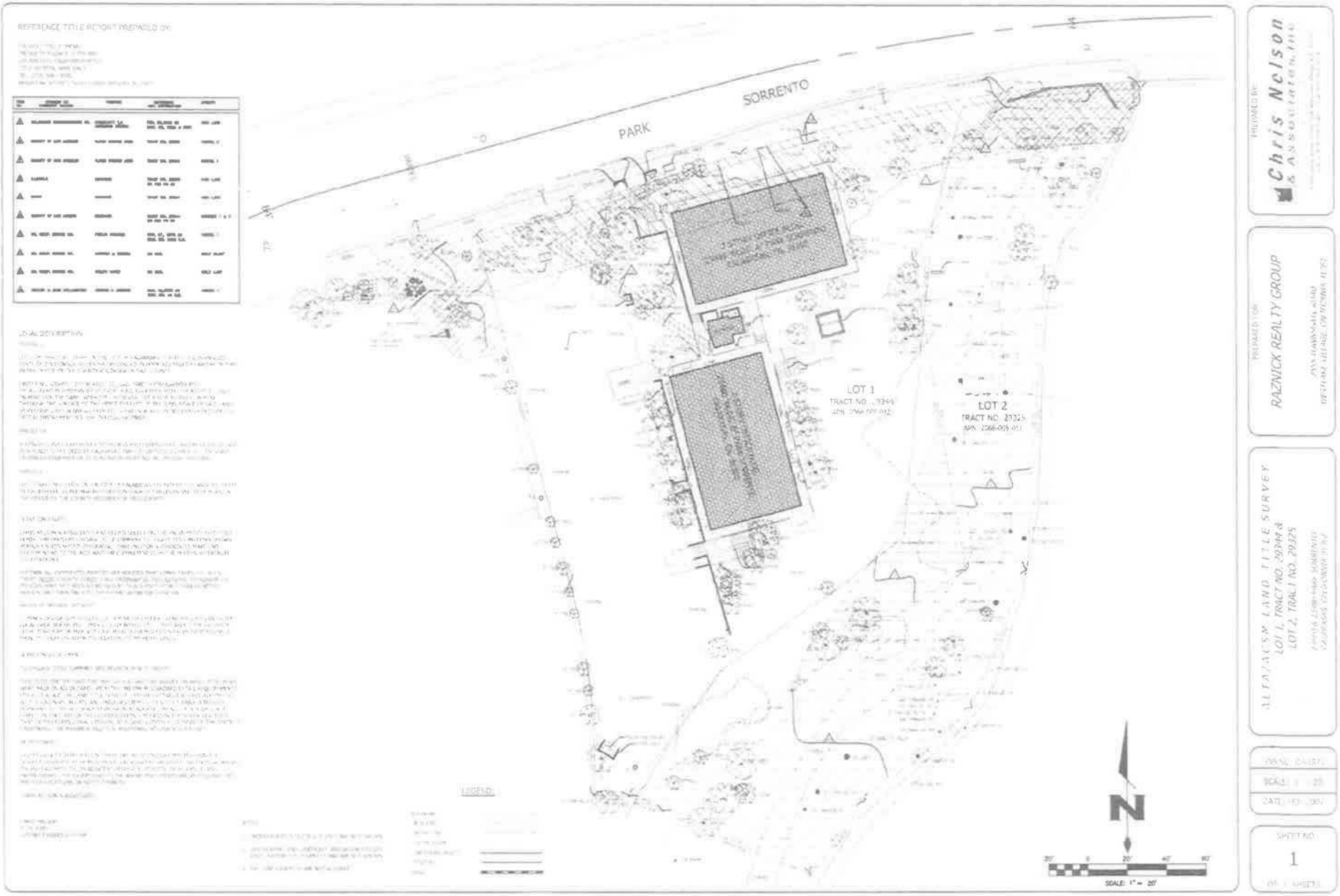


Figure 1
Project Location and Vicinity Map
23480 Park Sorrento, Calabasas
Portion of USGS 7.5' Calabasas Quadrangle
Scale 1:24,000



Fighre 2
Existing Sitr Plan
23480 Park Sorrento

ATTACHMENT B:
Photographs 1-4

Photograph 1: overview to west from northeast corner 23480 Park Sorrento.

Photograph 2: overview to south, from northeast corner 23480 Park Sorrento.

Photograph 3: overview to north showing lawn area at rear of property 23480 Park Sorrento

Photograph 4: overview to north showing existing parking lot along west property line, 23480 Park Sorrento.

ATTACHMENT C:
Records Search Results

W.H. Bonner Associates

RPA

August 11, 2015

Mr. Dan Larson
Compass Rose Archaeological, Inc.
18960 Nordhoff Street
Northridge, CA 91324

Subject: Records Search Results for Project, *Calabasas CA* 7.5' Quadrangle

SCCIC Invoice 15344

Dear Dan:

At your request, W. H. Bonner Associates has conducted a records search for your project located in Section 23 Township 1 North, Range 17 West on the *Calabasas, CA* Quadrangle USGS 7.5-minute topographic maps.

The purpose of the records check is to identify all previously recorded cultural resources (prehistoric and historic archaeological sites, historic buildings, structures, objects, or districts), as required by Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations 36 CFR Part 800. It entails a review of all previously recorded prehistoric and historic archaeological sites situated within a half-mile radius of the project area, as well as a review of all cultural resource survey and excavation reports. The records search was conducted on August 11, 2015, at the South Central Coastal Information Center (SCCIC), California State University, Fullerton.

To identify any historic properties, the rolls of the National Register of Historic Places (NRHP), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI) are examined. The California State Historic Resources Inventory (HRI) is also reviewed to determine local resources previously evaluated for their historic significance.

The results of the records search indicate

- No prehistoric archaeological sites have been recorded within a half-mile radius of the project site.

- Four historic archaeological site/structures have been recorded within a half-mile radius of the project site (Table 1).

Table 1. Historic Sites Plotted within the Half-mile Search Radius

Resource #	Description	Location
LAn-0964/H	1844 Leonis Adobe 23537 Calabasas Road	700 feet northeast of the project area
19-173142	1870's Plummer House 23537 Calabasas Road	725 feet northwest of the project area
19-187331	Sagebrush Cantina 23527 Calabasas Road Not eligible for NR listing	800 feet northeast of the project area
19-187332	1844 Leonis Adobe 23537 Calabasas Road	700 feet northeast of the project area

- Eleven area-specific survey/excavation reports are on file with the SCCIC for the half-mile vicinity (Table 2). None of these reports assessed the project location.

Table 2. Survey Reports on File at the SCCIC for the Half-mile Search Radius

Report #	Author	Coverage
LA-00136	Wlodarski, Robert J. 1984	Did not assess the project location
LA-00843	Van Buren, G. E. 1974	Did not assess the project location
LA-01197	Wlodarski, R. and R. Pence 1979	Did not assess the project location
LA-02409	Steele, K. and A. Gallardo 1982	Did not assess the project location
LA-02977	Singer, Clay, et al. 1994	Did not assess the project location
LA-03546	Wlodarski, Robert J. 1996	Did not assess the project location
LA-03742	Romani, John F. 1982	Did not assess the project location
LA-04466	No Author 1988	Did not assess the project location
LA-06939	Duke, Curt 2002	Did not assess the project location
LA-06595	Bonner, Wayne H. 2001	Did not assess the project location
LA-10208	Sylvia, Barbara 2001	Did not assess the project location

- No HRI or CPHI properties are listed at or within a half-mile of the project address.

- The NRHP lists the Leonis Adobe (NR75000433 (see above)

- The CHL lists the Plummer House CHL 160 (see above)

- Review of the historic 1932 Dry Canyon, CA 6' USGS topographic quadrangle indicates that the direct Area of Potential Effect (APE) was undeveloped at that time.

We appreciate this opportunity to assist you on your project. If we can be of any further assistance, or if you have any questions concerning this letter, please do not hesitate to contact our office at (310) 675-2745 or via e-mail, whbonner@aol.com.

Sincerely,

Wayne H. Bonner

Wayne H. Bonner, M.A.
RPA Certified Archaeologist #10085

Report List

Invoice #15345

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-00136		1984	Wlodarski, Robert J	Negative Archaeological Survey Report for Mulholland Drive/valley Circle Overcrossing	John Romani and Robert Wlodarski	
LA-00842		1974	Van Buren, G E	Kraushaar Tract, Diamond Bar Ranch, Los Angeles County, California	G&S Archaeological Site Survey Team	
LA-01197		1979	Wlodarski, Robert J. and Roben L. Pence	An Evaluation of the Impact Upon Cultural Resources by the Proposed Development of Tentative Tract No. 37824, Calabasas, Ca	Pence Archaeological Consulting	
LA-02409		1962	Stella, Kenneth and Albert Gallardo	For improvements of the Operational Characteristics of Route 101, the ventura Freeway in Los Angeles and Ventura Counties. Between Route 405 in Los Angeles, and the Santa Clara River in Oxnard	Caltrans and Federal Highway Commission	56-000654
LA-02977		1994	Singer, Clay A., John E Atwood, Shelley Gomes, and Marcy Leitherm	A Preliminary Cultural Resources Report for the Old Town Calabasas Master Plan, Los Angeles County, California	C A. Singer & Associates, Inc	19-000964
LA-03546		1996	Wlodarski, Robert J.	A Phase 1 Archaeological Study Bikeway Gap Closure Project Cities of Calabasas, Agoura Hills, Westlake Village and Unincorporated Los Angeles County, California	Historical, Environmental, Archaeological, Research, Team	19-000041, 19-000042, 19-000229, 19-000238, 19-000243, 19-000315, 19-000320, 19-000415, 19-000420 19-000463, 19-000467, 19-000669 19-000842, 19-000862, 19-000890, 19-000972, 19-001021, 19-001027, 19-001099, 19-001352, 56-000071, 56-000095, 56-000096, 56-000179, 56-000186, 56-000242, 56-000261, 56-000341, 56-000342, 56-000737, 56-000865
LA-03742		1982	Romani, John F	Archaeological Survey Report for the 07 Ia/ven 101 Project P m, 17 1-38 2/0 0-22 7 07351 - 076620	California Department of Transportation	19-000041, 19-000042, 19-000044, 19-000111, 19-000133, 19-000238, 19-000315, 19-000320, 19-000321, 19-000345, 19-000420, 19-000461 19-000462, 19-000463, 19-000464, 19-000465, 19-000642, 19-000669, 19-000776, 19-000862, 19-000890, 19-000964, 19-000970, 19-000972, 19-001027, 19-001064, 19-001099, 56-000271, 56-000565, 56-000820 55-000654
LA-04486		1988		Finding of No Adverse Effect Mulholland Drive and Valley Circle Boulevard Interchange		19-000964

Report List

Invoice #15345

Report No	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-06139		2002	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. Vy-084-04 Los Angeles County, California	LSA Associates, Inc.	
LA-06595		200[illegible]	Bonner, Wayne H.	Records Search Results for Sprint Pcs Facility La54xc914b (escalente Site), Located at 23335 Mulholland Drive, Woodland Hills in Los Angeles County, California	Michael Brandman Associates	
LA-10208		2001	Sylvia, Barbara	Negative Archaeological Survey Report Metal Beam Guardrail (MBGR) Along Sections of Route 101 From Route 134 to the Ventura County Line.	Caltrans District 7	

ATTACHMENT D:
Native American Heratage Commission Response
(Pending)

APPENDIX E

Preliminary Geotechnical Engineering Investigation

GeoConcepts INC
Geology - Geotechnical Engineering

PRELIMINARY GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed Three Story Building Over At-Grade Parking Garage

Tract: 29344, Lot: 1

23480 Park Sorrento

Calabasas, California

for

Rob Raznick

Raznick Realty Group

5525 Oakdale Avenue

Woodland Hills, California 91364

Project 5032

September 30, 2015

www.GeoConceptsInc.com
14428 Hamlin Street, #200, Van Nuys, CA 91401 + (818) 994-8895 Office + (818) 994-8599 Fax

PRELIMINARY GEOTECHNICAL ENGINEERING INVESTIGATION

TABLE OF CONTENTS

APPENDICES

INTRODUCTION

This report presents the results of a Preliminary Geotechnical Engineering Investigation on a portion of the subject property. The purpose of this investigation has been to ascertain the subsurface conditions pertaining to the proposed project. The work performed for the project included reconnaissance mapping, description of earth materials, obtaining representative samples of earth materials, laboratory testing, engineering analyses, and preparation of this report. Results of the project include findings, conclusions, and appropriate recommendations.

SCOPE

The scope of this investigation included the following:

- Review of preliminary plans by Ken Stockton Architect, Inc.
- Review of (7) borings. Explorations were backfilled with the excavated materials but not compacted.
- Preparation of the enclosed Plot Map and Cross Sections, (see Appendix I).
- Sampling of representative earth materials, laboratory testing, and engineering analyses (see Appendix II).
- Review of referenced materials, available public reports at the City of Calabasas (see Appendix V).
- Presentation of findings, conclusions, and recommendations for the proposed project.

Chris Nelson & Associates, Inc. prepared the topographic base map utilized in this investigation. Preliminary building plans were overlain on the base map. It consists of one sheet plotted to a scale of one-inch equals forty feet.

The scope of this investigation is limited to the project area explored as depicted on the Plot Map. This report is not a comprehensive evaluation of the entire property. This report has not been prepared for use by other parties or for purposes other than the proposed project. GeoConcepts, Inc. should be consulted to determine if additional work is required when our work is used by others or if the scope of the project has changed. If the project is delayed for more than one year, this office should be contacted to verify the current site conditions and to prepare an update report.

PROPOSED DEVELOPMENT

It is our understanding that the site will be developed with a three story building over an at-grade parking. The proposed development is depicted on the enclosed Plot Map and Cross-Sections.

Grading will consist of conventional cut and fill methods. Final grading and structural plans have not been prepared and await the conclusions and recommendations of this investigation. These plans should be reviewed by GeoConcepts, Inc. to ensure that our recommendations have been followed.

Anticipated foundations will range from 2 to 3 kips per lineal foot and 150-300 kips for column foundations

SITE DESCRIPTION

Location and Description

Access to the property is via Park Sorrento (see Location Map in Appendix I). The site is developed with a two story office building and paved parking lot. The pad has a light growth of vegetation consisting of lawn areas, shrubs and trees. Vegetation is moderately dense to dense in the natural areas on the descending slopes consisting of grasses, shrubs and trees.

The proposed development area is bounded to the east and south by a creek and a swim and tennis club east of the creek. The site to the west is currently under construction for multi-story condominiums. Park Sorrento bounds the site to the north.

Topography

Topographically, the property is situated in a generally flat area of a valley within the south-west corner of the San Fernando Valley. The property essentially consists of a near-level pad with descending slopes to the east and south. Maximum topographic relief in the development area is about (10) feet. Descending slopes display a general gradient of 3:1 or less, (horizontal to vertical). Details of the topography are depicted on the Location Map and Plot Map in Appendix I.

Drainage

Surface water at the site consists of direct precipitation onto the property. Much of this water drains as sheet flow to low-lying areas and the creek. Portions of the yard are serviced by an irrigation system.

Groundwater

Surface water was observed in the creek. The subsurface exploration did encounter groundwater at a depth of (19) feet. Previous borings at the site prior consultants encountered groundwater at a depth of (20) and (21) feet. The depth to groundwater, when encountered in the explorations, is only valid for the date of exploration. Based on the Seismic Hazard Zone Report by the California Geological Survey (formerly Division of Mines and Geology), the depth to historical high groundwater level is about (10) feet below the surface. Seasonal fluctuations of groundwater levels may occur by varying amounts of rainfall, irrigation and recharge.

FIELD EXPLORATION

The scope of the field exploration was developed based on the preliminary plans of the proposed development available at the time of the exploration and was limited to the area of the proposed development. The locations of the explorations are depicted on the Plot Map and Cross Sections. The field exploration was limited by existing structures, hardscape, and/or underground utilities on the site.

The field exploration of the site was conducted on August 28 and 28, 2015. The geotechnical conditions were mapped by a representative of this office (refer to Exploration Logs). Subsurface exploration was performed by a hallow-stem drill rigs. Explorations were excavated to a maximum depth of (32.5) feet. All explorations were backfilled and tamped upon completion of down-hole observation. However, some settlement within exploration areas should be anticipated.

Detailed descriptions of the earth materials encountered during the field exploration are provided in the Boring Logs in Appendix I.

Undisturbed and bulk samples representative of the earth materials were obtained and transported to our laboratory. Undisturbed Modified California (MC) samples and Standard Penetration Test (SPT) samples were obtained within the explorations through the use of a 140 pound drop hammer dropped thirty inches (30"). MC samples were retained in brass rings of two and one-half inches (2½") in diameter and one inch (1") in height. SPT samples were retained in brass tubes of one and one-half inches (1½") in diameter and six inches (6") in height. The samples were transported in moisture tight containers. The results of the laboratory testing and a summary of the test procedures are included within Appendix II.

SUMMARY OF FINDINGS

Previous Work

The subject property was graded and developed prior to 1972 as a parking lot. No geology and/or geotechnical reports were found on file at the City of Calabasas covering the original construction of the site. Subsequently to the use as a parking lot, geotechnical reports covering the site were found on file at the City of Calabasas, Department of Building and Safety.

The subject site was previously explored by Geolabs, Inc. in their report dated June 9, 1972. Three test pits were excavated to a maximum depth of (9.5) feet. The site explorations generally encountered fill materials and alluvium. The findings state a maximum thickness of (9) feet of uncertified fill over alluvium. The subject site was also previously explored by LT Evans, Inc. in their report dated March 1, 1973 for an office building. Three borings were drilled to a maximum depth of (33) feet. The site explorations generally encountered fill materials, alluvium and bedrock. The findings state a maximum thickness of (8) to (10) feet of uncertified fill over alluvium. The earth materials encountered by the previous consultant are similar to the materials currently encountered. A compaction report by LT Evans dated July 25, 1973 shows the uncertified fill in the area of the proposed office building was removed to alluvium and replaced as certified compacted fill. A copy of the exploration logs by LT Evans is included herein (see Appendix I).

Stratigraphy

The site is underlain by marine sedimentary rocks of Miocene time, which are covered by Quaternary (Q) earth materials and artificial fill. The earth materials encountered on the subject property are briefly described below. Approximate depths and more detailed descriptions are given in the enclosed Exploration Logs (see Appendix I).

Artificial Fill (Af)

Artificial fill was encountered on the subject site. Fill materials were presumably placed during pad grading. Fill was encountered in all of the borings ranging from (7.5) to (11) feet in thickness. Contact between the fill and the underlying alluvium was exposed within the exploratory borings. Fill generally consists of silty and clayey sand and bedrock materials. The approximate limit of the existing fill is shown on the attached plot map and cross sections.

Quaternary Alluvium (Qal)

Alluvial deposits occupy the site. Alluvium is weathered bedrock material and sediments that have been eroded from natural slopes and deposited in generally flat lying areas. Alluvium is thickest on the east portion of the site near the creek and thin and pinch out near the west property line. Alluvium primarily consists of light to dark brown, firm, silty sand to gravelly sand. These deposits were encountered within all of the exploratory borings ranging from (3) to (21) feet in thickness.

Bedrock (Mmu)

Bedrock underlying the Holocene deposits is assigned to the Modelo Formation of Miocene time. Bedrock generally consists of shale and mudstone beds. The beds are essentially gray and brown with occasional orange oxidation, locally well cemented, moderately to slightly weathered and dense. The contact between the alluvium and bedrock is approximately located on the plot map and cross sections.

Excavation Characteristics

Subsurface exploration was performed through the use of hallow-stem drill rig excavating into fill, alluvium and bedrock. The bedrock encountered during the exploration consists of sedimentary rock. At the site, bedrock was observed to be moderately cemented. Although excavation difficulty is considered normal, it should be noted that the bedrock is a layered formation and hard or well cemented bedrock may be encountered. Cohesionless sandy material, although easy to remove, may be subject to sloughing and caving. Therefore difficulty may be encountered maintaining an open excavation. Fine grained materials such as clays and silts may increase in density with depth due to overburden pressure. Thus, difficulty excavating into the material may increase with depth.

Landslides

Landslides are a mass wasting phenomenon in mountainous and hillside areas which include a wide range of movements. In Southern California common slope movements include shallow surficial slumps and flows, deep-seated rotational and translational bedrock failures, and rock

falls. Landslides occur when the stability of the slopes change to an unstable condition resulting from a number of factors. Common natural factors include the physical and/or chemical weathering of earth materials, unfavorable geologic structure relative to the slope geometry, erosion at the toe of a slope, and precipitation. These factors may be further aggravated by human activities such as excavations, removal of lateral support at the toe of a slope, surcharge at the top of a slope, clearing of vegetation, alteration of drainage, and the addition of water from irrigation and leaking pipes.

Ancient or recent bedrock landslides were not observed on the property. Also, no recent surficial slope failures or slumps were observed within the proposed project area on the property.

Seismic Hazards

Earthquake Faults

The Alquist-Priolo Earthquake Fault Zoning (AP) Act was passed into law following the destructive February 9, 1971 San Fernando earthquake. The intent of the Act is to increase public safety by reducing the siting of most structures for human occupancy across an active fault. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The property is not located within an Alquist-Priolo Earthquake Fault Zone. The general locations of major faults within Southern California are depicted on a fault map provided by the USGS in Appendix I.

Seismic Effects

During an earthquake there are several primary geologic hazards such as ground rupture, ground shaking, landslides, and liquefaction that can adversely affect property, structures, and improvements. On hillside properties, the potential exists for landsliding from ground shaking which may adversely affect property, structures, and improvements. The State of California has prepared maps that detail areas which may require assessment for ground rupture, landsliding and/or liquefaction. Strong ground shaking is the primary hazard that causes damage from earthquakes and these areas have been zoned with a high level of seismic shaking hazard. The historical earthquake record in Southern California is less than 200 years; therefore, potential damage from a seismic event is not limited areas that have experienced damage in the past. Based on the above discussion, earthquake insurance with building code upgrades is suggested.

There are several active and/or potentially active faults that could possibly affect the site within Los Angeles County. The site is located within Seismic Zone 4. Although all of Southern California is within a seismically active region, some areas have a higher potential for seismic damage than others. The current scientific technology does not provide for accurate prediction of the time, location, or magnitude of an earthquake event.

It should be understood that the following discussion is an evaluation of risk and degree of potential damage to a structure if a fault were to rupture on or near the site and does not imply

that a fault may or may not be present beneath the site. An assessment of damage to the structure is based on the Modified Mercalli Intensity Scale which is correlated to observed damage from seismic events. Intensity/damage associated with an earthquake is not directly correlated to magnitude. For a given magnitude of an earthquake, the intensity/damage to a structure may vary depending on the subsurface earth materials, type of fault rupture, hypocenter depth, and local building practices in effect during the construction of a structure.

An evaluation of the seismic effects on a property is designed to provide the client with rational and believable seismic data that could affect the property during the lifetime of the proposed improvements. The minimum design acceleration for a project is listed in the Building Code. It is recommended that the structural design of the proposed project be based on current design and acceleration practices of similar projects in the area. The project structural designer should review and verify all of the seismic design parameters prior to utilizing the information for the design.

Ground Rupture

Ground rupture is the result of movement from an active fault. A fault is a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side. No known active fault is mapped on the subject site.

Ground Shaking

Ground shaking caused by an earthquake is likely to occur at the site during the lifetime of the development due to the proximity of several active and potentially active faults. Generally, on a regional scale, quantitative predictions of ground motion values are linked to peak acceleration and repeatable acceleration, which are a response to earthquake magnitudes relative to the fault distance from the subject property. Southern California major earthquakes are generally the result of large-scale earth processes in which the Pacific plate slides northwestward relative to the North American plate at about 2 inches/year.

The potential for lurching, surface manifestations, landslides, and topographic related features from ground/seismic shaking can occur almost anywhere in Southern California. Proper maintenance of properties can mitigate some of the potential for these types of manifestations, but the potential cannot be completely eliminated. Many structures were built before earthquake codes were adopted; others were built according to codes formulated when less was known about the intensity of near-fault shaking. Therefore, the margin of safety is difficult to quantify.

A publicly available computer program provided by the United States Geological Survey (USGS) was utilized for the probabilistic prediction of peak horizontal ground acceleration from digitized design maps of Maximum Considered Earthquake (MCE) ground response. A summary of the seismic design parameters is provided in Appendix III. The project structural designer should verify all of the input parameters and review all of the resulting seismic design parameters prior to utilizing the information for the design.

Earthquake Induced Landslides

The State of California has prepared Seismic Hazard Zone Reports to regionally map areas of potential increased risk of permanent ground displacement based on historic occurrence of landslide movement, local topographic expression, and geological and geotechnical subsurface conditions. The maps may not identify all areas that have potential for earthquake-induced landsliding, strong ground shaking, or other earthquake-related geologic hazards. The subject site is not located within an earthquake-induced landslide hazard zone on the State of California Seismic Hazard Map.

Based on the stability analysis earthquake-induced landslide hazard at the subject site is low.

Liquefaction

The State of California has prepared Seismic Hazard Zone Reports to regionally map areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacement. The maps may not identify all areas that have potential for liquefaction, strong ground shaking, and other earthquake and geologic hazards. The subject site is located within a liquefaction hazard zone on the State of California Seismic Hazard Zone Map.

Liquefaction is a process by which sediments below the water table temporarily lose strength and behave as a viscous liquid rather than a solid. The types of sediments most susceptible are clay-free deposits of sand and silts; occasionally gravel liquefies. Liquefaction can occur when seismic waves, primarily shear waves, pass through saturated granular layers distorting the granular structure, and causing loosely packed groups of particles to collapse. These collapses increase the pore-water pressure between grains if drainage cannot occur. If the pore-water pressure rises to a level approaching the weight of the overlying soil, the granular layer temporarily behaves as a viscous liquid rather than a solid.

In the liquefied condition, soil may deform with little shear resistance; deformations large enough to cause damage to buildings and other structures are called ground failures. The ease with which a soil can be liquefied depends primarily on the looseness of the material, the depth, thickness and areal extent of the liquefied layer, the ground slope and the distribution of loads applied by buildings and other structures.

Liquefaction induced ground deformations (detailed below) will have an effect on the proposed and existing development that can result in significant structural damage, collapse or partial collapse of a structure, especially if there is significant differential settlement or lateral spreading between adjacent structural elements. Even without collapse, significant settlement or lateral spreading could result in significant structural damage including, but not limited to, blocked doors and windows that could trap occupants.

Liquefaction analysis of the soils underlying the subject site was performed using the computer program LiquefyPro by CivilTech Software. The program is based on the NCEER Workshop and SP117A implementation. The following geology input parameters were adopted for the analysis.

Earthquake Magnitude	Peak Horizontal Ground Acceleration	Groundwater Level During Testing	Groundwater Level During Earthquake
7.02	0.657	19	10

Surface Manifestations

The determination of whether surface manifestation of liquefaction (such as sand boils, ground fissures etc.) will occur during earthquake shaking at a level-ground site can be made using the method outlined by Ishihara (1985). It is emphasized that settlement may occur, even with the absence of surface manifestation. Youd and Garris (1994 and 1995) evaluated the Ishihara method and concluded that the method is not appropriate for level ground sites subject to lateral spreading and/or ground oscillation.

Based upon the recommended compacted fill cover surface manifestations of liquefaction should not pose any significant hazard to the proposed development provided the recommendations contained within this report are followed and maintained.

Lateral Spreads

Whereas the potential for flow slides may exist at a building site, the degradation in undrained shear resistance arising from liquefaction may lead to limited lateral spreads (of the order of feet or less) induced by earthquake inertial loading. Such spreads can occur on gently sloping ground or where nearby drainage or stream channels can lead to static shear stress biases on essentially horizontal ground (Youd, 1995). At larger cyclic shear strains, the effects of dilation may significantly increase post liquefaction undrained shear resistance. However, incremental permanent deformations will still accumulate during portions of the earthquake load cycles when low residual resistance is available. Such low resistance will continue even while large permanent shear deformations accumulate through a ratcheting effect. Such effects have recently been demonstrated in centrifuge tests to study liquefaction induced lateral spreads, as described by Balakrishnan et al. (1998). Once earthquake loading has ceased, the effects of dilation under static loading can mitigate the potential for a flow slide.

It is clear from past earthquakes that damage to structures can be severe, if permanent ground displacements on the order of several feet occur. However, during the Northridge earthquake significant damage to building structures (floor slab and wall cracks) occurred with less than one (1) foot of lateral spread. The complexities of post-liquefaction behavior of soils noted above, coupled with the additional complexities of potential pore water pressure redistribution effects and the nature of earthquake loading on the sliding mass, lead to difficulties in providing specific guidelines for lateral spread evaluations.

Based upon the liquefaction analysis and correct $N_1(60)$ blow counts liquefaction lateral spreads should not pose any significant hazard to the proposed development.

Seismically Induced Settlements

Seismic settlement occurs when cohesionless soils densify as result of ground shaking. Typically seismically induced settlement is greatest in loose cohesionless sands. Lee and Albaisa (1974) and Yoshimi (1975) studied the volumetric strains (or settlements) in saturated sands due to dissipation of excess pore pressures generated in saturated granular soils by the cyclic ground motions. The volumetric strain, in the absence of lateral flow or spreading, results in settlement. Liquefaction-induced settlement could result in collapse or partial collapse of a structure, especially if there is significant differential settlement between adjacent structural elements. Even without collapse, significant settlement could result in blocked doors and windows that could trap occupants.

The soils encountered at the subject site consist of silty sand and sand. Based upon the liquefaction analysis, liquefaction induced settlement is estimated to be 2.78 inch and differential settlement of 1.84 inch.

CONCLUSIONS

1. Based on the results of this investigation and a thorough review of the proposed development, as discussed, the project is suitable for the intended use providing the following recommendations are incorporated into the design and subsequent construction of the project. Also, the development must be performed in an acceptable manner conforming to building code requirements of the controlling governing agency.

2. Based on the State of California Seismic Hazard Maps, the subject site is located within a liquefaction hazard zone. Based upon the liquefaction analysis, liquefaction induced settlement is estimated to be 2.78 inch and differential settlement of 1.84 inch.

3. Based on the State of California Seismic Hazard Maps, the subject site is not located within an earthquake-induced landslide hazard zone.

4. The SITE CLASS based on California Building Code is D.

5. Based upon field observations, laboratory testing and analysis, the sandy alluvial materials found in the exploratory borings should possess sufficient strength to support the recommended compacted fill and proposed three story structure over at-grade parking provided that the recommendations in the report are followed and maintained.

RECOMMENDATIONS

Specific

1. To create a uniform building pad for the structure, the existing fill should be removed to competent alluvium and replaced as compacted fill. In addition, the proposed removals should extend a minimum of ten feet below the proposed foundations.

2. The proposed structure should be supported on foundations embedded into recommended compacted fill.
3. The soils chemistry results should be incorporated into the design of the proposed project.
4. The property owner shall maintain the site as outlined in the Drainage and Maintenance Section.

Building Setbacks

The construction of buildings and structures on or adjacent to slopes steeper than 3:1 (horizontal to vertical) in gradient shall be setback from the slopes in accordance with the requirements of the applicable governmental agency.

In general, all foundations on or adjacent to a descending slope shall be located a distance of one-third of the vertical height of the slope (H/3) to provide vertical and lateral support for the foundation. This distance is measured horizontally from the face of the foundation to the face of the bearing material. This horizontal distance does not need to exceed (40) feet. Where the slope is steeper than 1:1 (horizontal to vertical), the required setback shall be measured from an imaginary plane at (45) degrees to the horizontal, projected upward from the toe of the slope.

In general, buildings and structures on or adjacent to an ascending slope shall be located a distance of one-half of the vertical height of the slope (H/2) to provide sufficient protection from slope drainage, erosion, and shallow failures. This distance is measured horizontally from the face of the building/structure to the toe of the slope. This horizontal distance does not need to exceed (15) feet. Where the slope is steeper than 1:1 (horizontal to vertical), the toe is considered to be at the intersection of a horizontal plane from the top of the foundation and an imaginary plane tangent to the slope at (45) degrees to the horizontal.

Drainage and Maintenance

Maintenance of properties must be performed to minimize the chance of serious damage and/or instability to improvements. Most problems are associated with or triggered by water. Therefore, a comprehensive drainage system should be designed and incorporated into the final plans. In addition, pad areas should be maintained and planted in a way that will allow this drainage system to function as intended. The property owner shall be fully responsible for dampness or water accumulation caused by alteration in grading, irrigation or installation of improper drainage system, and failure to maintain drain systems. The following are specific drainage, maintenance, and landscaping recommendations. Reductions in these recommendations will reduce their effectiveness and may lead to damage and/or instability to the improvements. It is the responsibility of the property owner to ensure that improvements, structures and drainage devices are maintained in accordance with the following recommendations and the requirements of all applicable government agencies.

Drainage

Positive pad drainage should be incorporated into the final plans. The pad should slope away from the footings at a minimum five percent slope for a horizontal distance of ten feet. In areas where there is insufficient space for the recommended ten foot horizontal distance concrete or other impermeable surface should be provided for a minimum of three feet adjacent the structure. Pad drainage should be at a minimum of two percent slope where water flow over lawn or other planted areas. Drainage swales should be provided with area drains about every fifteen feet. Area drains should be provided in the rear and side yards to collect drainage. All drainage from the pad should be directed so that water does not pond adjacent to the foundations or flow toward them. Roof gutters and downspouts are required for the proposed structures and should be connected into a buried area drain system. All drainage from the site should be collected and directed via non-erosive devices to a location approved by the building official. Area drains, subdrains, weep holes, roof gutters and downspouts should be inspected periodically to ensure that they are not clogged with debris or damaged. If they are clogged or damaged, they should be cleaned out or repaired.

Landscaping (Planting)

The property owner is advised not to develop planter areas between patios, sidewalk and structures. Planters placed immediately adjacent to the structures are not recommended. If planters are proposed immediately adjacent to structures, impervious above-grade or below-grade planter boxes with solid bottoms and drainage pipes away from the structure are suggested. All slopes should be maintained with a dense growth of plants, ground-covering vegetation, shrubs and trees that possess dense, deep root structures and require a minimum of irrigation. Plants surrounding the development should be of a variety that requires a minimum of watering. It is recommended that a landscape architect be consulted regarding planting adjacent to improvements. It will be the responsibility of the property owner to maintain the planting. Alterations of planting schemes should be reviewed by the landscape architect.

Irrigation

An adequate irrigation system is required to sustain landscaping. Over-watering resulting in runoff and/or ground saturation must be avoided. Irrigation systems must be adjusted to account for natural rainfall conditions. Any leaks or defective sprinklers must be repaired immediately. To mitigate erosion and saturation, automatic sprinkling systems must be adjusted for rainy seasons. A landscape architect should be consulted to determine the best times for landscape watering and the proper usage.

Pools/Plumbing

Leakage from a swimming pool or plumbing can produce a perched groundwater condition that may cause instability or damage to improvements. Therefore, all plumbing should be leak-free.

Grading and Earthwork

Proposed grading will consist of removal and recompaction to create a relatively uniform building pad.

Remedial grading is recommended within the building areas in order to remove the existing fill. Based on the conditions encountered in the explorations the recommended removals are anticipated to depths of about 10 feet from the existing grade. The over-excavation should extend a minimum of ten feet beyond the building perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates exterior columns (such as for an overhang) the over-excavation should also encompass these areas.

Following the completion of the over-excavation, the subgrade soils should be evaluated by the project geotechnical engineer to verify their suitability to support the structural fill as well as to support the foundation loads of the proposed development. This evaluation may include probing and proof-rolling to identify any soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if additional fill materials or dry, loose, porous or otherwise unsuitable materials are encountered at the base of the over-excavation.

Flatland Grading

1. Prior to commencement of work, a pre-grading meeting shall be held. Participants at this meeting will consist of the contractor, the owner or his representative, and the soils engineer. The purpose of the meeting is to avoid misunderstanding of the recommendations set forth in this report that might cause delays in the project.

2. Prior to placement of fill, all vegetation, rubbish, and other deleterious material should be disposed of offsite. The proposed structures should be staked out in the field by a surveyor. This staking should, as a minimum, include areas for overexcavation, toes of slopes, tops of cuts, setbacks, and easements. All staking shall be offset from the proposed grading area at least five feet (5'). Line and grade verification is not provided by GeoConcepts, Inc.

3. The natural ground, that is determined to be satisfactory for the support of the filled ground, shall then be scarified to a depth of at least six inches (6") and moistened as required. The scarified ground should be compacted to at least 90 percent of the maximum laboratory density (ASTM D 1557).

4. The fill soils shall consist of materials approved by the project Soils Engineer or his representative. These materials may be obtained from the excavation areas and any other approved sources, and by blending soils from one or more sources. The material used shall be free from organic vegetable matter and other deleterious substances, and shall not contain rocks greater than eight inches (8") in diameter nor of a quantity sufficient to make compaction difficult.

5. The approved fill material shall be placed in approximately level layers six inches (6") thick, and moistened as required. Each layer shall be thoroughly mixed to attain uniformity of moisture in each layer.

   When the moisture content of the fill is (3) percent or more below the optimum moisture content, as specified by the Soils Engineer, water shall be added and thoroughly mixed in until the moisture content is within (3) percent of the optimum moisture content.

   When the moisture content of the fill is (3) percent or more above the optimum moisture content as specified by the Soils Engineer, the fill material shall be aerated by scarifying or shall be blended with additional materials and thoroughly mixed until the moisture content is within (3) percent or less of the optimum moisture content.

   Each layer of fill material shall be compacted to a minimum of (90) percent of the maximum dry density as determined by ASTM D 1557, using approved compaction equipment. Where cohesionless soil having less than (15) percent finer than (0.005) millimeters is used for fill, the fill material shall be compacted to a minimum of (95) percent of the maximum dry density.

6. Review of the fill placement should be provided by the Soils Engineer or his representative during the progress of grading. In general, density tests (ASTM D 1556) and (*ASTM D 2922 & 3017*) will be made at intervals not exceeding two feet (2') of fill height or every 500 cubic yards of fill placed.

7. During the inclement part of the year, or during periods when rain is threatening, all fill that has been spread and awaits compaction shall be compacted before stopping work for the day or before stopping because of inclement weather. These fills, once compacted, shall have the surfaces sloped to drain to one area where water may be removed.

   Work may start again, after the rainy period, once the site has been reviewed by the Soils Engineer and he has given his authorization to resume. Loose materials not compacted prior to the rain shall be removed and aerated so that the moisture content of these fills will be within (3) percent of the optimum moisture content.

   Surface materials previously compacted before the rain, shall be scarified, brought to the proper moisture content, and re-compacted prior to placing additional fill, if deemed necessary by the Soils Engineer.

Foundations

It is recommended that the proposed structure be founded into compacted fill.

The minimum continuous footing size is (18) inches wide and (24) inches deep into the compacted fill, measured from the lowest adjacent grade. Continuous footings may be proportioned, using a bearing value of (2500) pounds per square foot. Column footings placed into the compacted fill may be proportioned, using a bearing value of (3000) pounds per square foot, and should be a minimum of (2) feet in width and (24) inches deep, below the lowest adjacent grade.

All continuous footings shall be reinforced with a minimum of (4) #(5) bars, two placed near the top and two near the bottom. Reinforcing recommendations are minimums and may be revised by the structural engineer.

The bearing values given above are net bearing values; the weight of concrete below grade may be neglected. These bearing values may be increased by one-third (1/3) for temporary loads, such as, wind and seismic forces.

All footing excavation depths will be measured from the lowest adjacent grade of recommended bearing material. Footing depths will not be measured from any proposed elevations or grades. Any foundation excavations that are not the recommended depth into the recommended bearing materials will not be acceptable to this office.

Lateral loads may be resisted by friction at the base of the conventional foundations with a maximum embedment of (4) feet and by passive resistance within the compacted fill. A coefficient of friction of (0.4) may be used between the foundations and the compacted fill. The passive resistance may be assumed to act as a fluid with a density of (250) pounds per cubic foot.

Settlement

Settlement of the proposed three story residence will occur. Settlement of (1/4) to (1/2) inches between walls, within 20 feet or less, of each other, and under similar loading conditions, are considered normal. Total settlement on the order of (1/2) inches should be anticipated.

Expansive Soils

Expansive soils were not encountered on the subject property that are anticipated to affect the proposed development. Expansive soils can be a problem, as variation in moisture content will cause a volume change in the soil. Expansive soils heave when moisture is introduced and contract as they dry. During inclement weather and/or excessive landscape watering, moisture infiltrates the soil and causes the soil to heave (expansion). When drying occurs the soils will shrink (contraction).

Repeated cycles of expansion and contraction of soils can cause pavement, concrete slabs on grade and foundations to crack. This movement can also result in misalignment of doors and windows. To reduce the effect of expansive soils, foundation systems are usually deepened and/or provided with additional reinforcement design by the structural engineer. Planning of yard improvements should take into consideration maintaining uniform moisture conditions around structures. Soils should be kept moist, but water should not be allowed to pond. These designs are intended to reduce, but will not eliminate deflection and cracking and do not guarantee or warrant that cracking will not occur.

Excavations

Excavations ranging in vertical height up to ten (10) feet will be required for the remedial grading. Conventional excavation equipment may be used to make these excavations. Excavations should expose sandy alluvial materials. These soils are suitable for vertical excavations up to five feet, portions of the excavation above five feet should be trimmed back at a 1:1 (h:v) slope gradient. This should be verified by the project geotechnical engineer during construction so that modifications can be made if variations in the soil occur.

All excavations should be stabilized within 15 days of initial excavation. If this time is exceeded, the project geotechnical engineer must be notified, and modifications, such as shoring or slope trimming may be required. Water should not be allowed to pond on top of the excavation, nor to flow toward it. All excavations should be protected from inclement weather. This is required to keep the surface of the open excavation from becoming saturated during rainfall. Saturation of the excavation may result in a relaxation of the soils which may result in failures. Excavations should be kept moist, not saturated, to reduce the potential for raveling and sloughing during construction. No vehicular surcharge should be allowed within three feet (3') of the top of cut.

Excavations Maintenance – Erosion Control

The following recommendations should be considered a part of the excavation/erosion control plan for the subject site and are intended to supplement, but not supersede nor limit the erosion control plans produced by the Project Civil Engineer and/or Qualified SWPPP Developer. These recommendations should be implemented during periods required by the Building Code (typically between the months of October and April) or at any time of the year prior to a predicted rain event. Consideration should also be given to potential local sources of water/runoff such as existing drainage pipes or irrigation systems that remain in operation during construction activities.

Open Excavations:

All open excavations shall be protected from inclement weather, including areas above and at the toe of the excavation. This is required to keep the excavations from becoming saturated. Saturation of the excavation may result in a relaxation of the soils which may result in failures. Water/runoff should be diverted away from the excavation and not be allowed to flow over the excavation in a concentrated manner.

Hillside Excavations:

All hillside excavations shall be protected during inclement weather and should extend beyond the edges of the excavations in all directions. Plastic sheeting along with stakes, ropes and sandbags may be used to provide protection of the excavations. Water/runoff should be diverted away from the excavation and not be allowed to flow over the excavation.

The project Civil Engineer should provide a plan depicting the required limits of erosion control. Slopes around an open excavation should be trimmed to slope away from the open excavation so that water/runoff will not drain into the excavation. Any trees or planters that might cause failures around an open excavation shall be anchored safely. After the inclement weather has ceased, the excavations shall be reviewed by the project geotechnical engineer and geologist for safety prior to recommencement of work.

Open Trenches/Foundation Excavations:

No water should be allowed to pond adjacent to or flow into open trenches. All open trenches shall be covered with plastic sheeting that is anchored with sandbags. Areas around the trenches should be sloped away from the trenches to prevent water runoff from flowing into or ponding adjacent to the trenches.

After the inclement weather has ceased, the excavations shall be reviewed by the project geotechnical engineer and geologist for safety prior to recommencement of work. Foundation excavations that remain open during inclement weather shall be reviewed by the project geotechnical engineer and geologist prior to the placement of steel and concrete to ensure that proper embedment and contact with the bearing material have been maintained.

Open Pile/Caisson Excavations:

All pile/caisson excavations should be reviewed and poured prior to the onset of inclement weather. It is not recommended that any pile/caisson excavations remain open through any inclement weather. However, if it is necessary to leave pile/caisson excavations open during inclement weather, all water and runoff shall be diverted away from and prevented from entering the pile/caisson excavations. Pile/caisson excavations that remain open during inclement weather shall be reviewed by the project geotechnical engineer and geologist prior to the placement of steel and concrete to ensure that proper embedment has been maintained. The base of all end-bearing caissons shall be re-cleaned to ensure contact with the proper bearing material. All stockpiled cuttings from the pile borings shall be removed.

Grading In Progress:

During the inclement time of the year, or during periods prior to the onset of rain, all fill that has been spread and is awaiting compaction shall be compacted before stopping work for the day or before stopping work because of inclement weather. These fills, once compacted, shall have the surface sloped to drain to one area where water may be removed.

Additionally, it is suggested that all stock-piled fill materials be covered with plastic sheeting. This action will reduce the potential for the moisture content of the fill from becoming too high for compaction. If the fill stockpile is not covered during inclement weather, then aerating the fill to reduce the moisture content would be required. This action is generally very time consuming and may result in construction delays.

Work may recommence, after the rain event, once the site has been reviewed by the project geotechnical engineer.

Decking

Exterior decking slabs on grade should be reinforced with minimum #4 reinforcing bars, placed at (16) inches on center each way and supported on compacted fill. Provisions for cracks should be incorporated into the design and construction of the decking. Concrete slabs should have sufficient control joints spaced at a maximum of approximately 8 feet. Decking planned adjacent to lawns, planters or adjacent to descending slopes should be provided with a 12-inch thickened edge. The deck reinforcement should be bent down into the edge. These recommendations are considered minimums unless superseded by the project structural engineer. Prior to placing the concrete the subgrade should be raised to 120 percent of the optimum moisture content to a depth of 18 inches.

Paving

It is recommended that the existing fill materials be removed and recompacted with the upper two compacted to (95) percent of the maximum density for support of the proposed paving.

Asphaltic concrete paving will be required for the driveways and car parking areas. Pavement sections are given below for various types of vehicle use. The sections are based upon “Traffic Indexes” (T.I.’s) for cars, light trucks and trucks/buses. Multiple sections are provided so that the entire site may be designed based upon the proposed use. The use of the appropriate section design greatly affects the life span and maintenance cost of the paving.

Vehicle Use	T.I.	Pavement Section (in.)	Base Course Section (in.)
Car Parking Areas/Light Traffic	3.5	3	5
Heavy Traffic/Light Trucks	6	4	10
Trucks/Buses/Driveways	9	6	15

Concrete paving shall have a minimum thickness of 5 inches and shall be underlain by 4 inches of aggregate base. A subgrade modulus of 120 pounds per cubic inch may be assumed for design of concrete paving. Slabs on grade should be reinforced with minimum #4 reinforcing bars, placed at (16) inches on center each way. These recommendations are considered as minimum unless superceded by the structural engineer. For standard crack control maximum expansion joint spacing of 15 feet should not be exceeded. Lesser spacings would provide greater crack control. Joints at curves and angle points are recommended.

Slough Protection

Some surficial erosion/surficial slope failures may occur during inclement weather. In order to mitigate this possible occurrence from impacting improvements all slopes should be planted and maintained as described in the Drainage and Maintenance section. In addition, deep-rooted shrubs should be planted in staggered rows that do not exceed 10 feet on center over the slope face.

REVIEWS

Plan Review and Plan Notes

The final grading, building, and/or structural plans shall be reviewed and approved by the consultants to ensure that all recommendations are incorporated into the design or shown as notes on the plan.

The final plans should reflect the following:

1. The Preliminary Geotechnical Engineering Investigation by GeoConcepts, Inc. is a part of the plans.

2. Plans must be reviewed and signed by GeoConcepts, Inc.

3. The project geotechnical engineer must review all grading.

4. The project geotechnical engineer shall review all foundations.

Construction Review

Reviews will be required to verify all geotechnical work. It is required that all footing excavations, seepage pits, and grading be reviewed by this office. This office should be notified at least **two working days** in advance of any field reviews so that staff personnel may be made available.

The property owner should take an active role in project safety by assigning responsibility and authority to individuals qualified in appropriate construction safety principles and practices. Generally, site safety should be assigned to the general contractor or construction manager that is in control of the site and has the required expertise, which includes but not limited to construction means, methods and safety precautions.

LIMITATIONS

General

This report is intended to be used only in its entirety. No portion or section of the report, by itself, is designed to completely represent any aspect of the project described herein. If any reader requires additional information or has questions regarding this report, GeoConcepts, Inc. should be contacted.

Subsurface conditions were interpreted on the basis of our field explorations and past experience. Although, between exploratory excavations, subsurface earth materials may vary in type, strength and many other properties from those interpreted. The findings, conclusions and recommendations presented herein are for the soil conditions encountered in the specific

locations. Earth materials and conditions immediately adjacent to, or beneath those observed may have different characteristics, such as, earth type, physical properties and strength. Other soil conditions due to non-uniformity of the soil conditions or manmade alterations may be revealed during construction. If subsurface conditions differ from those encountered in the described exploration, this office should be advised immediately so that further recommendations may be made if required. If it is desired to minimize the possibility of such changes, additional explorations and testing can/should be performed.

Findings, conclusions and recommendations presented herein are based on experience and background. Therefore, findings, conclusions and recommendations are professional opinions and are not meant to indicate a control of nature.

This preliminary report provides information regarding the findings on the subject property. It is not designed to provide a guarantee that the site will be free of hazards in the future, such as but not limited to, landslides, slippage, liquefaction, expansive soils, differential settlement, debris flows, seepage, concentrated drainage or flooding. It may not be possible to eliminate all hazards, but homeowners must maintain their property and improve deficiencies to minimize these hazards.

This report may not be copied. If you wish to purchase additional copies, you may order them from this office.

111 Statement

It is the opinion of this corporation, based upon the subsurface data, that the proposed project will be safe from landslide, settlement, or slippage and will not adversely affect adjacent property, provided this corporation's recommendations and those of the City of Calabasas and the Building Code are followed and maintained.

CONSTRUCTION NOTICE

Construction can be challenging. GeoConcepts, Inc. has provided this report to advise you of the general site conditions, geotechnical feasibility of the proposed project, and overall site stability. It must be understood that the professional opinions provided herein are based upon subsurface data, laboratory testing, analyses, and interpretation thereof. Recommendations contained herein are based upon surface reconnaissance and minimum subsurface explorations deemed suitable by your consultants.

Although quantities for foundation concrete and steel may be estimated based on the findings provided in this report, provision should be made for possible changes in quantities during construction. If it is desired to minimize the possibility of such changes, additional exploration and testing should be considered. However, you must be aware that depths and magnitudes will most likely vary between explorations given in the report.

We appreciate the opportunity of serving you on this project. If you have any questions concerning this report, please contact the undersigned.

Respectfully submitted,
GEOCONCEPTS, INC.

Scott J. Walter
Project Engineer
GE 2476
SJW/SRS: 5032-1

Distribution: (4) Addressee

APPENDIX I

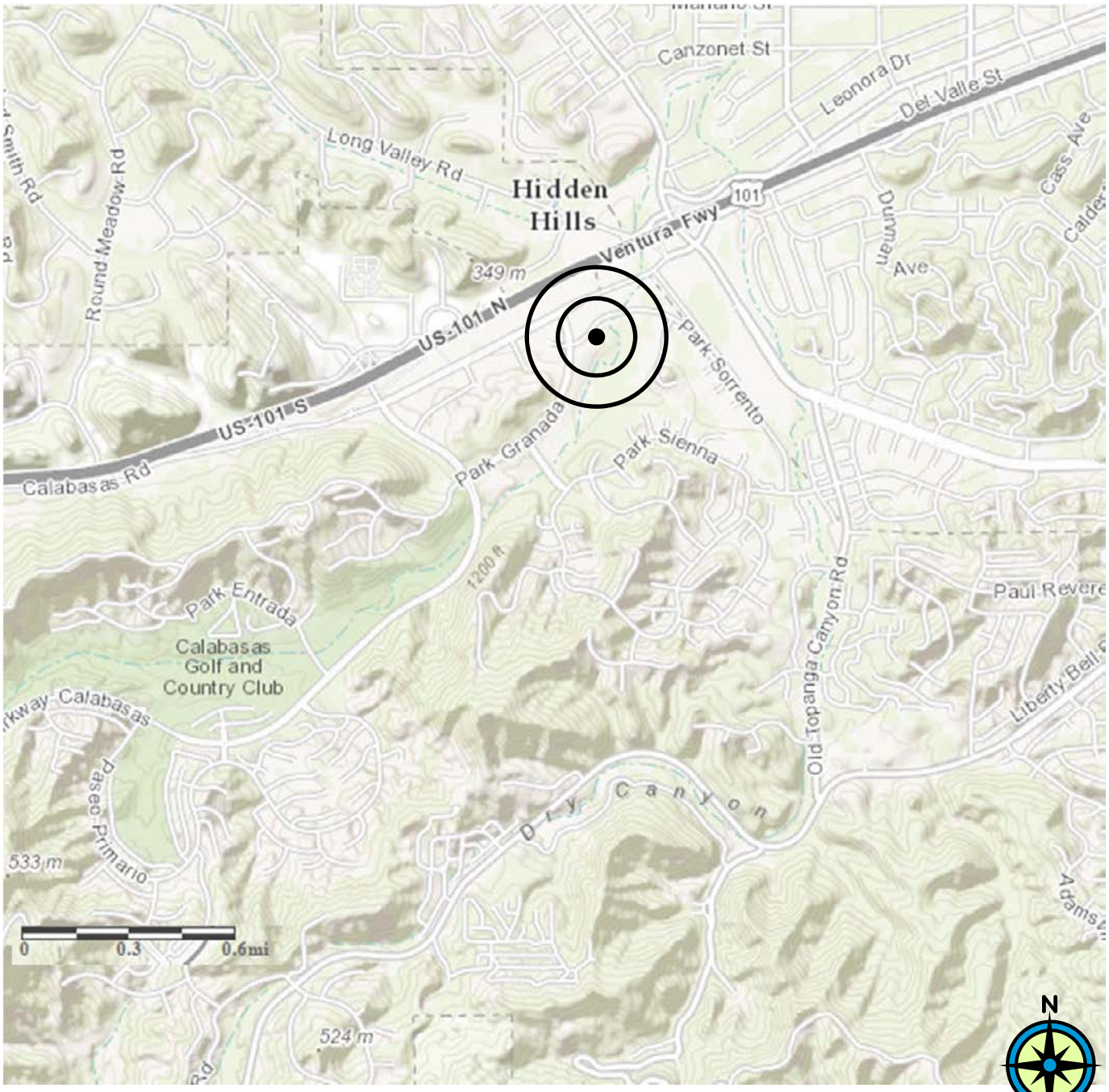
SITE INFORMATION

Location Map
Groundwater Map
Regional Geologic Map
USGS Fault Map
Seismic Hazard Map

Plot Map
Cross Sections

Field Exploration
Borings 1 through 7
Borings by Others

LOCATION MAP

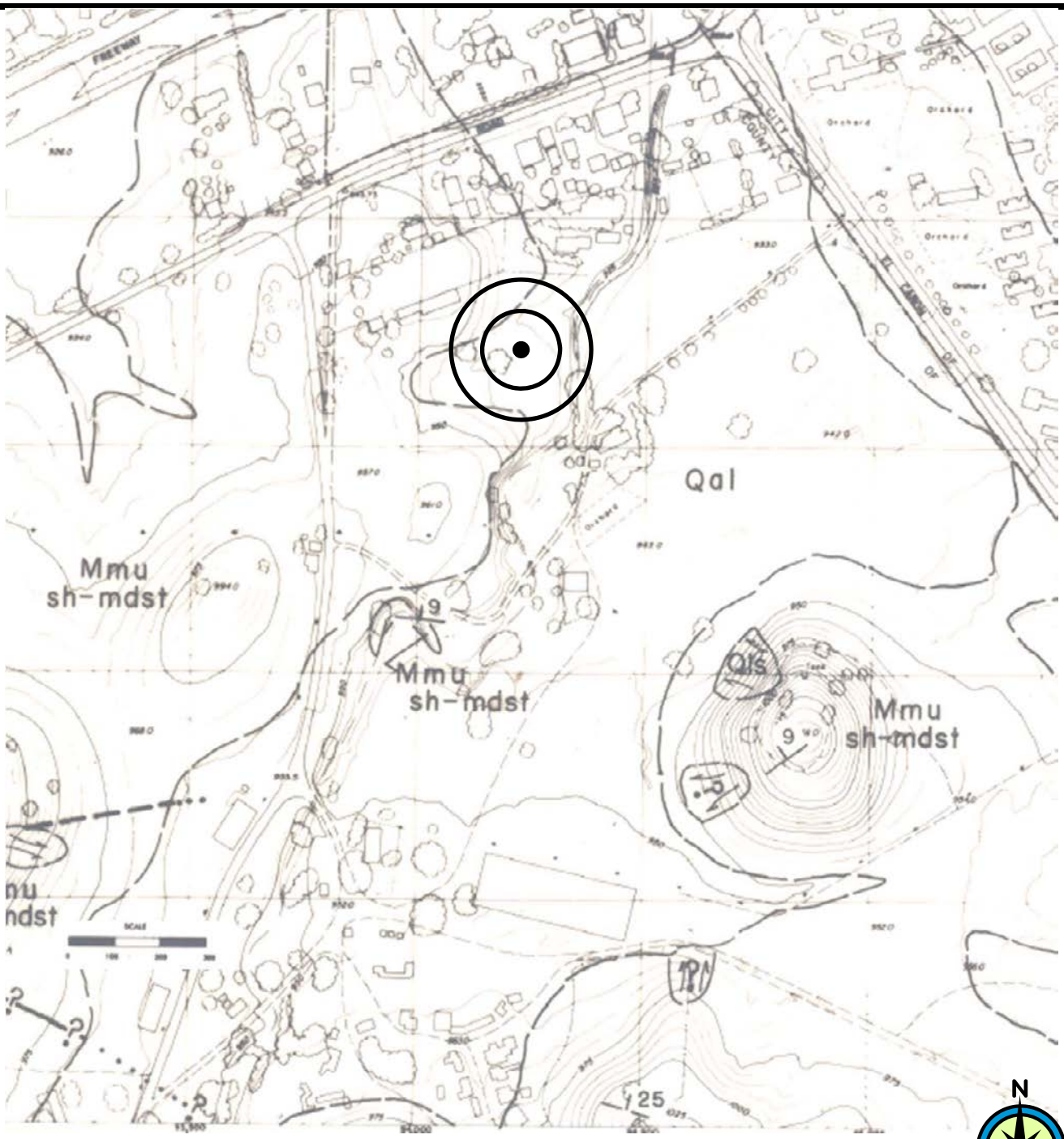


Reference:	City of Los Angeles, Bureau of Engineering	Scale: As Shown

GROUNDWATER MAP

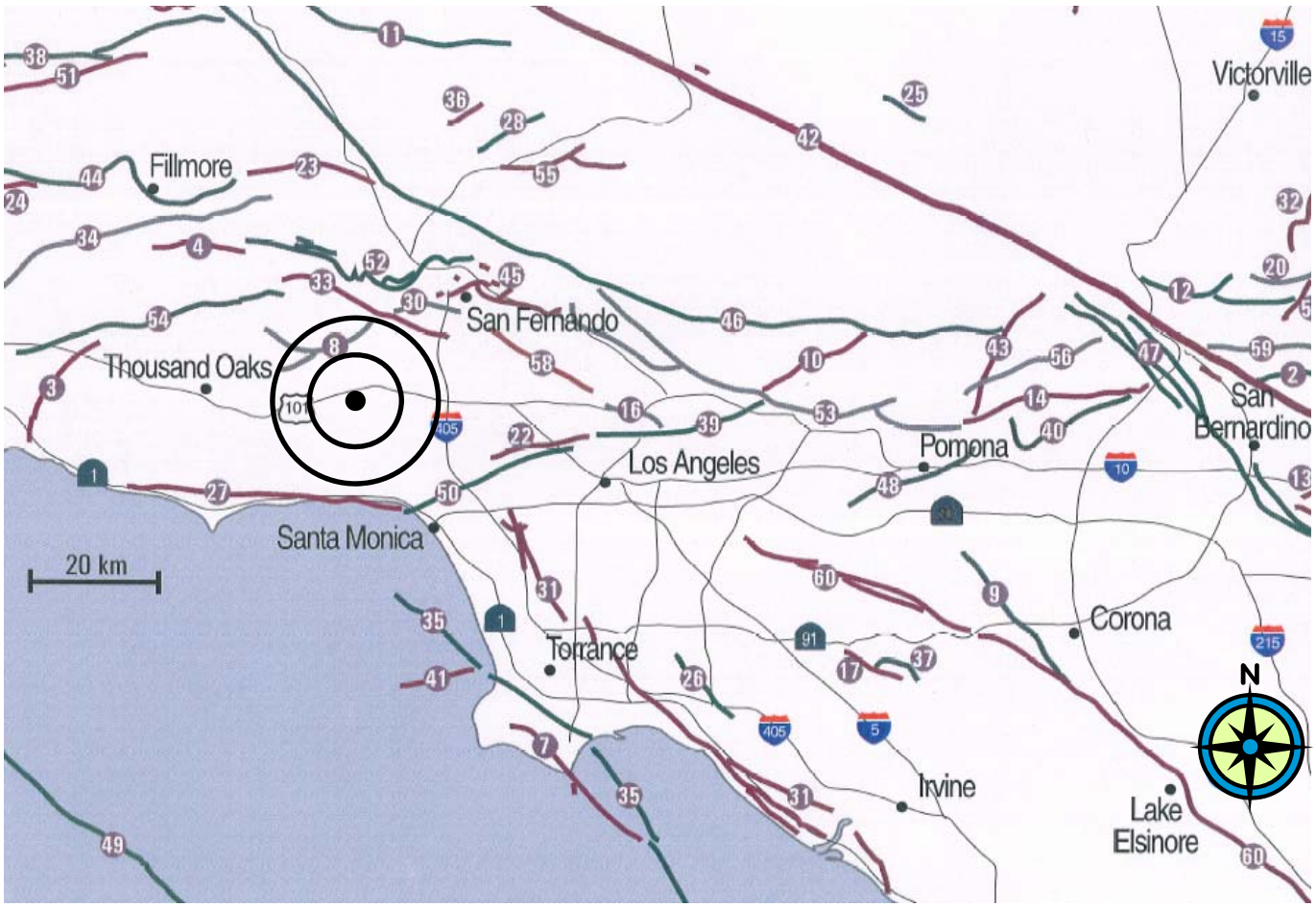
Reference:	State of California Seismic Hazard Report, Calabasas Quadrangle	Scale: As Shown

REGIONAL GEOLOGIC MAP



Reference:	City of Los Angeles, 1960 (revised 1964) Preliminary Geologic Map of the Santa Monica Mountains, sheet 18.	Scale: As Shown

USGS FAULT MAP



Lisa Wald, U.S. Geologic Survey (modified from SCEC).

1 Alamo thrust
2 Arrowhead fault
3 Bailey fault
4 Big Mountain fault
5 Big Pine fault
6 Blake Ranch fault
7 Cabrillo fault
8 Chatsworth fault
9 Chino fault
10 Clamshell-Sawpit fault
11 Clearwater fault
12 Cleghorn fault
13 Crafton Hills fault zone
14 Cucamonga fault zone
15 Dry Creek
16 Eagle Rock fault
17 El Modeno
18 Frazier Mountain thrust
19 Garlock fault zone
20 Grass Valley fault
21 Helendale fault
22 Hollywood fault
23 Holser fault
24 Lion Canyon fault
25 Llano fault
26 Los Alamitos fault
27 Malibu Coast fault
28 Mint Canyon fault
29 Mirage Valley fault zone
30 Mission Hills fault
31 Newport Inglewood fault zone
32 North Frontal fault zone
33 Northridge Hills fault
34 Oak Ridge fault
35 Palos Verdes fault zone
36 Pelona fault
37 Peralta Hills fault
38 Pine Mountain fault
39 Raymond fault
40 Red Hill (Etiwanda Ave) fault
41 Redondo Canyon fault
42 San Andreas Fault
43 San Antonio fault
44 San Cayetano fault
45 San Fernando fault zone
46 San Gabriel fault zone
47 San Jacinto fault
48 San Jose fault
49 Santa Cruz-Santa Catalina Ridge f.z.
50 Santa Monica fault
51 Santa Ynez fault
52 Santa Susana fault zone
53 Sierra Madre fault zone
54 Simi fault
55 Soledad Canyon fault
56 Stoddard Canyon fault
57 Tunnel Ridge fault
58 Verdugo fault
59 Waterman Canyon fault
60 Whittier fault

Reference:	U. S. G. S: active fault (red) and potentially active fault (green)	

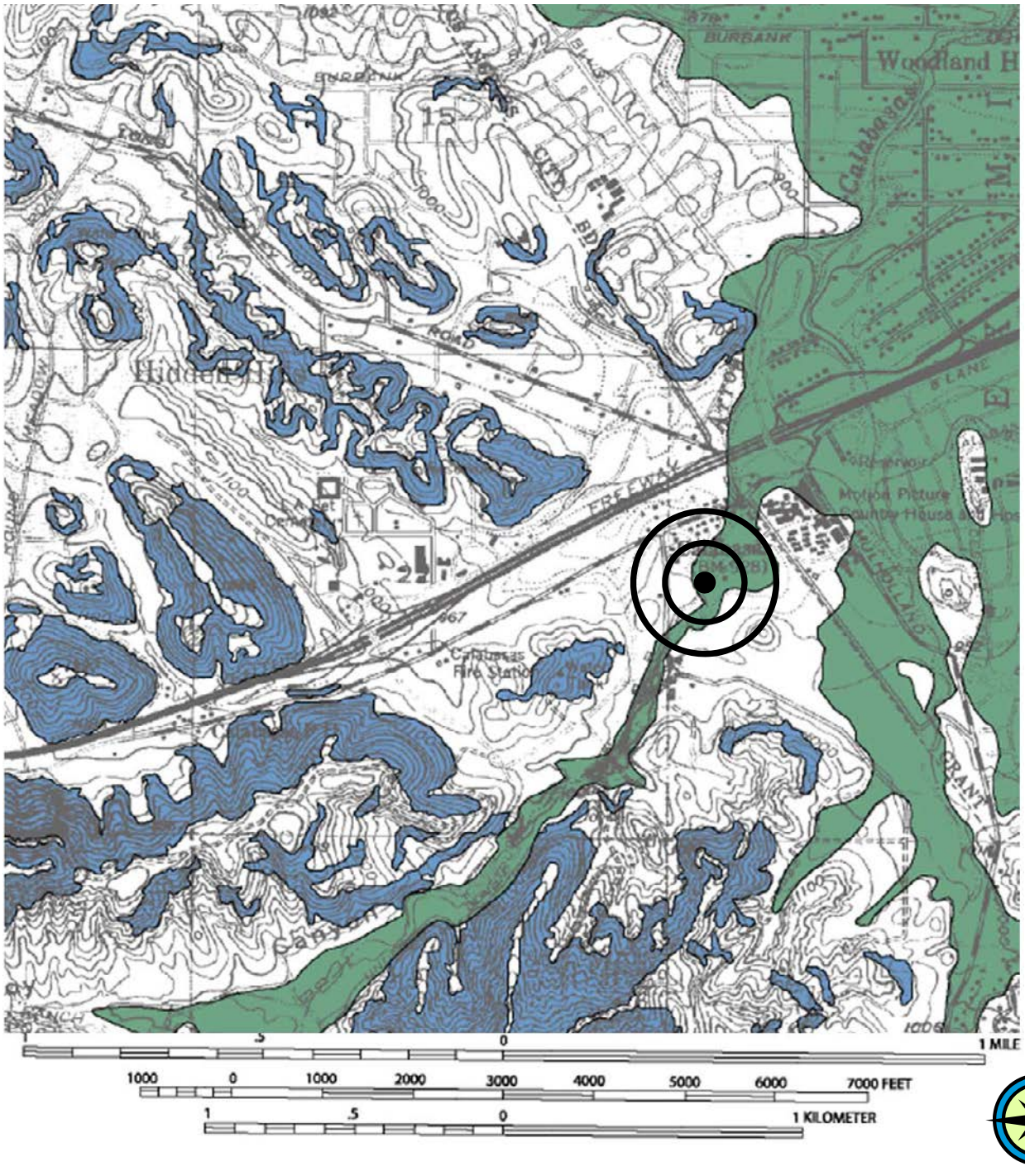
SEISMIC HAZARD MAP

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Liquefaction

Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.



Reference:	State of California, Seismic Hazard Map of the Calabasas Quadrangle	Scale: As Shown

PARK SORRENTO

950

940

930

C

A

A'

B

B'

C'

Caf/Qal/Mmu

Existing Building

EB-3

B-3

EB-1

B-7

PERVIOUS PAVER STONE

Af/Qal/Mmu

Caf/Qal/Mmu

Proposed 3-Story Building Over at Grade Parking Garage

B-6

B-2

Existing Building

EB-2

Outdoor Stone Patio w/ Seating Along Creek

B-5

PERVIOUS PAVER STONE

B-1

Af/Qal/Mmu

Af/Qal/Mmu

Fire Department Turn-around

FIRE DEPT. TURN AROUND WITH TURF BLOCK

B-4

950

940

930

940

940

N

W

E

S

0 40' 80'

Explanation	
Af	Fill
Caf	Certified Fill (1973)
Qal	Alluvium
Mmu	BEDROCK (Modelo Formation)
B-7	Location of Borings
EB-3	Location of Borings by: L.T. Evans (1973)
C C'	Line of Cross Section

GeoConcepts INC
Geology - Geotechnical Engineering
14428 Hamlin Street, Suite 200, Van Nuys, CA 91401
Ph (818) 994-8895 | Fax (818) 994-8599 | www.GeoConceptsInc.com

Description: **Geologic Map**

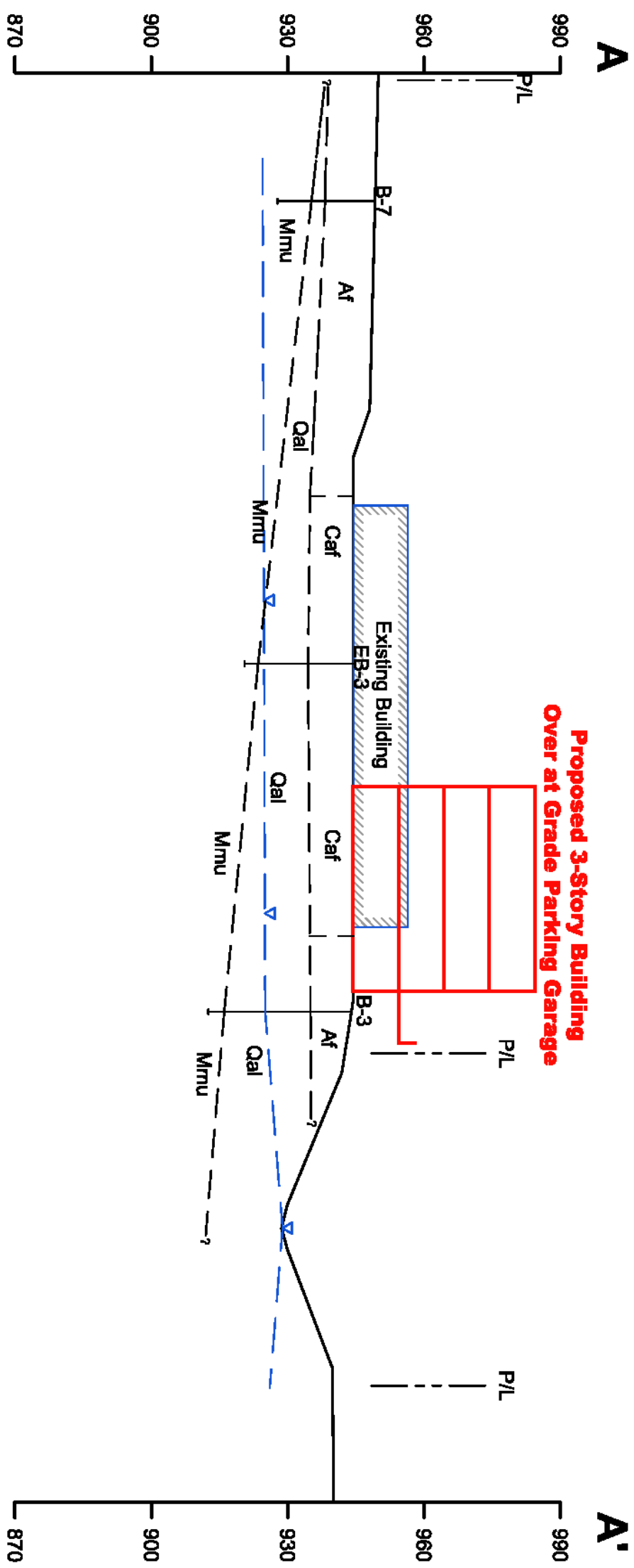
Base Map Provided By: Chris Nelson and Associate Inc.

Project Address: 23480 Park Sorrento, Calabasas, California

Date: Sep. 2015

Scale: 1" = 40'

Job No. 5032-1



GeoConcepts INC
Geology - Geotechnical Engineering
14428 Hamlin Street, Suite 200,Van Nuys, CA 91401
Ph (818) 994-8895 | Fax (818) 994-8599 | www.GeoConceptsInc.com

Description:

Geologic Cross Section A-A'

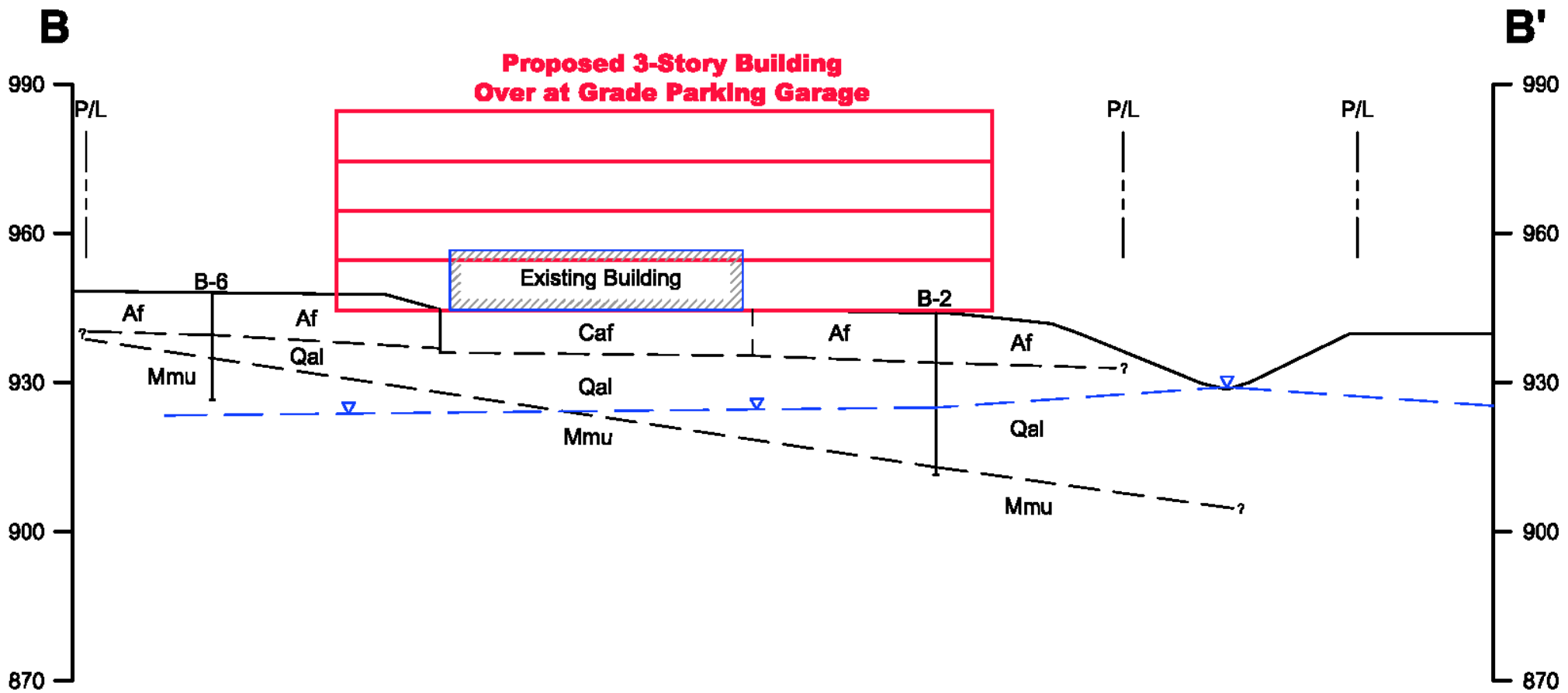
Project Address:

23480 Park Sorrento
Calabasas, California

Date: Sep. 2015

Scale: 1" = 30'

Job No. 5032-1



Date: Sep. 2015

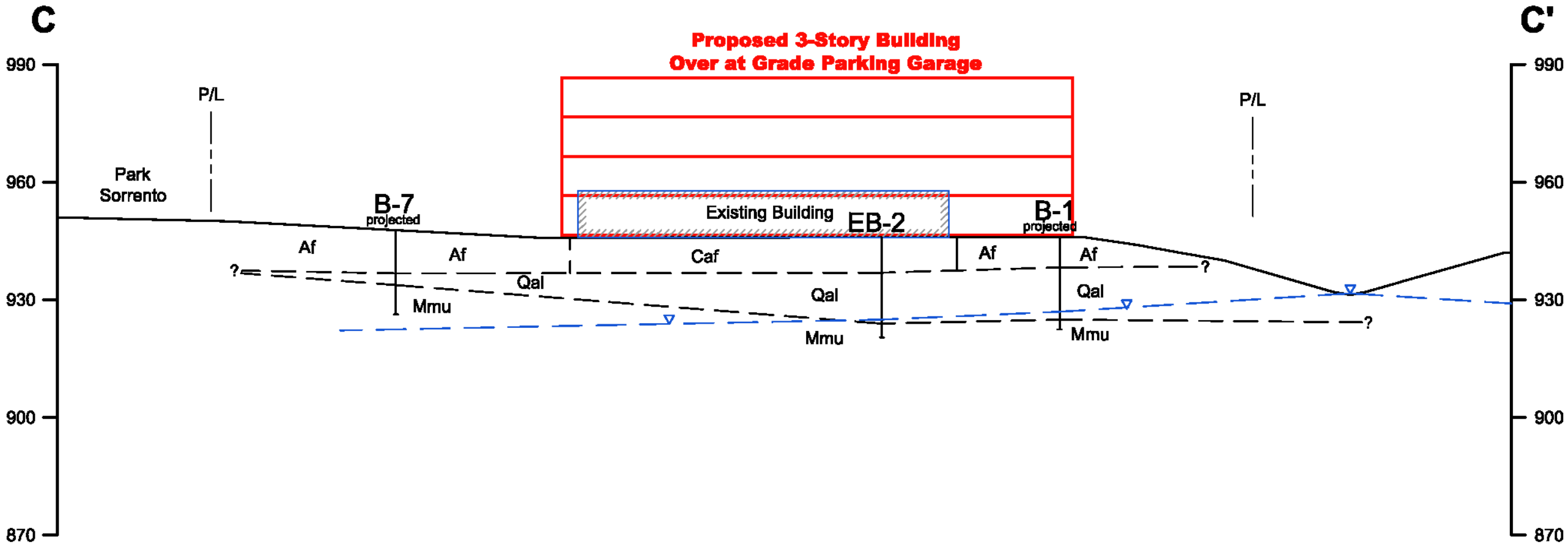
Scale: 1" = 30'

Job No. 5032-1

Project Address: 23480 Park Sorrento
Calabasas, California

Description: Geologic
Cross Section B-B'

GeoConcepts INC
Geology - Geotechnical Engineering
14428 Hamlin Street, Suite 200, Van Nuys, CA 91401
Ph (818) 994-8895 | Fax (818) 994-8599 | www.GeoConceptsInc.com



Date: Sep. 2015

Scale: 1" = 30'

Job No. 5032-1

Project Address: 23480 Park Sorrento
Calabasas, California

Description: Geologic
Cross Section C-C'

GeoConcepts INC
Geology - Geotechnical Engineering
14428 Hamlin Street, Suite 200, Van Nuys, CA 91401
Ph (818) 994-8895 | Fax (818) 994-8599 | www.GeoConceptsInc.com

BORING: B-1

ADDRESS: 23480 Park Sorrento

PROJECT NO.: 5032

DATE LOGGED: August 27, 2015

LOGGED BY: SRS

ATTITUDES
b - bedding j - joint
s - shear f - fault

WATER CONTENT, %	UNIT DRY WEIGHT, PCF	BLOWS/FOOT	SAMPLES	DEPTH, FT	GRAPHIC LOG	DESCRIPTION
						0.0' - 7.5' **ARTIFICIAL FILL; Af,**
						@1.0' silty sand, brown
						@2.0' cobble
		19				@2.5' shale fill, gray brown, bedrock used for fill
		16		5		@5.0' shale fill, gray brown, orange oxidation, bedrock used for fill
		12				7.5' - 21.0' **ALLUVIUM; Qal,**
						@7.5' silty sand, brown, fine grained
14	101	13		10		@10.0' silty sand, brown, fine grained
		10				@12.5' silty sand, brown, fine grained
		13		15		@15.0' sand, light brown, fine grained to medium grained, cohesionless
		14				@18.5' - 19.0' gravelly sand, light brown, fine grained to medium grained, cohesionless
11	118	28		20		@19.0' groundwater
						@20.0' - 21.0' gravelly sand
		50				21.0' - 23.5' **BEDROCK; Mmu,** shale, gray, dense, hard, slightly weathered, refusal at 23.5 feet
				25		Total Depth 23.5 Feet Groundwater @ 19.0 Feet 8 Inch Hollow Stem Drill Rig

BORING: B-2

ADDRESS: 23480 Park Sorrento

PROJECT NO.: 5032

DATE LOGGED: August 27, 2015

LOGGED BY: SRS

ATTITUDES
b - bedding j - joint
s - shear f - fault

WATER CONTENT, %	UNIT DRY WEIGHT, PCF	BLOWS/FOOT	SAMPLES	DEPTH, FT	GRAPHIC LOG	DESCRIPTION
						0.0' - 10.0' **ARTIFICIAL FILL; Af,**
						@0.0' - 2.5' silty sand, brown
		11				@2.5' shale bedrock fill, gray brown
8	106	18		5		@5.0' shale bedrock fill, gray brown
		19				@7.5' claycy sand, dark brown, slightly moist
		20		10		10.0' - 31.0' **ALLUVIUM; Qal,**
						@10.0' gravelly sand, light brown, fine to coarse grained, cohesionless
		23				@12.5' gravelly sand, light brown, fine to coarse grained, cohesionless
8	117	7		15		@15.0' gravelly sand, light brown, fine to coarse grained, cohesionless
		11				@17.5' sand, light brown
						@19.0' groundwater
		12		20		@20.0' gravelly sand, light brown
		13				@22.5 sand to silty sand, brown, fine grained
14	115	15		25		@25.0' gravelly sand
		46				@27.5' gravelly sand
						@28.0' gravels
		76		30		@30.0' gravelly sand
						31.0' - 32.5' **BEDROCK; Mmu,**
11	112	50				@31.0' shale, gray and brown
						@32.0' refusal
				35		Total Depth 32.5 Feet
						Groundwater @ 19.0 Feet
						8 Inch Hollow Stem Drill Rig

BORING: B-3

ADDRESS: 23480 Park Sorrento

PROJECT NO.: 5032

DATE LOGGED: August 27, 2015

LOGGED BY: SRS

ATTITUDES (b - bedding, j - joint, s - shear, f - fault)	WATER CONTENT, %	UNIT DRY WEIGHT, PCF	BLOWS/FOOT	SAMPLES	DEPTH, FT	GRAPHIC LOG	DESCRIPTION
							0.0' - 9.0' **ARTIFICIAL FILL; Af,**
			14				@2.5; clayey sand, dark brown, slightly moist, dense
			15		5		@5.0' shale fill, bedrock used for fill
			28				@7.5' clayey sand, dark gray and brown
							9.0' - 28.0' **ALLUVIUM; Qal,**
	4	106	14		10		@10.0' sand, light brown, fine grained, cohesionless
			35				@12.5 sand and gravels
					15		@14.0' gravels up to 3.0" in length @15.0' sand and gravels, no sample
			9				@17.5' gravelly sand, light brown @18.0' - 19.0' sand to silty sand, brown @19.0' groundwater
			15		20		@20.0' clayey sand, dark brown , fine grained, dense
			19				@22.5' clayey silty sand with few gravels, dark brown
	18	110	11		25		@25.0 sand to silty sand, brown, fine grained
			45				@27.5 sand, fine to medium grained
							28.0' - 31.5' **BEDROCK; Mmu,**
			34		30		@28.0' shale, gray, orange oxidation @30.0' muddy shale, gray brown
							Total Depth 31.5 Feet Groundwater @ 19 Feet 8 Inch Hollow Stem Drill Rig

BORING: B-4

ADDRESS: 23480 Park Sorrento

PROJECT NO.: 5032

DATE LOGGED: August 28, 2015

LOGGED BY: SRS

ATTITUDES (b - bedding, j - joint, s - shear, f - fault)	WATER CONTENT, %	UNIT DRY WEIGHT, PCF	BLOWS/FOOT	SAMPLES	DEPTH, FT	GRAPHIC LOG	DESCRIPTION
							2.5" **ASPHALT**
							3.0" **ROAD BASE**
							.46' - 7.5' **ARTIFICIAL FILL; Af,**
			36				@2.5' silty sand, brown, slightly moist, dense to very dense
	9	116	50		5		@5.0' silty sand, brown, very dense
			30				7.5' - 18.0' **ALLUVIUM; Qal,**
							@7.5' silty sand, brown, gravels, dense
			48		10		@10.0' silty sand, brown, gravels, dense
			43				@12.5 silty sand, light gray brown, fine grained, dense, tight
	12	114	40		15		@15.0' silty sand, light brown, fine grained, dense, tight
			22				@17.5' silty sand and gravels
							18.0' - 21.5' **BEDROCK; Mmu,**
			23		20		@20.0' mudstone, gray, orange oxidation
							Total Depth 21.5 Feet No Groundwater 8 Inch Hollow Stem Drill Rig

BORING: B-5

ADDRESS: 23480 Park Sorrento

PROJECT NO.: 5032

DATE LOGGED: August 28, 2015

LOGGED BY: SRS

ATTITUDES (b - bedding, j - joint, s - shear, f - fault)	WATER CONTENT, %	UNIT DRY WEIGHT, PCF	BLOWS/FOOT	SAMPLES	DEPTH, FT	GRAPHIC LOG	DESCRIPTION
							3" **ASPHALT**
							3" **ROAD BASE**
							0.5' - 10.5' **ARTIFICIAL FILL; Af,**
			41				@2.5' silty sand, brown, dense
			44		5		@5.0' silty sand, brown, dense
			50				7.5' - 10.5' **ALLUVIUM; Qal,**
							@7.5' partial recovery due to sand and gravels
	16	105	50		10		10.5' - 16.5' **BEDROCK; Mmu,**
							@10.5' muddy shale, gray, orange oxidation, dense
			36				@12.5' mudstone, gray brown
			50		15		@15.0' mudstone, gray brown
							Total Depth 16.5 Feet
							No Groundwater
							8 Inch Hollow Stem Drill Rig
					20		

BORING: B-6

ADDRESS: 23480 Park Sorrento

PROJECT NO.: 5032

DATE LOGGED: August 28, 2015

LOGGED BY: SRS

ATTITUDES (b - bedding, j - joint, s - shear, f - fault)	WATER CONTENT, %	UNIT DRY WEIGHT, PCF	BLOWS/FOOT	SAMPLES	DEPTH, FT	GRAPHIC LOG	DESCRIPTION
							0'0' - 0.25' **ASPHALT**
							0.25' - 0.5' **ROAD BASE**
							0.5' - 8.5' **ARTIFICIAL FILL; Af,**
			16				@2.5' shale fill, bedrock used for fill, gray, brown slightly moist, dense
	14	103	40		5		@5.0' shale fill, bedrock used for fill, gray, brown slightly moist, dense
			46				@7.5' - 8.5' shale fill, bedrock used for fill, gray, brown slightly moist, dense
							8.5' - 13.0' **ALLUVIUM; Qal,**
							@8.5' - 9.5' silty sand, brown, fine grained
			70		10		@10.0' silty sand with gravel at bottom, brown, fine grained, dense
			28				@12.5' gravel
							13.0' - 21.5' **BEDROCK; Mmu,**
			28		15		@15.0' mudstone, gray, orange oxidation
			36				@17.5' mudstone, brown, orange oxidation
			48		20		@20.0' mudstone, brown, orange oxidation
							Total Depth 21.5 Feet No Groundwater 8 Inch Hollow Stem Drill Rig

BORING: B-7

ADDRESS: 23480 Park Sorrento

PROJECT NO.: 5032

DATE LOGGED: August 28, 2015

LOGGED BY: SRS

ATTITUDES
b - bedding j - joint
s - shear f - fault

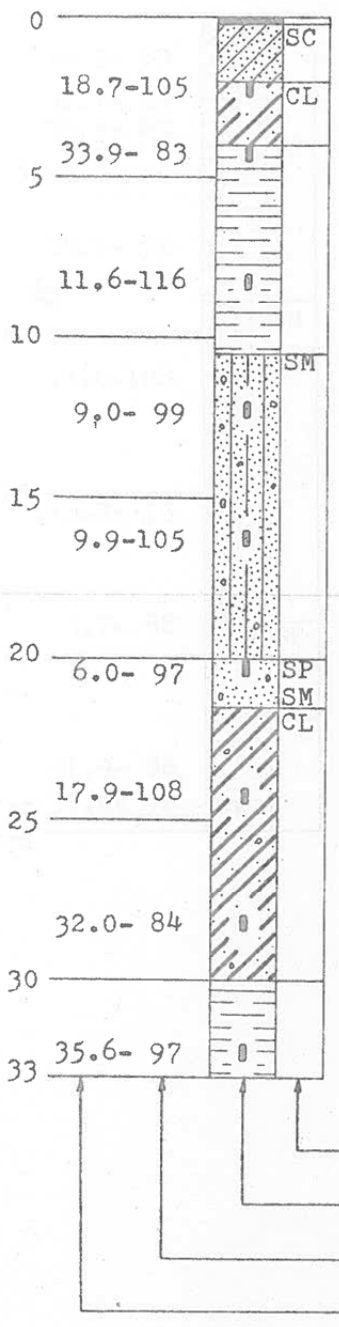
WATER CONTENT, %	UNIT DRY WEIGHT, PCF	BLOWS/FOOT	SAMPLES	DEPTH, FT	GRAPHIC LOG	DESCRIPTION
						4.0" **ASPHALT**
						3.0" **ROAD BASE**
						0.6" - 11.0' **ARTIFICIAL FILL; Af,**
		11				@2.5' clayey sand, dark brown, mottled, dense
		15		5		@5.0' claycy sand, dark brown, mottled, dense
		7				@7.5' clayey silty sand, dark brown, mottled, dense
19	107	24		10		@10.0' claycy sand, dark brown, mottled
						11.0' - 14.0' **ALLUVIUM; Qal,** sand and gravels
		27				@12.5' no recovery due to gravels
						14.0' - 20.0' **BEDROCK; Mmu,**
		25		15		@15.0' mudstone, gray, orange oxidation
		33				@17.5' mudstone, gray, orange oxidation
		36		20		@20.0' mudstone, gray, orange oxidation
						Total Depth 21.5 Feet No Groundwater 8 Inch Hollow Stem Drill Rig

L. T. EVANS, INC.
FOUNDATION ENGINEERS

LOG OF BORING NO. 1
GROUND WATER @ 21'

Drilled 2/12/73
18" Diameter
Bucket Drill Rig

GROUND ELEVATION 944.0



Asphaltic pavement
CLAYEY SAND FILL, fine to medium, medium amount of clay, quite moist, brown
CLAY FILL, sandy, stiff, dark brown

SHALE FILL, stiff, mottled grays

SILTY SAND, fine, medium amount of silt, trace of clay, occasional gravel, light brown

12'- More gravel

16'- Fine to medium, small amount of silt moderate amount of gravel

SAND, poorly graded, medium to coarse, some gravel, dirty, brown
CLAY, very sandy, wet, firm, some gravel, dark brown

SHALE, stiff, laminated, mottled browns

Hit hard rock @ 32'-Refusal-Boring abandoned

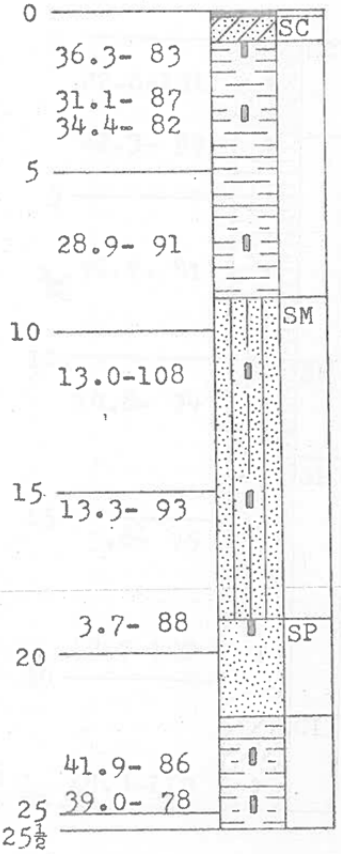
Unified Soil Classification
Depth of drive sample
Dry density in pounds per cubic foot
Moisture content in % of dry weight

a-2

L. T. EVANS, INC.
FOUNDATION ENGINEERS

LOG OF BORING NO. 2
GROUND WATER @ 21'

Drilled 2/12/73
18" Diameter
Bucket Drill Rig
GROUND ELEVATION 945.8



Asphaltic pavement
CLAYEY SAND FILL, fine to medium, medium amount of clay, quite moist, brown
SHALE FILL, stiff, mottled grays

SILTY SAND, fine to medium, small amount of silt, trace of clay, dark gray

11'- Fine to medium, small amount of silt, trace of clay, light brown

SAND, poorly graded, fine to medium, tan

21'- Wet, light brown

SHALE, stiff, laminated, mottled browns and grays

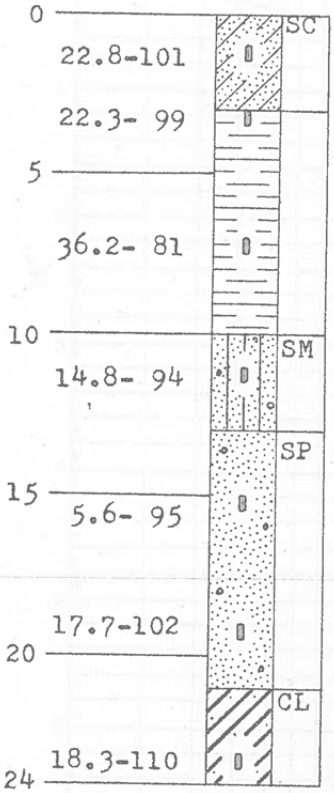
Boring abandoned due to caving in sand strata below water.

L. T. EVANS, INC.
FOUNDATION ENGINEERS

LOG OF BORING NO. 3
GROUND WATER @ 20'

Drilled 2/12/73
18" Diameter
Bucket Drill Rig

GROUND ELEVATION 943.6



CLAYEY SAND FILL, fine to medium, medium amount of clay, wet, spongy, brown

SHALE FILL, stiff, mottled grays

SILTY SAND, fine to medium, small amount of silt, trace of clay, brown
11'- With moderate amount of gravel, moist

SAND, poorly graded, fine to medium, occasional gravel, brown

18'- Cobbles to 6" diameter

CLAY, sandy, stiff, dark brown

Boring abandoned due to caving in sand strat under water.

APPENDIX II

LABORATORY TESTING

Laboratory Procedures

Laboratory Recapitulation 1

Figures S.1 through S.3
Figures C.1 through C.6

LABORATORY PROCEDURES

Laboratory testing was performed on samples obtained as outlined in the Field Exploration section of this report. All samples were sent to the laboratory for examination, testing in general conformance to specified test methods, and classification, using the Unified Soil Classification System and group symbol.

Moisture and Density Tests

The dry unit weight and moisture content of the undisturbed samples were determined. The results are tabulated in the Laboratory Recapitulation - Table 1.

Shear Tests

Direct single-shear tests were performed with a direct shear machine. The desired normal load is applied to the specimen and allowed to come to equilibrium. The rate of deflection on the sample is approximately 0.005 inches per minute. The samples are tested at higher and/or lower normal loads in order to determine the angle of internal friction and the cohesion. The results are plotted on the Shear Test Diagrams and the results tabulated in the Laboratory Recapitulation - Table 1. The samples were observed prior to and after shearing to ensure the particle size of the sample did not exceed 10% of the diameter of the test specimen in accordance with ASTM standards. Although the soil was described to include gravels they were not included within the samples tested, therefore, the results provide a conservative estimate of the shear strength of the soil.

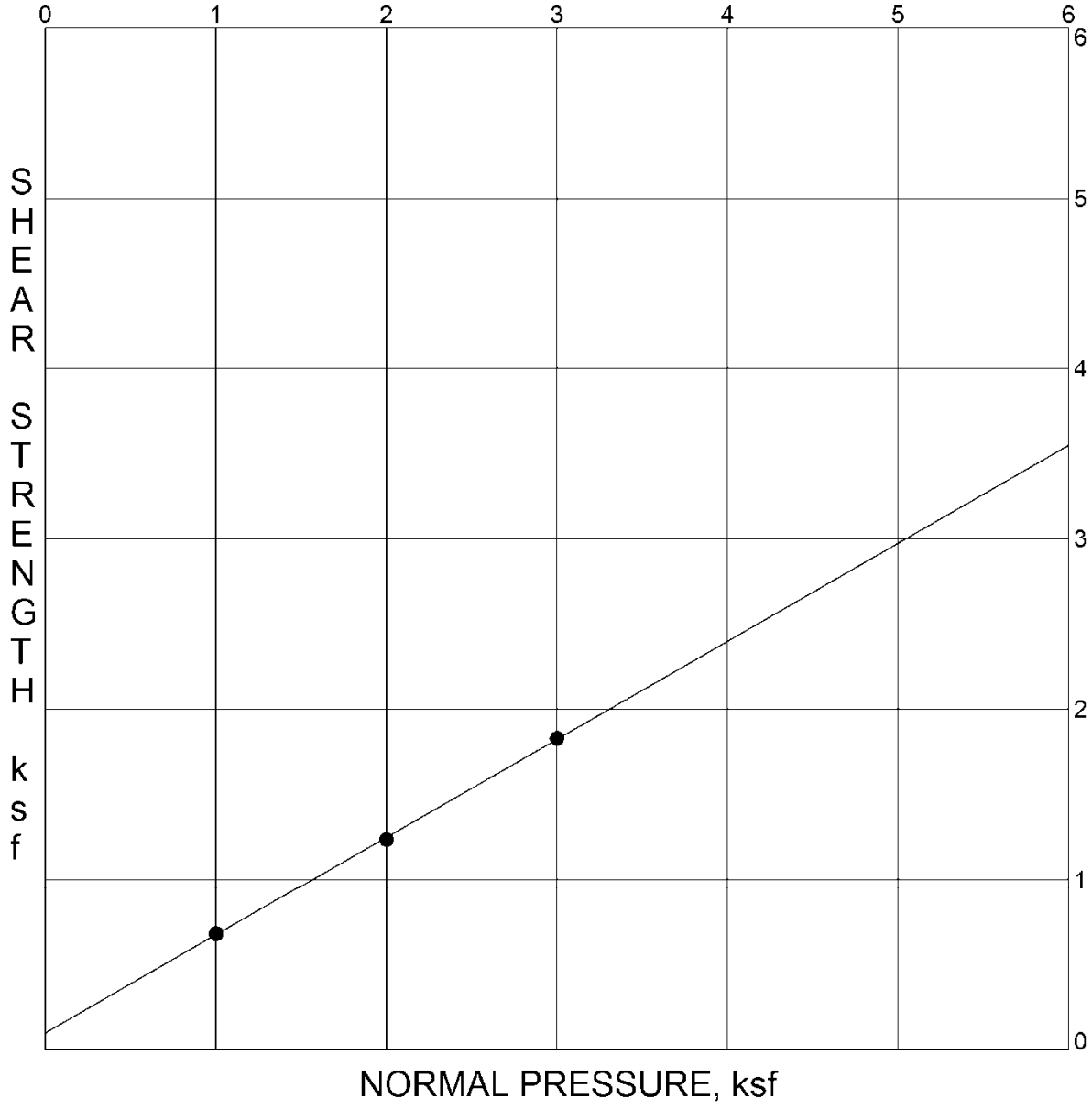
Consolidation

Consolidation tests were performed on samples, within the brass ring, to predict the soils behavior under a specific load. Porous stones are placed in contact with top and bottom of the samples to permit to allow the addition or release of water. Loads are applied in several increments and the results are recorded at selected time intervals. Samples are tested at field and increased moisture content. The results are plotted on the Consolidation Test Curve and

LABORATORY RECAPITULATION 1 PROJECT: 23480 Park Sorrento PROJECT NO.: 5032						
Exploration	**Depth (ft)**	**Material**	**Dry Density In Situ (P.C.F.)**	**Moisture Content (%)**	**Cohesion (K.S.F)**	**Friction Angle (degree)**
B-1	10	Qal	100.5	13.8	0.1	30
B-1	20	Qal	117.9	11.3		
B-2	5	Af	106.2	8.1		
B-2	15	Qal	117.5	8	0.025	35
B-2	25	Qal	115.4	13.9		
B-2	32	Mmu	112.2	11		
B-3	10	Qal	106.1	4	0.025	34
B-3	25	Qal	109.7	17.9		
B-4	5	Af	116.1	9.2		
B-4	15	Qal	114.2	11.9		
B-5	10	Mmu	105.2	15.9		
B-6	5	Af	103.2	14.1		
B-7	10	Af	107.1	18.6		

PROJECT LOCATION: 23480 Park Sorrento | PROJECT NO.: 5032

SAMPLE LOCATION: B-1 @ 10.0 | DESCRIPTION: Qal



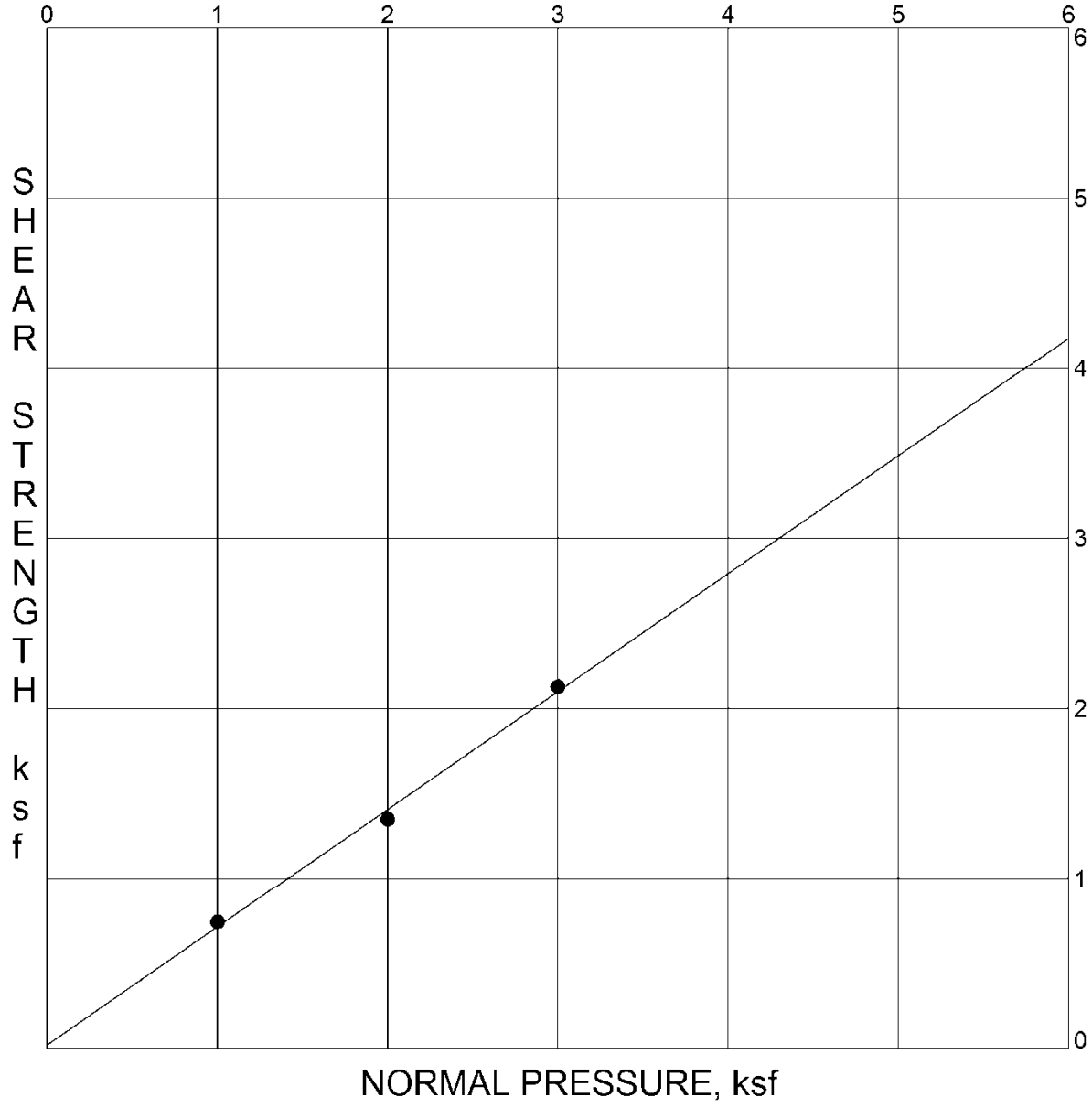
Test Results

Moisture Content (%)	Density (pcf)	Ultimate Strength
Insitu: 13.8	Dry Density: 100.5	Phi (deg): 30.0
Saturated: 25.0		Cohesion (ksf): 0.100

SHEAR TEST DIAGRAM

Figure S.1

PROJECT LOCATION: 23480 Park Sorrento
PROJECT NO.: 5032
SAMPLE LOCATION: B-2 @ 15.0
DESCRIPTION: Qal



Test Results

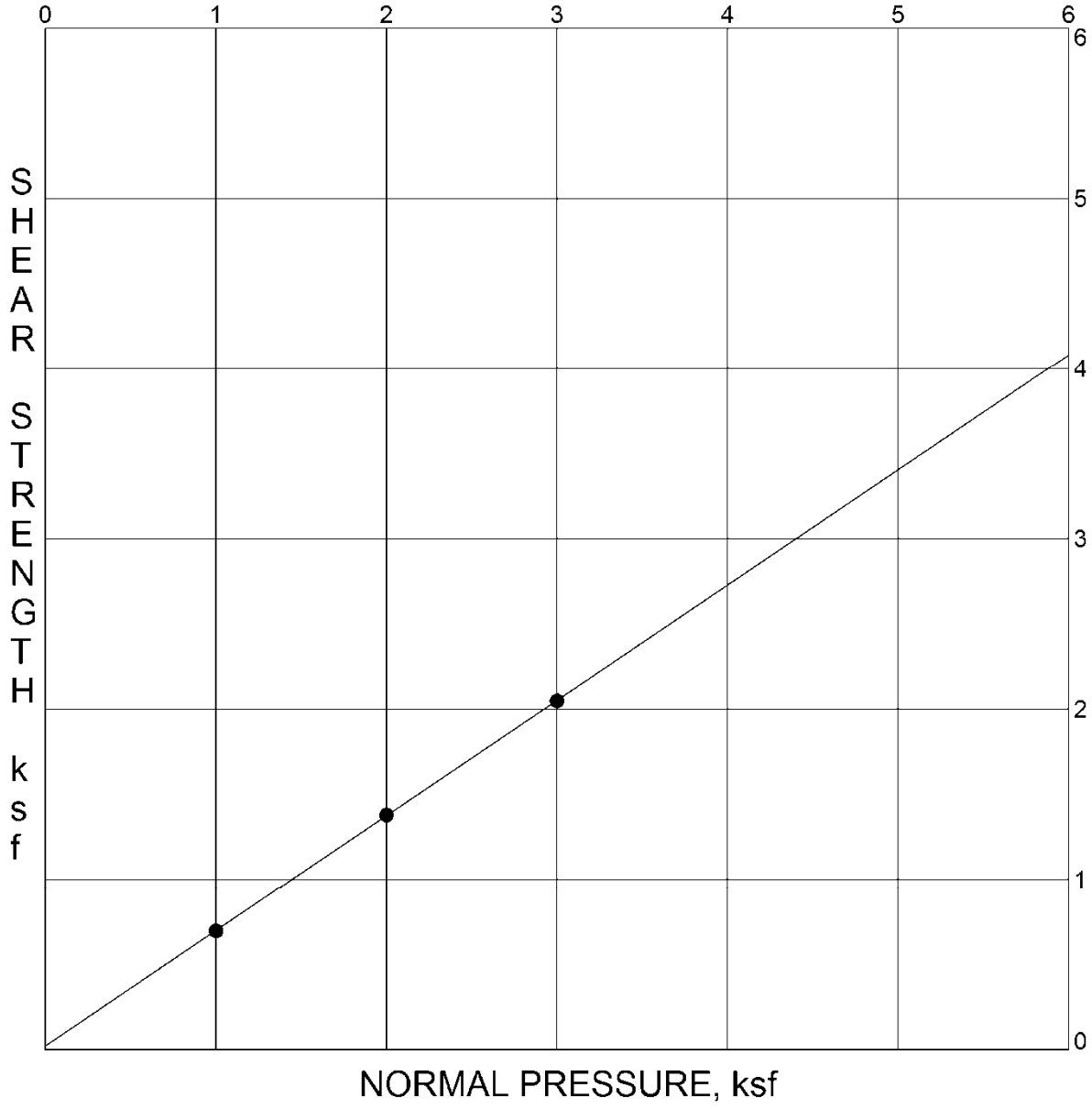
Moisture Content (%)	Density (pcf)	Ultimate Strength
Insitu: 8.0	Dry Density: 117.5	Phi (deg): 35.0
Saturated: 16.0		Cohesion (ksf): 0.025

SHEAR TEST DIAGRAM

Figure S.2

PROJECT LOCATION: 23480 Park Sorrento | PROJECT NO.: 5032

SAMPLE LOCATION: B-3 @ 10.0 | DESCRIPTION: Qal



Test Results

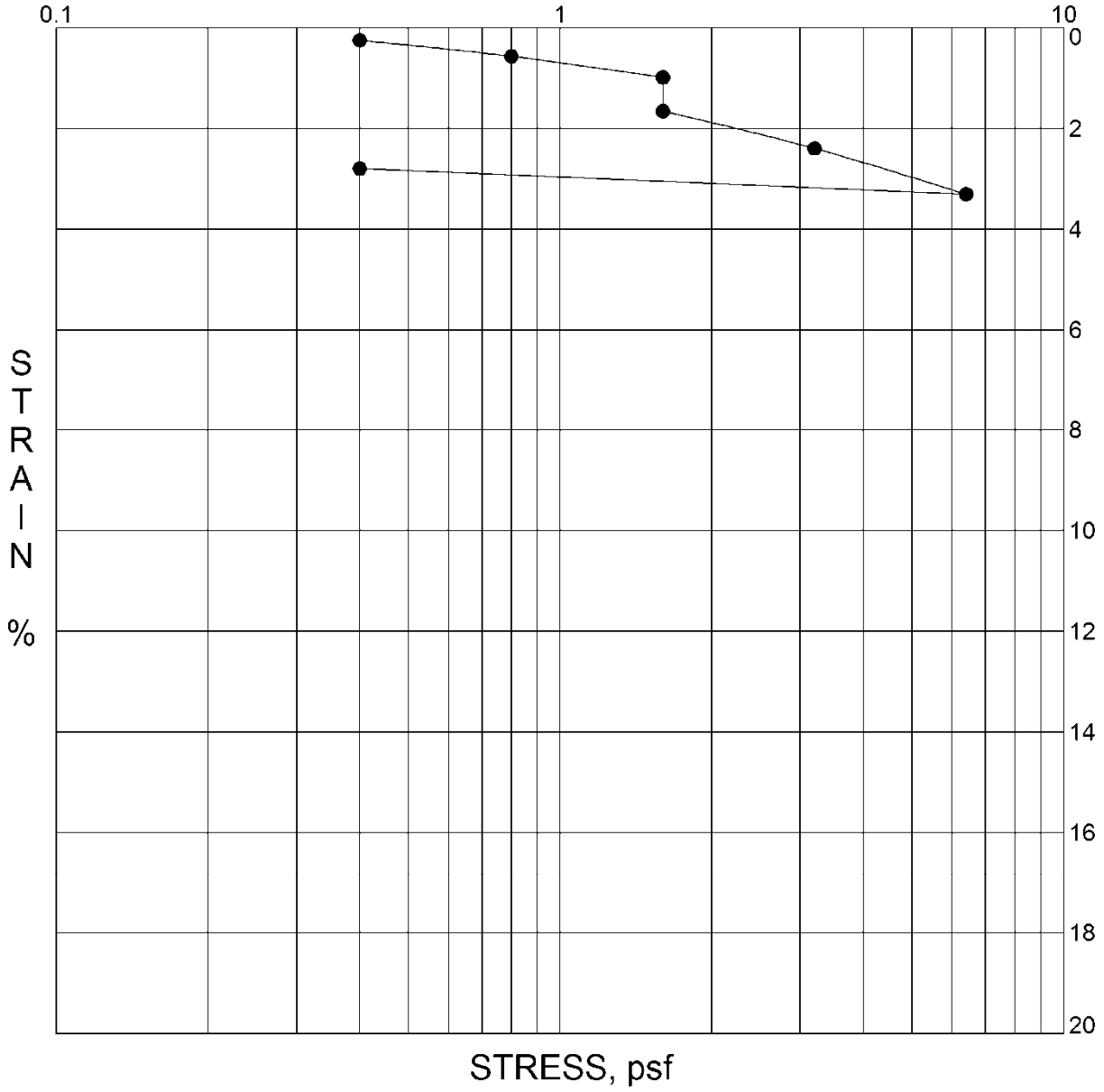
Moisture Content (%)	Density (pcf)	Ultimate Strength
Insitu: 4.0	Dry Density: 106.1	Phi (deg): 34.0
Saturated: 21.7		Cohesion (ksf): 0.025

SHEAR TEST DIAGRAM

Figure S.3

PROJECT LOCATION: 23480 Park Sorrento | PROJECT NO.: 5032

SAMPLE LOCATION: B-1 @ 10.0 | DESCRIPTION: Qal



Test Results

Moisture Content (%)	Density (pcf)	Water Added At
Insitu: 13.8	Dry Density: 100.5	**1600 lbs.**

CONSOLIDATION TEST DIAGRAM

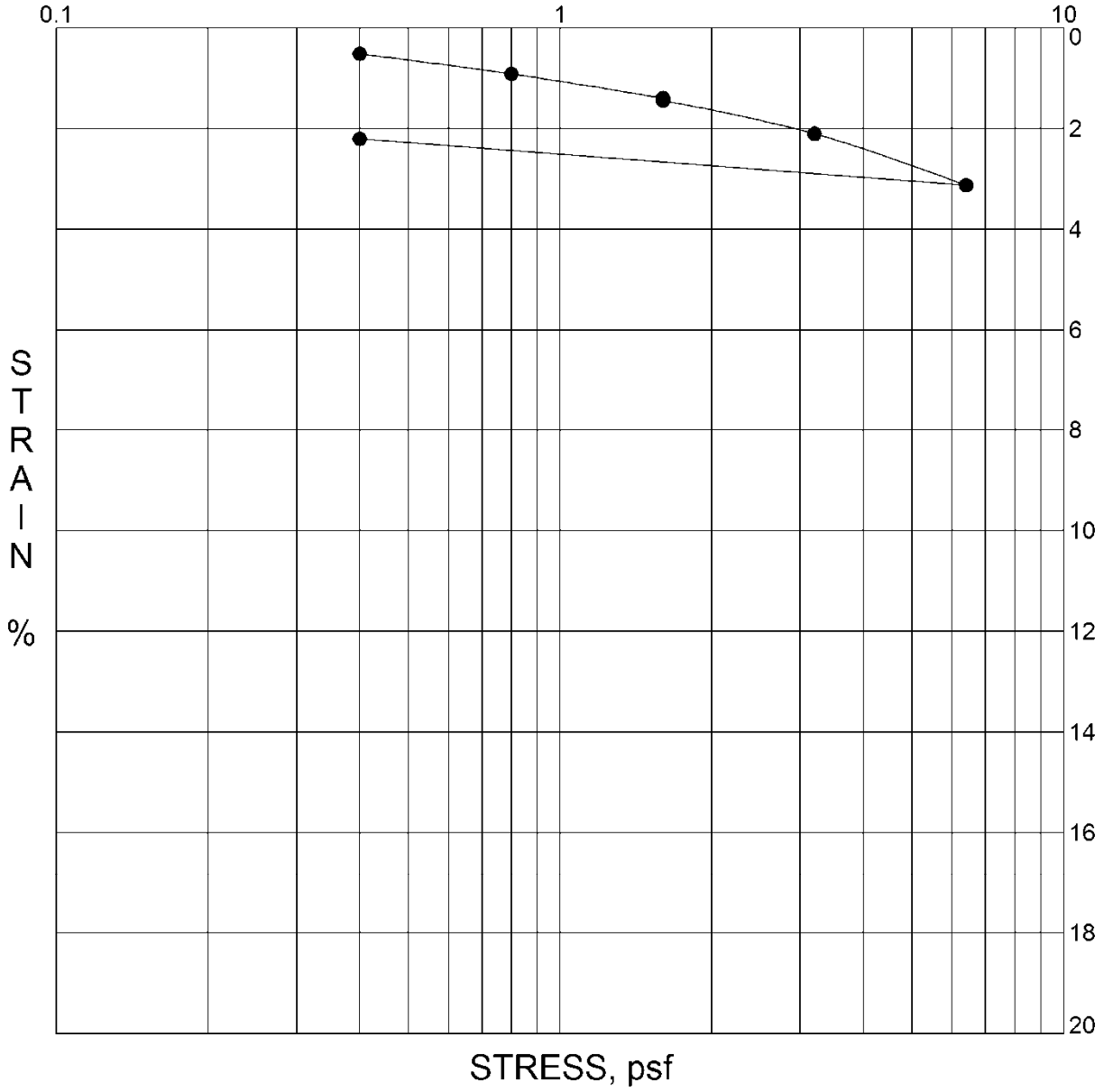
Figure C.1

PROJECT LOCATION: 23480 Park Sorrento

PROJECT NO.: 5032

SAMPLE LOCATION: B-1 @ 20.0

DESCRIPTION: Qal



Test Results

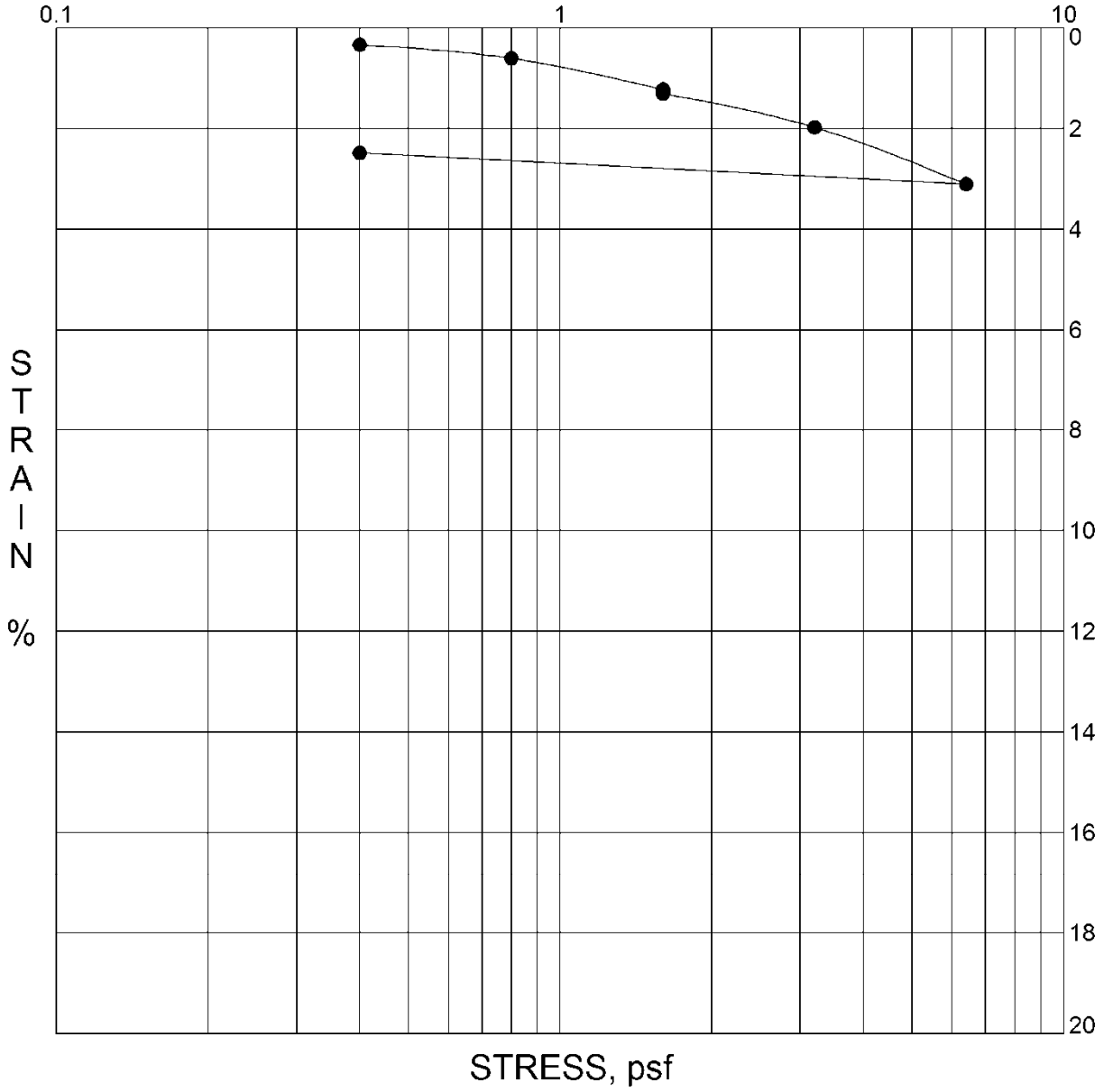
Moisture Content (%)	Density (pcf)	Water Added At
Insitu: 11.3	Dry Density: 117.9	**1600 lbs.**

CONSOLIDATION TEST DIAGRAM

Figure C.2

PROJECT LOCATION: 23480 Park Sorrento | PROJECT NO.: 5032

SAMPLE LOCATION: B-2 @ 15.0 | DESCRIPTION: Qal



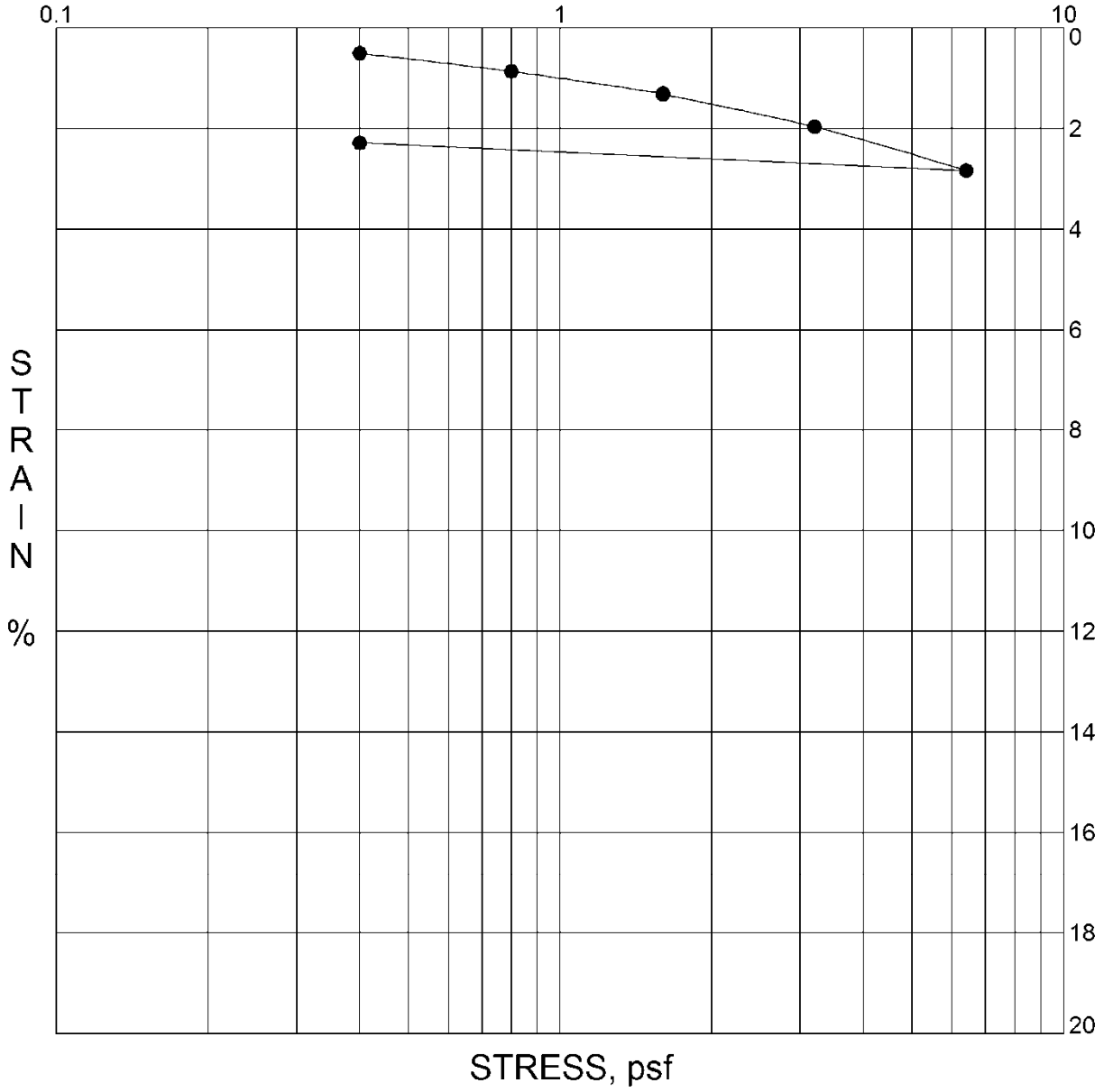
Test Results

Moisture Content (%)	Density (pcf)	Water Added At
Insitu: 8.0	Dry Density: 117.5	**1600 lbs.**

CONSOLIDATION TEST DIAGRAM

Figure C.3

PROJECT LOCATION: 23480 Park Sorrento
PROJECT NO.: 5032
SAMPLE LOCATION: B-2 @ 25.0
DESCRIPTION: Qal



Test Results

Moisture Content (%)	Density (pcf)	Water Added At
Insitu: 13.9	Dry Density: 115.4	**1600 lbs.**

CONSOLIDATION TEST DIAGRAM

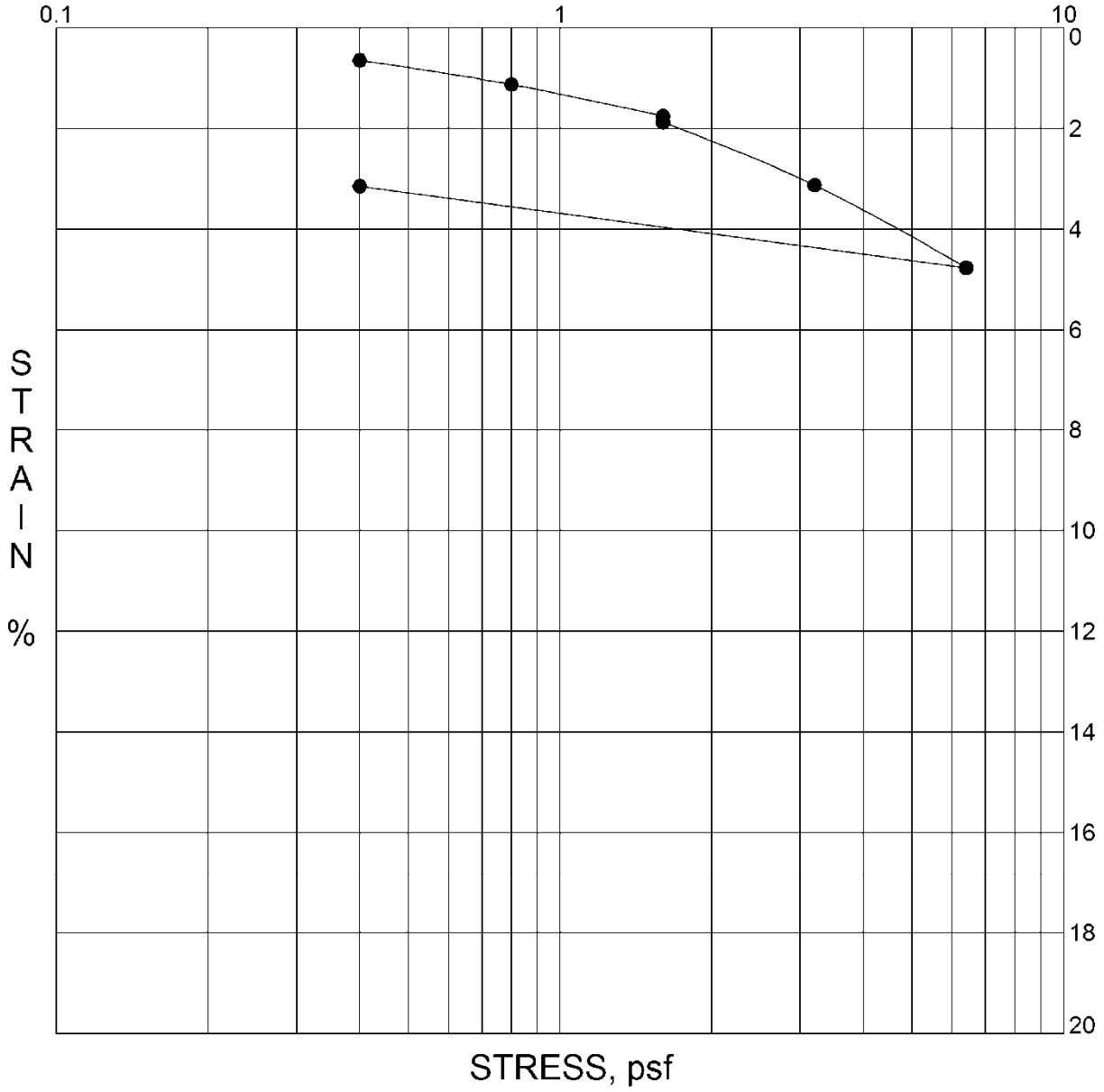
Figure C.4

PROJECT LOCATION: 23480 Park Sorrento

PROJECT NO.: 5032

SAMPLE LOCATION: B-3 @ 25.0

DESCRIPTION: Qal



Test Results

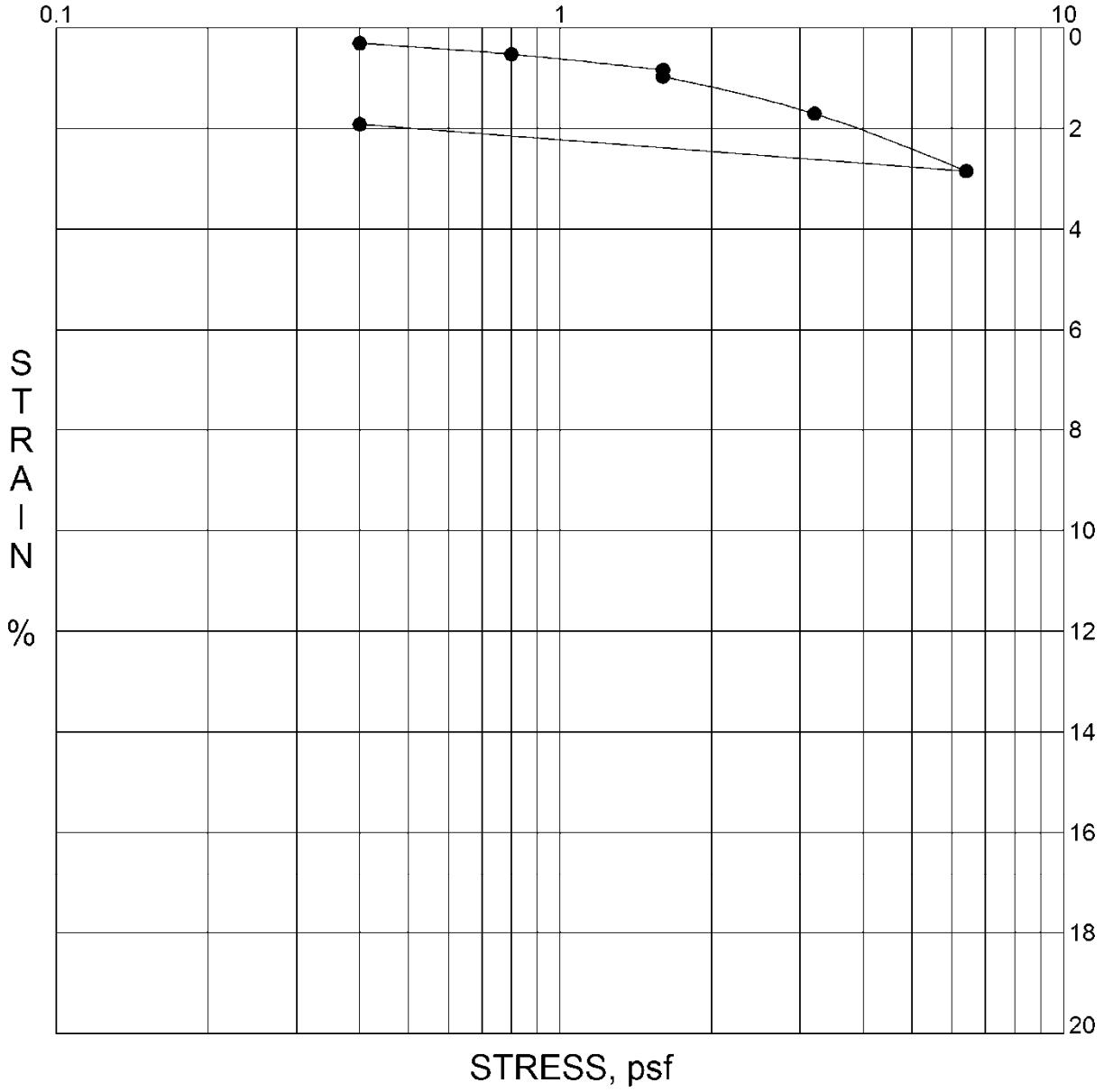
Moisture Content (%)	Density (pcf)	Water Added At
Insitu: 17.9	Dry Density: 109.7	**1600 lbs.**

CONSOLIDATION TEST DIAGRAM

Figure C.5

PROJECT LOCATION: 23480 Park Sorrento | PROJECT NO.: 5032

SAMPLE LOCATION: B-4 @ 15.0 | DESCRIPTION: Qal



Test Results

Moisture Content (%)	Density (pcf)	Water Added At
Insitu: 11.9	Dry Density: 114.2	**1600 lbs.**

CONSOLIDATION TEST DIAGRAM

Figure C.6

APPENDIX III

ANALYSES

Bearing Capacity

Lateral Design

Seismic Evaluation

BEARING CAPACITY ANALYSIS

CALCULATE THE ULTIMATE AND ALLOWABLE BEARING CAPACITIES OF THE BEARING MATERIAL LISTED BELOW USING HANSEN'S METHOD. (REFERENCE: J. BOWLES, *FOUNDATION ANALYSIS AND DESIGN*, 1988, p. 188-194).

CALCULATION PARAMETERS

EARTH MATERIAL:	Qal	EMBEDMENT DEPTH:	2 feet
SHEAR DIAGRAM:	B-3@10	PAD LENGTH:	2 feet
COHESION:	25 psf	PAD WIDTH:	2 feet
PHI ANGLE:	34 degrees	SLOPE ANGLE:	0 degrees
DENSITY:	110 pcf	PAD INCLINATION:	0 degrees
SAFETY FACTOR:	5		
FOOTING TYPE:	P Pad		

CALCULATED RESULTS

HANSEN'S SHAPE, DEPTH, AND INCLINATION FACTORS

Nq =	29.44	Dq =	1.26	Sy =	0.60
Nc =	42.16	Gc =	1.00	Dy =	1.00
Ny =	28.77	Bc =	1.00	Iy =	1.00
Sc =	1.70	Iq =	1.00	Gy =	1.00
Sq =	1.67	Ic =	1.00	Gq =	1.00
Dc =	1.40	Bq =	1.00	By =	1.00

CALCULATED ULTIMATE BEARING CAPACITY (Qult)	18,093.5 pounds
ALLOWABLE BEARING CAPACITY (Qa = Qult / fs)	3,618.7 pounds
PERCENT INCREASE FOR EMBEDMENT DEPTH	37.4%

BEARING CAPACITY ANALYSIS

CALCULATE THE ULTIMATE AND ALLOWABLE BEARING CAPACITIES OF THE BEARING MATERIAL LISTED BELOW USING HANSEN'S METHOD. (REFERENCE: J. BOWLES, *FOUNDATION ANALYSIS AND DESIGN*, 1988, p. 188-194).

CALCULATION PARAMETERS

EARTH MATERIAL:	Qal	EMBEDMENT DEPTH:	2 feet
SHEAR DIAGRAM:	B-3@10	FOOTING LENGTH:	100 feet
COHESION:	25 psf	FOOTING WIDTH:	2 feet
PHI ANGLE:	34 degrees	SLOPE ANGLE:	0 degrees
DENSITY:	110 pcf	FOOTING INCLINATION:	0 degrees
SAFETY FACTOR:	5		
FOOTING TYPE:	S Strip		

CALCULATED RESULTS

HANSEN'S SHAPE, DEPTH, AND INCLINATION FACTORS

Nq =	29.44	Dq =	1.26	Sy =	0.99
Nc =	42.16	Gc =	1.00	Dy =	1.00
Ny =	28.77	Bc =	1.00	Iy =	1.00
Sc =	1.01	Iq =	1.00	Gy =	1.00
Sq =	1.01	Ic =	1.00	Gq =	1.00
Dc =	1.40	Bq =	1.00	By =	1.00

CALCULATED ULTIMATE BEARING CAPACITY (Qult)	12,921.0 pounds
ALLOWABLE BEARING CAPACITY (Qa = Qult / fs)	2,584.2 pounds
PERCENT INCREASE FOR EMBEDMENT DEPTH	31.7%

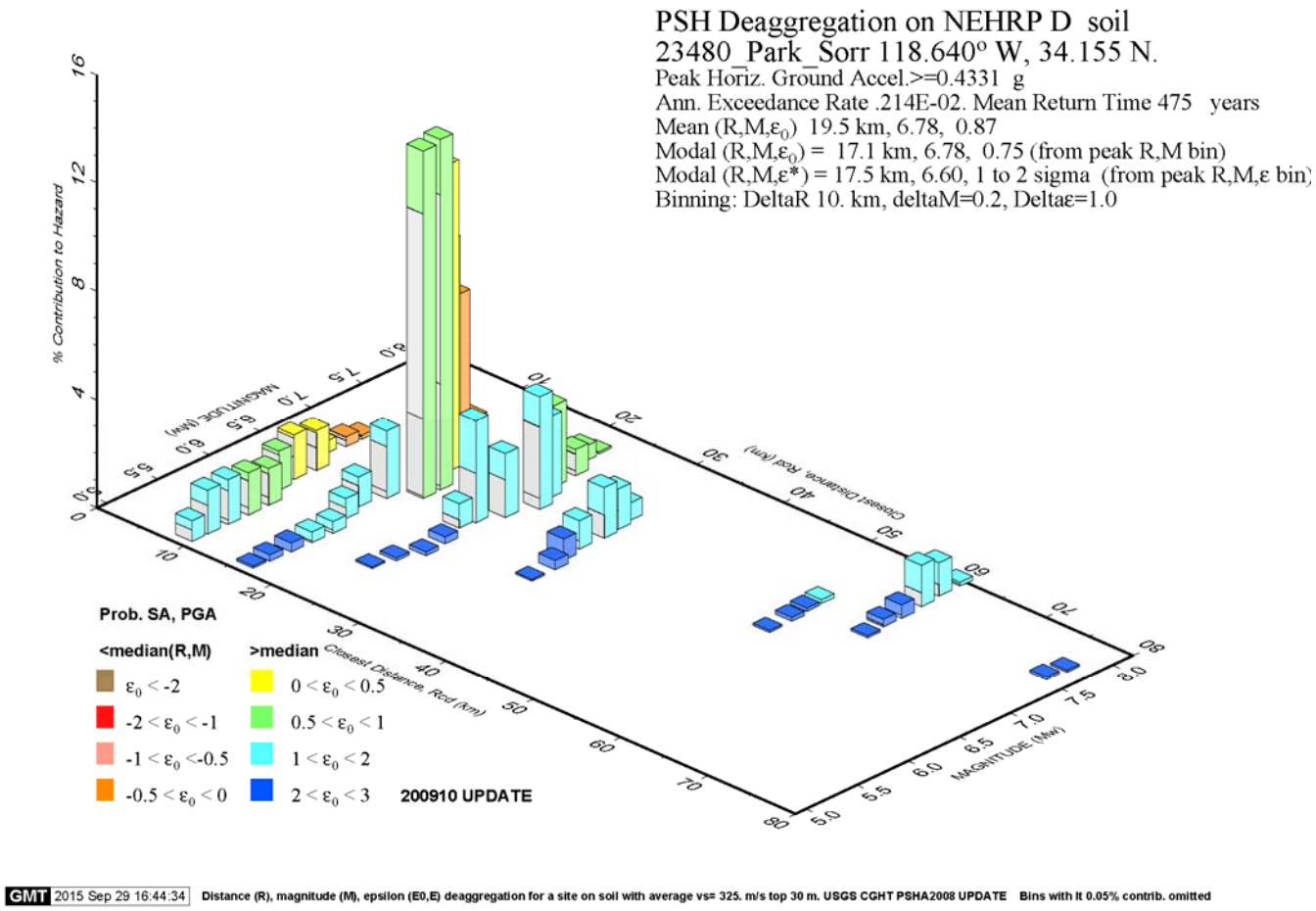
PASSIVE EARTH PRESSURE

USE RANKINE'S METHOD TO CALCULATE THE PASSIVE EARTH PRESSURE. USE THE PROCEDURE IN NAVFAC DM-7, 1982, (p 7.2-21, Figure 2).

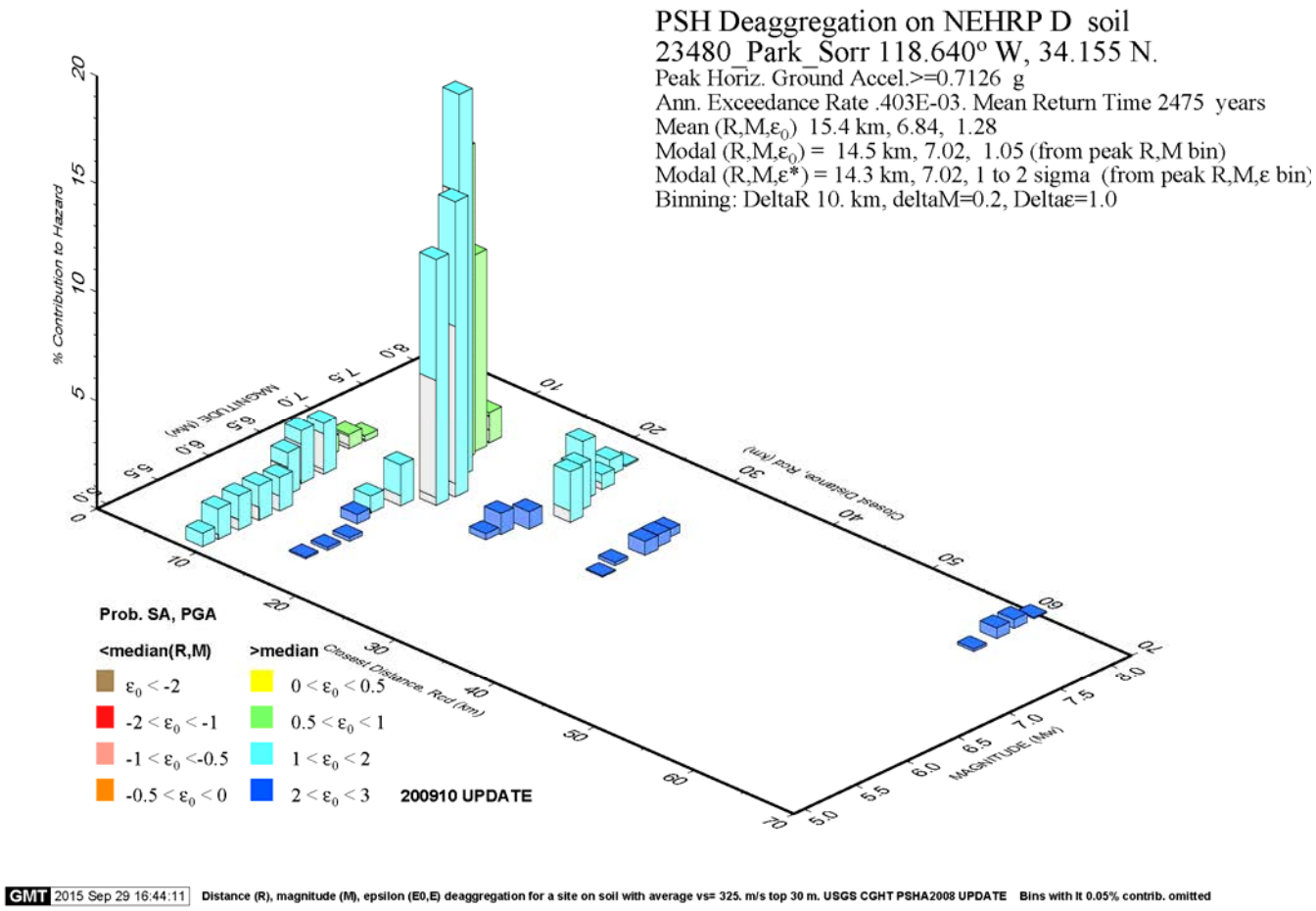
CALCULATION PARAMETERS

EARTH MATERIAL:	Qal	SAFETY FACTOR (fs):	1.5
SHEAR DIAGRAM:	B-3@10	INITIAL SEARCH DEPTH:	1
COHESION:	25 psf	FINAL SEARCH DEPTH:	20
PHI ANGLE:	34 degrees	LIMIT PASSIVE (Y OR N):	Y
DENSITY:	110 pcf	MAXIMUM PASSIVE:	100,000.0 pounds
		Cd (C/fs):	16.7 psf
		PhiD = atan(tan(phi)/fs) =	24.2 degrees

FOOTING DEPTH (feet)	TOTAL PASSIVE FORCE Pp (pounds)	PASSIVE EARTH PRESSURE AT DEPTH - SigmaP (psf)	INCREASE IN PASSIVE EARTH PRESSURE WITH EMBEDMENT DEPTH (psf/f)
1	183.0	314.5	314.5
2	629.0	577.4	263.0
3	1,337.9	840.4	263.0
4	2,309.8	1,103.4	263.0
5	3,544.6	1,366.3	263.0
6	5,042.4	1,629.3	263.0
7	6,803.2	1,892.2	263.0
8	8,826.9	2,155.2	263.0
9	11,113.5	2,418.1	263.0
10	13,663.1	2,681.1	263.0
11	16,475.7	2,944.0	263.0
12	19,551.2	3,207.0	263.0
13	22,889.7	3,469.9	263.0
14	26,491.1	3,732.9	263.0
15	30,355.5	3,995.9	263.0
16	34,482.8	4,258.8	263.0
17	38,873.1	4,521.8	263.0
18	43,526.3	4,784.7	263.0
19	48,442.5	5,047.7	263.0
20	53,621.7	5,310.6	263.0



GMT 2015 Sep 29 16:44:34 Distance (R), magnitude (M), epsilon (E0,E) deaggregation for a site on soil with average vs= 325. m/s top 30 m. USGS CGHT PSHA2008 UPDATE Bins with lt 0.05% contrib. omitted



GMT 2015 Sep 29 16:44:11 Distance (R), magnitude (M), epsilon (E0,E) deaggregation for a site on soil with average vs= 325. m/s top 30 m. USGS CGHT PSHA2008 UPDATE Bins with lt 0.05% contrib. omitted

USGS Design Maps Detailed Report

ASCE 7-10 Standard (34.15537°N, 118.64039°W)

Site Class D – "Stiff Soil", Risk Category I/II/III

Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_s) and 1.3 (to obtain S_1). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

From Figure 22-1 [1]	S_s = 1.885 g
From Figure 22-2 [2]	S_1 = 0.674 g

Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Chapter 20.

Table 20.3-1 Site Classification

Site Class	$\overline{v}_s$	$\overline{N}$ or $\overline{N}_{ch}$	$\overline{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index PI > 20, • Moisture content w ≥ 40%, and • Undrained shear strength $\overline{s}_u$ < 500 psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 11.4.3 — Site Coefficients and Risk–Targeted Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameters

Table 11.4–1: Site Coefficient F_a

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at Short Period				
	$S_S \le 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \ge 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_S

For Site Class = D and S_S = 1.885 g, F_a = 1.000

Table 11.4–2: Site Coefficient F_v

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at 1–s Period				
	$S_1 \le 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \ge 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_1

For Site Class = D and S_1 = 0.674 g, F_v = 1.500

Equation (11.4–1): $S_{MS} = F_a S_S = 1.000 \times 1.885 = 1.885$ g

Equation (11.4–2): $S_{M1} = F_v S_1 = 1.500 \times 0.674 = 1.011$ g

Section 11.4.4 — Design Spectral Acceleration Parameters

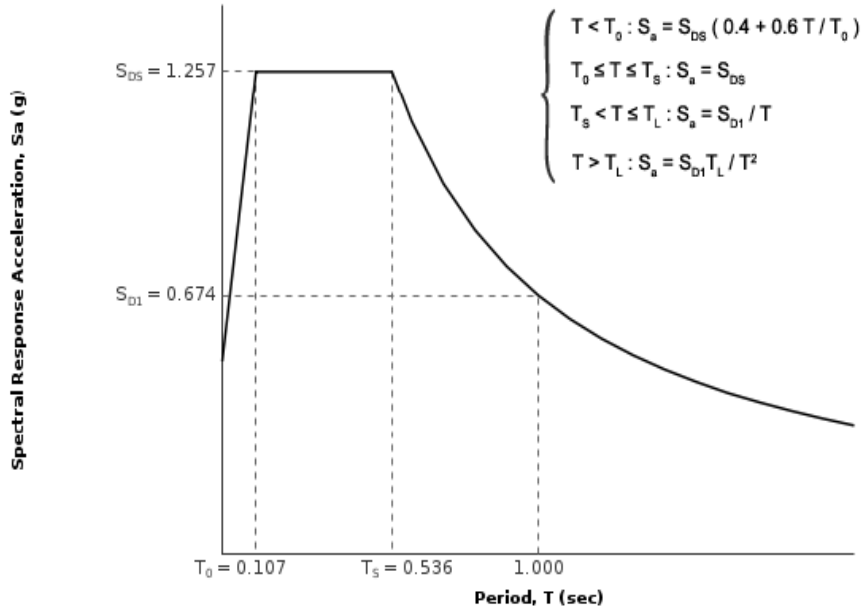
Equation (11.4–3): $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 1.885 = 1.257$ g

Equation (11.4–4): $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 1.011 = 0.674$ g

Section 11.4.5 — Design Response Spectrum

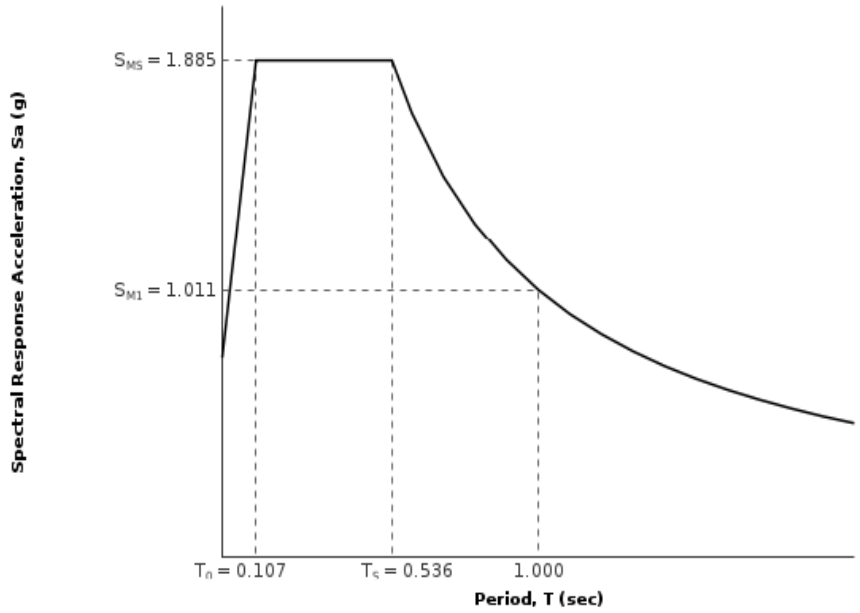
From Figure 22-12 [3] $T_L = 8$ seconds

Figure 11.4–1: Design Response Spectrum



Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake (MCE_R) Response Spectrum

The MCE_R Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4] PGA = 0.657

Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.657 = 0.657$ g

Table 11.8–1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of PGA

For Site Class = D and PGA = 0.657 g, F_{PGA} = 1.000

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From Figure 22-17 [5] C_{RS} = 1.017

From Figure 22-18 [6] C_{R1} = 1.031

Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \le S_{DS} < 0.33g$	B	B	C
$0.33g \le S_{DS} < 0.50g$	C	C	D
$0.50g \le S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 1.257 g, Seismic Design Category = D

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \le S_{D1} < 0.133g$	B	B	C
$0.133g \le S_{D1} < 0.20g$	C	C	D
$0.20g \le S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.674 g, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

References

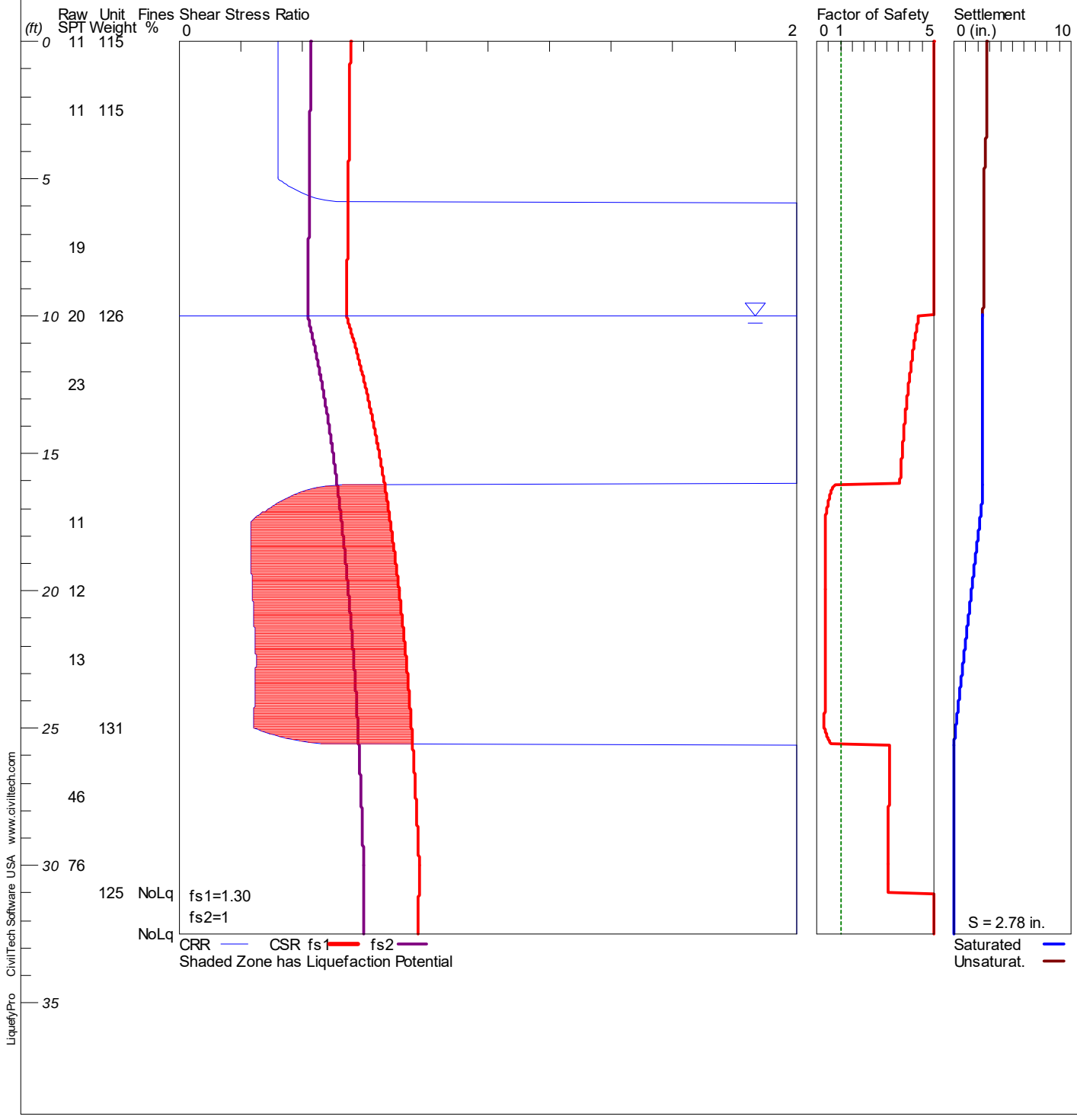
1. *Figure 22-1*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
2. *Figure 22-2*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
3. *Figure 22-12*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
4. *Figure 22-7*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
5. *Figure 22-17*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. *Figure 22-18*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

LIQUEFACTION ANALYSIS

23480 Park Sorrento

Hole No.=B-2 Water Depth=10 ft

Magnitude=7.02
Acceleration=0.657g



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                                  Copyright by CivilTech Software
                                       www.civiltech.com
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       Licensed to ,  9/30/2015      9:18:35 AM

       Input File Name: D:\Liquefy5\5032 B-2.liq
       Title:  23480 Park Sorrento
       Subtitle:  5032

       Surface Elev.=
       Hole No.=B-2
       Depth of Hole= 32.50 ft
       Water Table during Earthquake= 10.00 ft
       Water Table during In-Situ Testing= 19.00 ft
       Max. Acceleration= 0.66 g
       Earthquake Magnitude= 7.02

 Input Data:
       Surface Elev.=
       Hole No.=B-2
       Depth of Hole=32.50 ft
       Water Table during Earthquake= 10.00 ft
       Water Table during In-Situ Testing= 19.00 ft
       Max. Acceleration=0.66 g
       Earthquake Magnitude=7.02
       No-Liquefiable Soils:   CL, OL are Non-Liq. Soil

       1. SPT or BPT Calculation.
       2. Settlement Analysis Method: Ishihara / Yoshimine
       3. Fines Correction for Liquefaction: Stark/Olson et al.*
       4. Fine Correction for Settlement: During Liquefaction*
       5. Settlement Calculation in: All zones*
       6. Hammer Energy Ratio,                                    Ce = 1.25
       7. Borehole Diameter,                                          Cb= 1.15
       8. Sampling Method,                                            Cs= 1.2
       9. User request factor of safety (apply to CSR) ,   User= 1.3
          Plot two CSR (fs1=User, fs2=1)
       10. Use Curve Smoothing: Yes*
       * Recommended Options

       In-Situ Test Data:
       Depth   SPT     gamma   Fines
       ft              pcf     %
       ____________________________________
       0.00    11.00   115.00  0.00
       2.50    11.00   115.00  0.00
       5.00    11.00   115.00  0.00
       7.50    19.00   115.00  0.00
       10.00   20.00   126.00  0.00
       12.50   23.00   126.00  0.00
       15.00   23.00   126.00  0.00
       17.50   11.00   126.00  0.00
       20.00   12.00   126.00  0.00
       22.50   13.00   126.00  0.00
       25.00   13.00   131.00  0.00
       27.50   46.00   131.00  0.00
       30.00   76.00   131.00  0.00
       31.00   76.00   125.00  NoLiq
       32.50   76.00   125.00  NoLiq
       ____________________________________

Output Results:
       Settlement of Saturated Sands=2.48 in.
       Settlement of Unsaturated Sands=0.30 in.
       Total Settlement of Saturated and Unsaturated Sands=2.78 in.
       Differential Settlement=1.390 to 1.835 in.

       Depth   CRRm    CSRfs   F.S.    S_sat.  S_dry   S_all
```

ft				in.	in.	in.
0.00	0.32	0.56	5.00	2.48	0.30	2.78
1.00	0.32	0.55	5.00	2.48	0.30	2.78
2.00	0.32	0.55	5.00	2.48	0.30	2.77
3.00	0.32	0.55	5.00	2.48	0.28	2.76
4.00	0.32	0.55	5.00	2.48	0.18	2.66
5.00	0.32	0.55	5.00	2.48	0.13	2.60
6.00	2.37	0.55	5.00	2.48	0.10	2.58
7.00	2.37	0.55	5.00	2.48	0.09	2.56
8.00	2.37	0.54	5.00	2.48	0.07	2.55
9.00	2.37	0.54	5.00	2.48	0.05	2.52
10.00	2.37	0.54	4.37	2.48	0.00	2.48
11.00	2.37	0.57	4.17	2.48	0.00	2.48
12.00	2.37	0.59	4.00	2.48	0.00	2.48
13.00	2.37	0.61	3.86	2.48	0.00	2.48
14.00	2.37	0.63	3.75	2.48	0.00	2.48
15.00	2.37	0.65	3.65	2.48	0.00	2.48
16.00	2.37	0.66	3.57	2.48	0.00	2.48
17.00	0.29	0.68	0.43*	2.32	0.00	2.32
18.00	0.23	0.69	0.34*	2.05	0.00	2.05
19.00	0.23	0.70	0.33*	1.77	0.00	1.77
20.00	0.24	0.71	0.33*	1.49	0.00	1.49
21.00	0.24	0.72	0.34*	1.21	0.00	1.21
22.00	0.25	0.73	0.34*	0.94	0.00	0.94
23.00	0.25	0.74	0.34*	0.67	0.00	0.67
24.00	0.24	0.75	0.33*	0.40	0.00	0.40
25.00	0.24	0.75	0.32*	0.13	0.00	0.13
26.00	2.37	0.76	3.12	0.00	0.00	0.00
27.00	2.37	0.76	3.10	0.00	0.00	0.00
28.00	2.37	0.77	3.08	0.00	0.00	0.00
29.00	2.37	0.77	3.06	0.00	0.00	0.00
30.00	2.37	0.78	3.05	0.00	0.00	0.00
31.00	2.37	0.78	3.05	0.00	0.00	0.00
32.00	2.00	0.78	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

```
**********************************************************************************************
                                LIQUEFACTION ANALYSIS CALCULATION DETAILS
                                     Copyright by CivilTech Software
                                          www.civiltech.com
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       Licensed to ,  9/30/2015      9:18:39 AM

       Input File Name: D:\Liquefy5\5032 B-2.liq
       Title:  23480 Park Sorrento
       Subtitle:  5032

 Input Data:
       Surface Elev.=
       Hole No.=B-2
       Depth of Hole=32.50 ft
       Water Table during Earthquake= 10.00 ft
       Water Table during In-Situ Testing= 19.00 ft
       Max. Acceleration=0.66 g
       Earthquake Magnitude=7.02
       No-Liquefiable Soils:   CL, OL are Non-Liq. Soil
       1. SPT or BPT Calculation.
       2. Settlement Analysis Method: Ishihara / Yoshimine
       3. Fines Correction for Liquefaction: Stark/Olson et al.*
       4. Fine Correction for Settlement: During Liquefaction*
       5. Settlement Calculation in: All zones*
       6. Hammer Energy Ratio,                                    Ce = 1.25
       7. Borehole Diameter,                                          Cb= 1.15
       8. Sampling Method,                                          Cs= 1.2
       9. User request factor of safety (apply to CSR) ,   User= 1.3
          Plot two CSR (fs1=User, fs2=1)
       10. Average two input data between two Depths: Yes*
       * Recommended Options

       In-Situ Test Data:
       Depth   SPT     Gamma   Fines
       ft              pcf     %
       ____________________________________
       0.00    11.00   115.00  0.00
       2.50    11.00   115.00  0.00
       5.00    11.00   115.00  0.00
       7.50    19.00   115.00  0.00
       10.00   20.00   126.00  0.00
       12.50   23.00   126.00  0.00
       15.00   23.00   126.00  0.00
       17.50   11.00   126.00  0.00
       20.00   12.00   126.00  0.00
       22.50   13.00   126.00  0.00
       25.00   13.00   131.00  0.00
       27.50   46.00   131.00  0.00
       30.00   76.00   131.00  0.00
       31.00   76.00   125.00  NoLiq
       32.50   76.00   125.00  NoLiq
       ____________________________________


 Output Results:
       Calculation segment, dz=0.050 ft
       User defined Print Interval, dp=1.00 ft

       Peak Ground Acceleration (PGA), a_max = 0.66g

       CSR Calculation:
       Depth   gamma   sigma   gamma'  sigma'   rd     mZ      a(z)    CSR     x fs1   =CSRfs
       ft      pcf     atm     pcf     atm             g       g
       ____________________________________________________________________________________
       0.00    115.00  0.000   115.00  0.000   1.00    0.000   0.657   0.43    1.30    0.56
       1.00    115.00  0.054   115.00  0.054   1.00    0.000   0.657   0.43    1.30    0.55
       2.00    115.00  0.109   115.00  0.109   1.00    0.000   0.657   0.43    1.30    0.55
       3.00    115.00  0.163   115.00  0.163   0.99    0.000   0.657   0.42    1.30    0.55
       4.00    115.00  0.217   115.00  0.217   0.99    0.000   0.657   0.42    1.30    0.55
```

5.00	115.00	0.272	115.00	0.272	0.99	0.000	0.657	0.42	1.30	0.55
6.00	115.00	0.326	115.00	0.326	0.99	0.000	0.657	0.42	1.30	0.55
7.00	115.00	0.380	115.00	0.380	0.98	0.000	0.657	0.42	1.30	0.55
8.00	117.20	0.435	117.20	0.435	0.98	0.000	0.657	0.42	1.30	0.54
9.00	121.60	0.491	121.60	0.491	0.98	0.000	0.657	0.42	1.30	0.54
10.00	126.00	0.550	63.60	0.550	0.98	0.000	0.657	0.42	1.30	0.54
11.00	126.00	0.609	63.60	0.580	0.97	0.000	0.657	0.44	1.30	0.57
12.00	126.00	0.669	63.60	0.610	0.97	0.000	0.657	0.46	1.30	0.59
13.00	126.00	0.728	63.60	0.640	0.97	0.000	0.657	0.47	1.30	0.61
14.00	126.00	0.788	63.60	0.670	0.97	0.000	0.657	0.49	1.30	0.63
15.00	126.00	0.848	63.60	0.700	0.97	0.000	0.657	0.50	1.30	0.65
16.00	126.00	0.907	63.60	0.730	0.96	0.000	0.657	0.51	1.30	0.66
17.00	126.00	0.967	63.60	0.760	0.96	0.000	0.657	0.52	1.30	0.68
18.00	126.00	1.026	63.60	0.790	0.96	0.000	0.657	0.53	1.30	0.69
19.00	126.00	1.086	63.60	0.820	0.96	0.000	0.657	0.54	1.30	0.70
20.00	126.00	1.145	63.60	0.850	0.95	0.000	0.657	0.55	1.30	0.71
21.00	126.00	1.205	63.60	0.880	0.95	0.000	0.657	0.56	1.30	0.72
22.00	126.00	1.264	63.60	0.910	0.95	0.000	0.657	0.56	1.30	0.73
23.00	127.00	1.324	64.60	0.941	0.95	0.000	0.657	0.57	1.30	0.74
24.00	129.00	1.384	66.60	0.972	0.94	0.000	0.657	0.57	1.30	0.75
25.00	131.00	1.446	68.60	1.004	0.94	0.000	0.657	0.58	1.30	0.75
26.00	131.00	1.508	68.60	1.036	0.94	0.000	0.657	0.58	1.30	0.76
27.00	131.00	1.570	68.60	1.068	0.94	0.000	0.657	0.59	1.30	0.76
28.00	131.00	1.632	68.60	1.101	0.93	0.000	0.657	0.59	1.30	0.77
29.00	131.00	1.693	68.60	1.133	0.93	0.000	0.657	0.60	1.30	0.77
30.00	131.00	1.755	68.60	1.166	0.93	0.000	0.657	0.60	1.30	0.78
31.00	125.00	1.816	62.60	1.197	0.92	0.000	0.657	0.60	1.30	0.78
32.00	125.00	1.875	62.60	1.226	0.91	0.000	0.657	0.60	1.30	0.78

CSR is based on water table at 10.00 during earthquake

CRR Calculation from SPT or BPT data:

Depth ft	SPT	Cebs	Cr	sigma' atm	Cn	(N1)60	Fines %	d(N1)60	(N1)60f	CRR7.5
0.00	11.00	1.73	0.75	0.000	1.70	24.19	0.00	0.00	24.19	0.27
1.00	11.00	1.73	0.75	0.054	1.70	24.19	0.00	0.00	24.19	0.27
2.00	11.00	1.73	0.75	0.109	1.70	24.19	0.00	0.00	24.19	0.27
3.00	11.00	1.73	0.75	0.163	1.70	24.19	0.00	0.00	24.19	0.27
4.00	11.00	1.73	0.75	0.217	1.70	24.19	0.00	0.00	24.19	0.27
5.00	11.00	1.73	0.75	0.272	1.70	24.19	0.00	0.00	24.19	0.27
6.00	14.20	1.73	0.75	0.326	1.70	31.23	0.00	0.00	31.23	2.00
7.00	17.40	1.73	0.75	0.380	1.62	36.50	0.00	0.00	36.50	2.00
8.00	19.20	1.73	0.75	0.435	1.52	37.66	0.00	0.00	37.66	2.00
9.00	19.60	1.73	0.85	0.491	1.43	41.00	0.00	0.00	41.00	2.00
10.00	20.00	1.73	0.85	0.550	1.35	39.55	0.00	0.00	39.55	2.00
11.00	21.20	1.73	0.85	0.609	1.28	39.82	0.00	0.00	39.82	2.00
12.00	22.40	1.73	0.85	0.669	1.22	40.16	0.00	0.00	40.16	2.00
13.00	23.00	1.73	0.85	0.728	1.17	39.51	0.00	0.00	39.51	2.00
14.00	23.00	1.73	0.85	0.788	1.13	37.99	0.00	0.00	37.99	2.00
15.00	23.00	1.73	0.95	0.848	1.09	40.94	0.00	0.00	40.94	2.00
16.00	18.20	1.73	0.95	0.907	1.05	31.32	0.00	0.00	31.32	2.00
17.00	13.40	1.73	0.95	0.967	1.02	22.34	0.00	0.00	22.34	0.24
18.00	11.20	1.73	0.95	1.026	0.99	18.12	0.00	0.00	18.12	0.20
19.00	11.60	1.73	0.95	1.086	0.96	18.24	0.00	0.00	18.24	0.20
20.00	12.00	1.73	0.95	1.117	0.95	18.60	0.00	0.00	18.60	0.20
21.00	12.40	1.73	0.95	1.147	0.93	18.97	0.00	0.00	18.97	0.20
22.00	12.80	1.73	0.95	1.177	0.92	19.33	0.00	0.00	19.33	0.21
23.00	13.00	1.73	0.95	1.207	0.91	19.39	0.00	0.00	19.39	0.21
24.00	13.00	1.73	0.95	1.238	0.90	19.14	0.00	0.00	19.14	0.21
25.00	13.00	1.73	0.95	1.270	0.89	18.90	0.00	0.00	18.90	0.20
26.00	26.20	1.73	0.95	1.303	0.88	37.61	0.00	0.00	37.61	2.00
27.00	39.40	1.73	0.95	1.335	0.87	55.88	0.00	0.00	55.88	2.00
28.00	52.00	1.73	1.00	1.368	0.86	76.70	0.00	0.00	76.70	2.00
29.00	64.00	1.73	1.00	1.400	0.85	93.30	0.00	0.00	93.30	2.00
30.00	76.00	1.73	1.00	1.432	0.84	109.53	0.00	0.00	109.53	2.00
31.00	76.00	1.73	1.00	1.464	0.83	108.37	NoLiq	7.20	115.57	2.00
32.00	76.00	1.73	1.00	1.493	0.82	107.29	NoLiq	7.20	114.49	2.00

CRR is based on water table at 19.00 during In-Situ Testing

Factor of Safety, - Earthquake Magnitude= 7.02:

Depth	sigC'	CRR7.5	x Ksig	=CRRv	x MSF	=CRRm	CSRfs	F.S.=CRRm/CSRfs

ft	atm							
0.00	0.00	0.27	1.00	0.27	1.18	0.32	0.56	5.00
1.00	0.04	0.27	1.00	0.27	1.18	0.32	0.55	5.00
2.00	0.07	0.27	1.00	0.27	1.18	0.32	0.55	5.00
3.00	0.11	0.27	1.00	0.27	1.18	0.32	0.55	5.00
4.00	0.14	0.27	1.00	0.27	1.18	0.32	0.55	5.00
5.00	0.18	0.27	1.00	0.27	1.18	0.32	0.55	5.00
6.00	0.21	2.00	1.00	2.00	1.18	2.37	0.55	5.00
7.00	0.25	2.00	1.00	2.00	1.18	2.37	0.55	5.00
8.00	0.28	2.00	1.00	2.00	1.18	2.37	0.54	5.00
9.00	0.32	2.00	1.00	2.00	1.18	2.37	0.54	5.00
10.00	0.36	2.00	1.00	2.00	1.18	2.37	0.54	4.37
11.00	0.40	2.00	1.00	2.00	1.18	2.37	0.57	4.17
12.00	0.43	2.00	1.00	2.00	1.18	2.37	0.59	4.00
13.00	0.47	2.00	1.00	2.00	1.18	2.37	0.61	3.86
14.00	0.51	2.00	1.00	2.00	1.18	2.37	0.63	3.75
15.00	0.55	2.00	1.00	2.00	1.18	2.37	0.65	3.65
16.00	0.59	2.00	1.00	2.00	1.18	2.37	0.66	3.57
17.00	0.63	0.24	1.00	0.24	1.18	0.29	0.68	0.43 *
18.00	0.67	0.20	1.00	0.20	1.18	0.23	0.69	0.34 *
19.00	0.71	0.20	1.00	0.20	1.18	0.23	0.70	0.33 *
20.00	0.73	0.20	1.00	0.20	1.18	0.24	0.71	0.33 *
21.00	0.75	0.20	1.00	0.20	1.18	0.24	0.72	0.34 *
22.00	0.77	0.21	1.00	0.21	1.18	0.25	0.73	0.34 *
23.00	0.78	0.21	1.00	0.21	1.18	0.25	0.74	0.34 *
24.00	0.80	0.21	1.00	0.21	1.18	0.24	0.75	0.33 *
25.00	0.83	0.20	1.00	0.20	1.18	0.24	0.75	0.32 *
26.00	0.85	2.00	1.00	2.00	1.18	2.37	0.76	3.12
27.00	0.87	2.00	1.00	2.00	1.18	2.37	0.76	3.10
28.00	0.89	2.00	1.00	2.00	1.18	2.37	0.77	3.08
29.00	0.91	2.00	1.00	2.00	1.18	2.37	0.77	3.06
30.00	0.93	2.00	1.00	2.00	1.18	2.37	0.78	3.05
31.00	0.95	2.00	1.00	2.00	1.18	2.37	0.78	3.05
32.00	0.97	2.00	1.00	2.00	1.18	2.00	0.78	5.00 ^

* F.S.<1: Liquefaction Potential Zone. (If above water table: F.S.=5)
^ No-liquefiable Soils or above Water Table.
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

CPT convert to SPT for Settlement Analysis:
Fines Correction for Settlement Analysis:

Depth	Ic	qc/N60	qc1	(N1)60	Fines	d(N1)60	(N1)60s
ft			atm		%		
0.00	-	-	-	24.19	0.00	0.00	24.19
1.00	-	-	-	24.19	0.00	0.00	24.19
2.00	-	-	-	24.19	0.00	0.00	24.19
3.00	-	-	-	24.19	0.00	0.00	24.19
4.00	-	-	-	24.19	0.00	0.00	24.19
5.00	-	-	-	24.19	0.00	0.00	24.19
6.00	-	-	-	31.23	0.00	0.00	31.23
7.00	-	-	-	36.50	0.00	0.00	36.50
8.00	-	-	-	37.66	0.00	0.00	37.66
9.00	-	-	-	41.00	0.00	0.00	41.00
10.00	-	-	-	39.55	0.00	0.00	39.55
11.00	-	-	-	39.82	0.00	0.00	39.82
12.00	-	-	-	40.16	0.00	0.00	40.16
13.00	-	-	-	39.51	0.00	0.00	39.51
14.00	-	-	-	37.99	0.00	0.00	37.99
15.00	-	-	-	40.94	0.00	0.00	40.94
16.00	-	-	-	31.32	0.00	0.00	31.32
17.00	-	-	-	22.34	0.00	0.00	22.34
18.00	-	-	-	18.12	0.00	0.00	18.12
19.00	-	-	-	18.24	0.00	0.00	18.24
20.00	-	-	-	18.60	0.00	0.00	18.60
21.00	-	-	-	18.97	0.00	0.00	18.97
22.00	-	-	-	19.33	0.00	0.00	19.33
23.00	-	-	-	19.39	0.00	0.00	19.39
24.00	-	-	-	19.14	0.00	0.00	19.14
25.00	-	-	-	18.90	0.00	0.00	18.90
26.00	-	-	-	37.61	0.00	0.00	37.61

27.00	-	-	-	55.88	0.00	0.00	55.88
28.00	-	-	-	76.70	0.00	0.00	76.70
29.00	-	-	-	93.30	0.00	0.00	93.30
30.00	-	-	-	100.00	0.00	0.00	100.00
31.00	-	-	-	100.00	NoLiq	0.00	100.00
32.00	-	-	-	100.00	NoLiq	0.00	100.00

(N1)60s has been fines corrected in liquefaction analysis, therefore d(N1)60=0.
Fines=NoLiq means the soils are not liquefiable.

Settlement of Saturated Sands:
Settlement Analysis Method: Ishihara / Yoshimine

Depth ft	CSRsf	/ MSF*	=CSRm	F.S.	Fines %	(N1)60s	Dr %	ec %	dsz in.	dsp in.	S in.
32.45	0.77	1.00	0.77	5.00	NoLiq	100.00	100.00	0.000	0.0E0	0.000	0.000
32.00	0.78	1.00	0.78	5.00	NoLiq	100.00	100.00	0.000	0.0E0	0.000	0.000
31.00	0.78	1.00	0.78	3.05	NoLiq	100.00	100.00	0.000	0.0E0	0.000	0.000
30.00	0.78	1.00	0.78	3.05	0.00	100.00	100.00	0.000	0.0E0	0.000	0.000
29.00	0.77	1.00	0.77	3.06	0.00	93.30	100.00	0.000	0.0E0	0.000	0.000
28.00	0.77	1.00	0.77	3.08	0.00	76.70	100.00	0.000	0.0E0	0.000	0.000
27.00	0.76	1.00	0.76	3.10	0.00	55.88	100.00	0.000	0.0E0	0.000	0.000
26.00	0.76	1.00	0.76	3.12	0.00	37.61	100.00	0.000	0.0E0	0.000	0.000
25.00	0.75	1.00	0.75	0.32	0.00	18.90	68.56	2.284	1.4E-2	0.130	0.130
24.00	0.75	1.00	0.75	0.33	0.00	19.14	68.99	2.257	1.4E-2	0.272	0.402
23.00	0.74	1.00	0.74	0.34	0.00	19.39	69.43	2.230	1.3E-2	0.269	0.672
22.00	0.73	1.00	0.73	0.34	0.00	19.33	69.33	2.236	1.3E-2	0.267	0.939
21.00	0.72	1.00	0.72	0.34	0.00	18.97	68.68	2.276	1.4E-2	0.271	1.210
20.00	0.71	1.00	0.71	0.33	0.00	18.60	68.02	2.316	1.4E-2	0.276	1.485
19.00	0.70	1.00	0.70	0.33	0.00	18.24	67.36	2.356	1.4E-2	0.281	1.766
18.00	0.69	1.00	0.69	0.34	0.00	18.12	67.13	2.370	1.4E-2	0.284	2.049
17.00	0.68	1.00	0.68	0.43	0.00	22.34	74.76	1.982	1.2E-2	0.271	2.320
16.00	0.66	1.00	0.66	3.57	0.00	31.32	93.11	0.000	0.0E0	0.156	2.476
15.00	0.65	1.00	0.65	3.65	0.00	40.94	100.00	0.000	0.0E0	0.000	2.476
14.00	0.63	1.00	0.63	3.75	0.00	37.99	100.00	0.000	0.0E0	0.000	2.476
13.00	0.61	1.00	0.61	3.86	0.00	39.51	100.00	0.000	0.0E0	0.000	2.476
12.00	0.59	1.00	0.59	4.00	0.00	40.16	100.00	0.000	0.0E0	0.000	2.476
11.00	0.57	1.00	0.57	4.17	0.00	39.82	100.00	0.000	0.0E0	0.000	2.476
10.00	0.54	1.00	0.54	4.37	0.00	39.55	100.00	0.000	0.0E0	0.000	2.476

Settlement of Saturated Sands=2.476 in.
qc1 and (N1)60 is after fines correction in liquefaction analysis
dsz is per each segment, dz=0.05 ft
dsp is per each print interval, dp=1.00 ft
S is cumulated settlement at this depth

Settlement of Unsaturated Sands:

Depth ft	sigma' atm	sigC' atm	(N1)60s	CSRsf	Gmax atm	g*Ge/Gm	g_eff	ec7.5 %	Cec	ec %	dsz in.	dsp in.	S in.
9.95	0.55	0.36	39.62	0.54	907.80	3.3E-4	0.1178	0.0382	0.93	0.0357	4.28E-4	0.000	0.000
9.00	0.49	0.32	41.00	0.54	870.40	3.1E-4	0.4751	0.1502	0.93	0.1404	1.68E-3	0.045	0.045
8.00	0.43	0.28	37.66	0.54	796.14	3.0E-4	0.3211	0.1189	0.93	0.1111	1.33E-3	0.025	0.070
7.00	0.38	0.25	36.50	0.55	736.77	2.8E-4	0.1790	0.0714	0.93	0.0667	8.00E-4	0.018	0.089
6.00	0.33	0.21	31.23	0.55	647.62	2.8E-4	0.1457	0.0779	0.93	0.0727	8.73E-4	0.016	0.105
5.00	0.27	0.18	24.19	0.55	543.01	2.7E-4	0.1411	0.1084	0.93	0.1013	1.22E-3	0.021	0.126
4.00	0.22	0.14	24.19	0.55	485.68	2.5E-4	1.0000	0.7682	0.93	0.7178	8.61E-3	0.057	0.182
3.00	0.16	0.11	24.19	0.55	420.62	2.1E-4	0.1593	0.1224	0.93	0.1143	1.37E-3	0.101	0.283
2.00	0.11	0.07	24.19	0.55	343.44	1.7E-4	0.0398	0.0306	0.93	0.0286	3.43E-4	0.012	0.296
1.00	0.05	0.04	24.19	0.55	242.86	1.2E-4	0.0230	0.0176	0.93	0.0165	1.98E-4	0.005	0.301

0.00 0.00 0.00 24.19 0.56 3.29 1.7E-6 0.0010 0.0008 0.93 0.0007 8.75E-6 0.003 0.303

Settlement of Unsaturated Sands=0.303 in.
dsz is per each segment, dz=0.05 ft
dsp is per each print interval, dp=1.00 ft
S is cumulated settlement at this depth

Total Settlement of Saturated and Unsaturated Sands=2.780 in.
Differential Settlement=1.390 to 1.835 in.

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

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1 atm (atmosphere) = 1.0581 tsf(1 tsf = 1 ton/ft2 = 2 kip/ft2)
1 atm (atmosphere) = 101.325 kPa(1 kPa = 1 kN/m2 = 0.001 Mpa)

SPT	Field data from Standard Penetration Test (SPT)
BPT	Field data from Becker Penetration Test (BPT)
qc	Field data from Cone Penetration Test (CPT) [atm (tsf)]
fs	Friction from CPT testing [atm (tsf)]
Rf	Ratio of fs/qc (%)
gamma	Total unit weight of soil
gamma'	Effective unit weight of soil
Fines	Fines content [%]
D50	Mean grain size
Dr	Relative Density
sigma	Total vertical stress [atm]
sigma'	Effective vertical stress [atm]
sigC'	Effective confining pressure [atm]
rd	Acceleration reduction coefficient by Seed
a_max.	Peak Ground Acceleration (PGA) in ground surface
mZ	Linear acceleration reduction coefficient X depth
a_min.	Minimum acceleration under linear reduction, mZ
CRRv	CRR after overburden stress correction, CRRv=CRR7.5 * Ksig
CRR7.5	Cyclic resistance ratio (M=7.5)
Ksig	Overburden stress correction factor for CRR7.5
CRRm	After magnitude scaling correction CRRm=CRRv * MSF
MSF	Magnitude scaling factor from M=7.5 to user input M
CSR	Cyclic stress ratio induced by earthquake
CSRfs	CSRfs=CSR*fs1 (Default fs1=1)
fs1	First CSR curve in graphic defined in #9 of Advanced page
fs2	2nd CSR curve in graphic defined in #9 of Advanced page
F.S.	Calculated factor of safety against liquefaction F.S.=CRRm/CSRsf
Cebs	Energy Ratio, Borehole Dia., and Sampling Method Corrections
Cr	Rod Length Corrections
Cn	Overburden Pressure Correction
(N1)60	SPT after corrections, (N1)60=SPT * Cr * Cn * Cebs
d(N1)60	Fines correction of SPT
(N1)60f	(N1)60 after fines corrections, (N1)60f=(N1)60 + d(N1)60
Cq	Overburden stress correction factor
qc1	CPT after Overburden stress correction
dqc1	Fines correction of CPT
qc1f	CPT after Fines and Overburden correction, qc1f=qc1 + dqc1
qc1n	CPT after normalization in Robertson's method
Kc	Fine correction factor in Robertson's Method
qc1f	CPT after Fines correction in Robertson's Method
Ic	Soil type index in Suzuki's and Robertson's Methods
(N1)60s	(N1)60 after settlement fines corrections
CSRm	After magnitude scaling correction for Settlement calculation CSRm=CSRsf / MSF*
CSRfs	Cyclic stress ratio induced by earthquake with user inputed fs
MSF*	Scaling factor from CSR, MSF*=1, based on Item 2 of Page C.
ec	Volumetric strain for saturated sands
dz	Calculation segment, dz=0.050 ft
dsz	Settlement in each segment, dz
dp	User defined print interval
dsp	Settlement in each print interval, dp
Gmax	Shear Modulus at low strain
g_eff	gamma_eff, Effective shear Strain
g*Ge/Gm	gamma_eff * G_eff/G_max, Strain-modulus ratio
ec7.5	Volumetric Strain for magnitude=7.5
Cec	Magnitude correction factor for any magnitude
ec	Volumetric strain for unsaturated sands, ec=Cec * ec7.5

NoLiq No-Liquefy Soils

References:

1. NCEER Workshop on Evaluation of Liquefaction Resistance of Soils. Youd, T.L., and Idriss, I.M., eds., Technical Report NCEER 97-0022.
SP117. Southern California Earthquake Center. Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for
Analyzing and Mitigating Liquefaction in California. University of Southern California. March 1999.
2. RECENT ADVANCES IN SOIL LIQUEFACTION ENGINEERING AND SEISMIC SITE RESPONSE EVALUATION, Paper No. SPL-2, PROCEEDINGS: Fourth
International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, San Diego, CA, March 2001.
3. RECENT ADVANCES IN SOIL LIQUEFACTION ENGINEERING: A UNIFIED AND CONSISTENT FRAMEWORK, Earthquake Engineering Research Center,
Report No. EERC 2003-06 by R.B Seed and etc. April 2003.

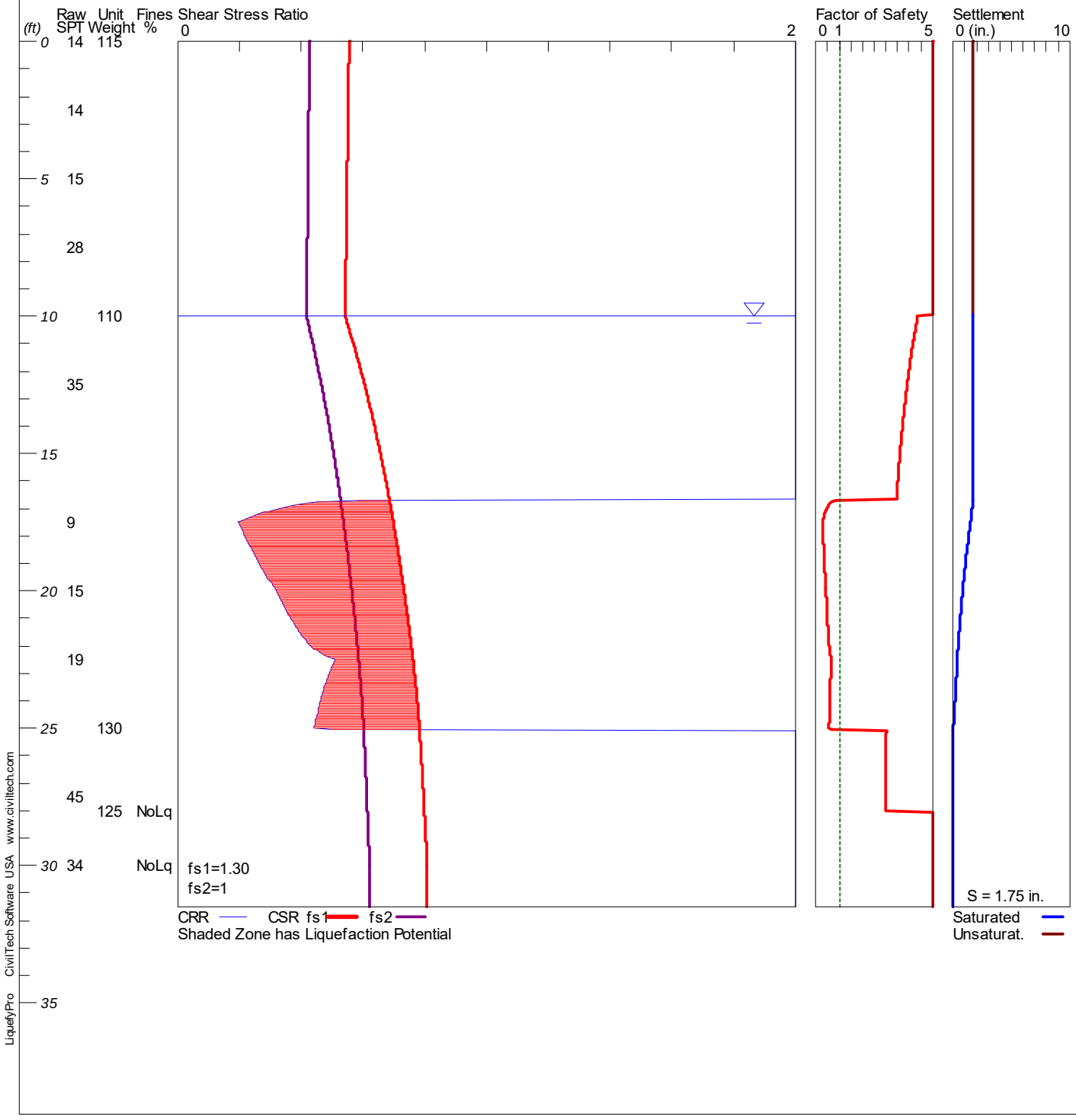
Note: Print Interval you selected does not show complete results. To get complete results, you should select 'Segment' in Print Interval (Item 12, Page C).

LIQUEFACTION ANALYSIS

23480 Park Sorrento

Hole No.=B-3 Water Depth=10 ft

Magnitude=7.02
Acceleration=0.657g



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**********************************************************************************************
                                    LIQUEFACTION ANALYSIS SUMMARY
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                                       www.civiltech.com
**********************************************************************************************
       Font: Courier New, Regular, Size 8 is recommended for this report.
       Licensed to ,  9/30/2015      9:18:02 AM

       Input File Name: D:\Liquefy5\5032 B-3.liq
       Title:  23480 Park Sorrento
       Subtitle:  5032

       Surface Elev.=
       Hole No.=B-3
       Depth of Hole= 31.50 ft
       Water Table during Earthquake= 10.00 ft
       Water Table during In-Situ Testing= 19.00 ft
       Max. Acceleration= 0.66 g
       Earthquake Magnitude= 7.02

 Input Data:
       Surface Elev.=
       Hole No.=B-3
       Depth of Hole=31.50 ft
       Water Table during Earthquake= 10.00 ft
       Water Table during In-Situ Testing= 19.00 ft
       Max. Acceleration=0.66 g
       Earthquake Magnitude=7.02
       No-Liquefiable Soils:   CL, OL are Non-Liq. Soil

       1. SPT or BPT Calculation.
       2. Settlement Analysis Method: Ishihara / Yoshimine
       3. Fines Correction for Liquefaction: Stark/Olson et al.*
       4. Fine Correction for Settlement: During Liquefaction*
       5. Settlement Calculation in: All zones*
       6. Hammer Energy Ratio,                                    Ce = 1.25
       7. Borehole Diameter,                                          Cb= 1.15
       8. Sampling Method,                                            Cs= 1.2
       9. User request factor of safety (apply to CSR) ,   User= 1.3
          Plot two CSR (fs1=User, fs2=1)
       10. Use Curve Smoothing: Yes*
       * Recommended Options

       In-Situ Test Data:
       Depth   SPT     gamma   Fines
       ft              pcf     %
       ____________________________________
       0.00    14.00   115.00  0.00
       2.50    14.00   115.00  0.00
       5.00    15.00   115.00  0.00
       7.50    28.00   115.00  0.00
       10.00   28.00   110.00  0.00
       12.50   35.00   110.00  0.00
       15.00   35.00   110.00  0.00
       17.50   9.00    110.00  0.00
       20.00   15.00   110.00  0.00
       22.50   19.00   110.00  0.00
       25.00   19.00   130.00  0.00
       27.50   45.00   130.00  0.00
       28.00   45.00   125.00  NoLiq
       30.00   34.00   125.00  NoLiq
       ____________________________________

Output Results:
       Settlement of Saturated Sands=1.67 in.
       Settlement of Unsaturated Sands=0.08 in.
       Total Settlement of Saturated and Unsaturated Sands=1.75 in.
       Differential Settlement=0.875 to 1.155 in.

       Depth   CRRm    CSRfs   F.S.    S_sat.  S_dry   S_all
       ft                              in.     in.     in.
```

0.00	2.37	0.56	5.00	1.67	0.08	1.75
1.00	2.37	0.55	5.00	1.67	0.08	1.75
2.00	2.37	0.55	5.00	1.67	0.08	1.75
3.00	2.37	0.55	5.00	1.67	0.07	1.74
4.00	2.37	0.55	5.00	1.67	0.05	1.72
5.00	2.37	0.55	5.00	1.67	0.04	1.71
6.00	2.37	0.55	5.00	1.67	0.03	1.70
7.00	2.37	0.55	5.00	1.67	0.03	1.70
8.00	2.37	0.54	5.00	1.67	0.02	1.69
9.00	2.37	0.54	5.00	1.67	0.01	1.68
10.00	2.37	0.54	4.37	1.67	0.00	1.67
11.00	2.37	0.57	4.16	1.67	0.00	1.67
12.00	2.37	0.59	3.99	1.67	0.00	1.67
13.00	2.37	0.62	3.84	1.67	0.00	1.67
14.00	2.37	0.64	3.71	1.67	0.00	1.67
15.00	2.37	0.66	3.61	1.67	0.00	1.67
16.00	2.37	0.67	3.51	1.67	0.00	1.67
17.00	0.32	0.69	0.47*	1.62	0.00	1.62
18.00	0.22	0.71	0.31*	1.34	0.00	1.34
19.00	0.26	0.72	0.37*	1.06	0.00	1.06
20.00	0.32	0.73	0.44*	0.82	0.00	0.82
21.00	0.37	0.75	0.49*	0.61	0.00	0.61
22.00	0.43	0.76	0.57*	0.43	0.00	0.43
23.00	0.49	0.77	0.64*	0.30	0.00	0.30
24.00	0.46	0.78	0.60*	0.16	0.00	0.16
25.00	0.44	0.78	0.56*	0.01	0.00	0.01
26.00	2.37	0.79	3.00	0.00	0.00	0.00
27.00	2.37	0.79	2.98	0.00	0.00	0.00
28.00	2.37	0.80	2.97	0.00	0.00	0.00
29.00	2.00	0.80	5.00	0.00	0.00	0.00
30.00	2.00	0.81	5.00	0.00	0.00	0.00
31.00	2.00	0.81	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

```
**********************************************************************************************
                                LIQUEFACTION ANALYSIS CALCULATION DETAILS
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                                          www.civiltech.com
**********************************************************************************************
       Font: Courier New, Regular, Size 8 is recommended for this report.
       Licensed to ,  9/30/2015      9:18:09 AM

       Input File Name: D:\Liquefy5\5032 B-3.liq
       Title:  23480 Park Sorrento
       Subtitle:  5032

 Input Data:
       Surface Elev.=
       Hole No.=B-3
       Depth of Hole=31.50 ft
       Water Table during Earthquake= 10.00 ft
       Water Table during In-Situ Testing= 19.00 ft
       Max. Acceleration=0.66 g
       Earthquake Magnitude=7.02
       No-Liquefiable Soils:   CL, OL are Non-Liq. Soil
       1. SPT or BPT Calculation.
       2. Settlement Analysis Method: Ishihara / Yoshimine
       3. Fines Correction for Liquefaction: Stark/Olson et al.*
       4. Fine Correction for Settlement: During Liquefaction*
       5. Settlement Calculation in: All zones*
       6. Hammer Energy Ratio,                                    Ce = 1.25
       7. Borehole Diameter,                                          Cb= 1.15
       8. Sampling Method,                                          Cs= 1.2
       9. User request factor of safety (apply to CSR) ,   User= 1.3
          Plot two CSR (fs1=User, fs2=1)
       10. Average two input data between two Depths: Yes*
       * Recommended Options

       In-Situ Test Data:
       Depth   SPT     Gamma   Fines
       ft              pcf     %
       ____________________________________
       0.00    14.00   115.00  0.00
       2.50    14.00   115.00  0.00
       5.00    15.00   115.00  0.00
       7.50    28.00   115.00  0.00
       10.00   28.00   110.00  0.00
       12.50   35.00   110.00  0.00
       15.00   35.00   110.00  0.00
       17.50   9.00    110.00  0.00
       20.00   15.00   110.00  0.00
       22.50   19.00   110.00  0.00
       25.00   19.00   130.00  0.00
       27.50   45.00   130.00  0.00
       28.00   45.00   125.00  NoLiq
       30.00   34.00   125.00  NoLiq
       ____________________________________


 Output Results:
       Calculation segment, dz=0.050 ft
       User defined Print Interval, dp=1.00 ft

       Peak Ground Acceleration (PGA), a_max = 0.66g

       CSR Calculation:
       Depth   gamma   sigma   gamma'  sigma'   rd     mZ      a(z)    CSR     x fs1   =CSRfs
       ft      pcf     atm     pcf     atm             g       g
       ____________________________________________________________________________________
       0.00    115.00  0.000   115.00  0.000   1.00    0.000   0.657   0.43    1.30    0.56
       1.00    115.00  0.054   115.00  0.054   1.00    0.000   0.657   0.43    1.30    0.55
       2.00    115.00  0.109   115.00  0.109   1.00    0.000   0.657   0.43    1.30    0.55
       3.00    115.00  0.163   115.00  0.163   0.99    0.000   0.657   0.42    1.30    0.55
       4.00    115.00  0.217   115.00  0.217   0.99    0.000   0.657   0.42    1.30    0.55
```

5.00	115.00	0.272	115.00	0.272	0.99	0.000	0.657	0.42	1.30	0.55
6.00	115.00	0.326	115.00	0.326	0.99	0.000	0.657	0.42	1.30	0.55
7.00	115.00	0.380	115.00	0.380	0.98	0.000	0.657	0.42	1.30	0.55
8.00	114.00	0.435	114.00	0.435	0.98	0.000	0.657	0.42	1.30	0.54
9.00	112.00	0.488	112.00	0.488	0.98	0.000	0.657	0.42	1.30	0.54
10.00	110.00	0.541	47.60	0.541	0.98	0.000	0.657	0.42	1.30	0.54
11.00	110.00	0.593	47.60	0.563	0.97	0.000	0.657	0.44	1.30	0.57
12.00	110.00	0.645	47.60	0.586	0.97	0.000	0.657	0.46	1.30	0.59
13.00	110.00	0.696	47.60	0.608	0.97	0.000	0.657	0.47	1.30	0.62
14.00	110.00	0.748	47.60	0.631	0.97	0.000	0.657	0.49	1.30	0.64
15.00	110.00	0.800	47.60	0.653	0.97	0.000	0.657	0.51	1.30	0.66
16.00	110.00	0.852	47.60	0.676	0.96	0.000	0.657	0.52	1.30	0.67
17.00	110.00	0.904	47.60	0.698	0.96	0.000	0.657	0.53	1.30	0.69
18.00	110.00	0.956	47.60	0.720	0.96	0.000	0.657	0.54	1.30	0.71
19.00	110.00	1.008	47.60	0.743	0.96	0.000	0.657	0.55	1.30	0.72
20.00	110.00	1.060	47.60	0.765	0.95	0.000	0.657	0.56	1.30	0.73
21.00	110.00	1.112	47.60	0.788	0.95	0.000	0.657	0.57	1.30	0.75
22.00	110.00	1.164	47.60	0.810	0.95	0.000	0.657	0.58	1.30	0.76
23.00	114.00	1.217	51.60	0.833	0.95	0.000	0.657	0.59	1.30	0.77
24.00	122.00	1.272	59.60	0.860	0.94	0.000	0.657	0.60	1.30	0.78
25.00	130.00	1.332	67.60	0.890	0.94	0.000	0.657	0.60	1.30	0.78
26.00	130.00	1.393	67.60	0.921	0.94	0.000	0.657	0.61	1.30	0.79
27.00	130.00	1.455	67.60	0.953	0.94	0.000	0.657	0.61	1.30	0.79
28.00	125.00	1.516	62.60	0.985	0.93	0.000	0.657	0.61	1.30	0.80
29.00	125.00	1.575	62.60	1.014	0.93	0.000	0.657	0.62	1.30	0.80
30.00	125.00	1.634	62.60	1.044	0.93	0.000	0.657	0.62	1.30	0.81
31.00	125.00	1.693	62.60	1.074	0.92	0.000	0.657	0.62	1.30	0.81

CSR is based on water table at 10.00 during earthquake

CRR Calculation from SPT or BPT data:

Depth ft	SPT	Cebs	Cr	sigma' atm	Cn	(N1)60	Fines %	d(N1)60	(N1)60f	CRR7.5
0.00	14.00	1.73	0.75	0.000	1.70	30.79	0.00	0.00	30.79	2.00
1.00	14.00	1.73	0.75	0.054	1.70	30.79	0.00	0.00	30.79	2.00
2.00	14.00	1.73	0.75	0.109	1.70	30.79	0.00	0.00	30.79	2.00
3.00	14.20	1.73	0.75	0.163	1.70	31.23	0.00	0.00	31.23	2.00
4.00	14.60	1.73	0.75	0.217	1.70	32.11	0.00	0.00	32.11	2.00
5.00	15.00	1.73	0.75	0.272	1.70	32.99	0.00	0.00	32.99	2.00
6.00	20.20	1.73	0.75	0.326	1.70	44.43	0.00	0.00	44.43	2.00
7.00	25.40	1.73	0.75	0.380	1.62	53.28	0.00	0.00	53.28	2.00
8.00	28.00	1.73	0.75	0.435	1.52	54.95	0.00	0.00	54.95	2.00
9.00	28.00	1.73	0.85	0.488	1.43	58.77	0.00	0.00	58.77	2.00
10.00	28.00	1.73	0.85	0.541	1.36	55.84	0.00	0.00	55.84	2.00
11.00	30.80	1.73	0.85	0.593	1.30	58.67	0.00	0.00	58.67	2.00
12.00	33.60	1.73	0.85	0.645	1.25	61.37	0.00	0.00	61.37	2.00
13.00	35.00	1.73	0.85	0.696	1.20	61.49	0.00	0.00	61.49	2.00
14.00	35.00	1.73	0.85	0.748	1.16	59.32	0.00	0.00	59.32	2.00
15.00	35.00	1.73	0.95	0.800	1.12	64.11	0.00	0.00	64.11	2.00
16.00	24.60	1.73	0.95	0.852	1.08	43.66	0.00	0.00	43.66	2.00
17.00	14.20	1.73	0.95	0.904	1.05	24.47	0.00	0.00	24.47	0.27
18.00	10.20	1.73	0.95	0.956	1.02	17.09	0.00	0.00	17.09	0.18
19.00	12.60	1.73	0.95	1.008	1.00	20.56	0.00	0.00	20.56	0.22
20.00	15.00	1.73	0.95	1.032	0.98	24.19	0.00	0.00	24.19	0.27
21.00	16.60	1.73	0.95	1.055	0.97	26.49	0.00	0.00	26.49	0.31
22.00	18.20	1.73	0.95	1.077	0.96	28.73	0.00	0.00	28.73	0.36
23.00	19.00	1.73	0.95	1.100	0.95	29.68	0.00	0.00	29.68	0.41
24.00	19.00	1.73	0.95	1.126	0.94	29.34	0.00	0.00	29.34	0.39
25.00	19.00	1.73	0.95	1.156	0.93	28.95	0.00	0.00	28.95	0.37
26.00	29.40	1.73	0.95	1.188	0.92	44.20	0.00	0.00	44.20	2.00
27.00	39.80	1.73	0.95	1.220	0.91	59.04	0.00	0.00	59.04	2.00
28.00	45.00	1.73	1.00	1.252	0.89	69.38	NoLiq	7.20	76.58	2.00
29.00	39.50	1.73	1.00	1.281	0.88	60.20	NoLiq	7.20	67.40	2.00
30.00	34.00	1.73	1.00	1.311	0.87	51.23	NoLiq	7.20	58.43	2.00
31.00	34.00	1.73	1.00	1.340	0.86	50.66	NoLiq	7.20	57.86	2.00

CRR is based on water table at 19.00 during In-Situ Testing

Factor of Safety, - Earthquake Magnitude= 7.02:

Depth ft	sigC' atm	CRR7.5	x Ksig	=CRRv	x MSF	=CRRm	CSRfs	F.S.=CRRm/CSRfs

0.00	0.00	2.00	1.00	2.00	1.18	2.37	0.56	5.00
1.00	0.04	2.00	1.00	2.00	1.18	2.37	0.55	5.00
2.00	0.07	2.00	1.00	2.00	1.18	2.37	0.55	5.00
3.00	0.11	2.00	1.00	2.00	1.18	2.37	0.55	5.00
4.00	0.14	2.00	1.00	2.00	1.18	2.37	0.55	5.00
5.00	0.18	2.00	1.00	2.00	1.18	2.37	0.55	5.00
6.00	0.21	2.00	1.00	2.00	1.18	2.37	0.55	5.00
7.00	0.25	2.00	1.00	2.00	1.18	2.37	0.55	5.00
8.00	0.28	2.00	1.00	2.00	1.18	2.37	0.54	5.00
9.00	0.32	2.00	1.00	2.00	1.18	2.37	0.54	5.00
10.00	0.35	2.00	1.00	2.00	1.18	2.37	0.54	4.37
11.00	0.39	2.00	1.00	2.00	1.18	2.37	0.57	4.16
12.00	0.42	2.00	1.00	2.00	1.18	2.37	0.59	3.99
13.00	0.45	2.00	1.00	2.00	1.18	2.37	0.62	3.84
14.00	0.49	2.00	1.00	2.00	1.18	2.37	0.64	3.71
15.00	0.52	2.00	1.00	2.00	1.18	2.37	0.66	3.61
16.00	0.55	2.00	1.00	2.00	1.18	2.37	0.67	3.51
17.00	0.59	0.27	1.00	0.27	1.18	0.32	0.69	0.47 *
18.00	0.62	0.18	1.00	0.18	1.18	0.22	0.71	0.31 *
19.00	0.66	0.22	1.00	0.22	1.18	0.26	0.72	0.37 *
20.00	0.67	0.27	1.00	0.27	1.18	0.32	0.73	0.44 *
21.00	0.69	0.31	1.00	0.31	1.18	0.37	0.75	0.49 *
22.00	0.70	0.36	1.00	0.36	1.18	0.43	0.76	0.57 *
23.00	0.72	0.41	1.00	0.41	1.18	0.49	0.77	0.64 *
24.00	0.73	0.39	1.00	0.39	1.18	0.46	0.78	0.60 *
25.00	0.75	0.37	1.00	0.37	1.18	0.44	0.78	0.56 *
26.00	0.77	2.00	1.00	2.00	1.18	2.37	0.79	3.00
27.00	0.79	2.00	1.00	2.00	1.18	2.37	0.79	2.98
28.00	0.81	2.00	1.00	2.00	1.18	2.37	0.80	2.97
29.00	0.83	2.00	1.00	2.00	1.18	2.00	0.80	5.00 ^
30.00	0.85	2.00	1.00	2.00	1.18	2.00	0.81	5.00 ^
31.00	0.87	2.00	1.00	2.00	1.18	2.00	0.81	5.00 ^

* F.S.<1: Liquefaction Potential Zone. (If above water table: F.S.=5)
^ No-liquefiable Soils or above Water Table.
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

CPT convert to SPT for Settlement Analysis:
Fines Correction for Settlement Analysis:

Depth ft	Ic	qc/N60	qc1 atm	(N1)60	Fines %	d(N1)60	(N1)60s
0.00	-	-	-	30.79	0.00	0.00	30.79
1.00	-	-	-	30.79	0.00	0.00	30.79
2.00	-	-	-	30.79	0.00	0.00	30.79
3.00	-	-	-	31.23	0.00	0.00	31.23
4.00	-	-	-	32.11	0.00	0.00	32.11
5.00	-	-	-	32.99	0.00	0.00	32.99
6.00	-	-	-	44.43	0.00	0.00	44.43
7.00	-	-	-	53.28	0.00	0.00	53.28
8.00	-	-	-	54.95	0.00	0.00	54.95
9.00	-	-	-	58.77	0.00	0.00	58.77
10.00	-	-	-	55.84	0.00	0.00	55.84
11.00	-	-	-	58.67	0.00	0.00	58.67
12.00	-	-	-	61.37	0.00	0.00	61.37
13.00	-	-	-	61.49	0.00	0.00	61.49
14.00	-	-	-	59.32	0.00	0.00	59.32
15.00	-	-	-	64.11	0.00	0.00	64.11
16.00	-	-	-	43.66	0.00	0.00	43.66
17.00	-	-	-	24.47	0.00	0.00	24.47
18.00	-	-	-	17.09	0.00	0.00	17.09
19.00	-	-	-	20.56	0.00	0.00	20.56
20.00	-	-	-	24.19	0.00	0.00	24.19
21.00	-	-	-	26.49	0.00	0.00	26.49
22.00	-	-	-	28.73	0.00	0.00	28.73
23.00	-	-	-	29.68	0.00	0.00	29.68
24.00	-	-	-	29.34	0.00	0.00	29.34
25.00	-	-	-	28.95	0.00	0.00	28.95
26.00	-	-	-	44.20	0.00	0.00	44.20
27.00	-	-	-	59.04	0.00	0.00	59.04
28.00	-	-	-	76.58	NoLiq	0.00	76.58
29.00	-	-	-	67.40	NoLiq	0.00	67.40

30.00	-	-	-	58.43	NoLiq	0.00	58.43
31.00	-	-	-	57.86	NoLiq	0.00	57.86

(N1)60s has been fines corrected in liquefaction analysis, therefore d(N1)60=0.
Fines=NoLiq means the soils are not liquefiable.

Settlement of Saturated Sands:
Settlement Analysis Method: Ishihara / Yoshimine

Depth ft	CSRsf	/ MSF*	=CSRm	F.S.	Fines %	(N1)60s	Dr %	ec %	dsz in.	dsp in.	S in.
31.45	0.81	1.00	0.81	5.00	NoLiq	57.61	100.00	0.000	0.0E0	0.000	0.000
31.00	0.81	1.00	0.81	5.00	NoLiq	57.86	100.00	0.000	0.0E0	0.000	0.000
30.00	0.81	1.00	0.81	5.00	NoLiq	58.43	100.00	0.000	0.0E0	0.000	0.000
29.00	0.80	1.00	0.80	5.00	NoLiq	67.40	100.00	0.000	0.0E0	0.000	0.000
28.00	0.80	1.00	0.80	2.97	NoLiq	76.58	100.00	0.000	0.0E0	0.000	0.000
27.00	0.79	1.00	0.79	2.98	0.00	59.04	100.00	0.000	0.0E0	0.000	0.000
26.00	0.79	1.00	0.79	3.00	0.00	44.20	100.00	0.000	0.0E0	0.000	0.000
25.00	0.78	1.00	0.78	0.56	0.00	28.95	87.74	1.294	7.8E-3	0.014	0.014
24.00	0.78	1.00	0.78	0.60	0.00	29.34	88.58	1.197	7.2E-3	0.149	0.164
23.00	0.77	1.00	0.77	0.64	0.00	29.68	89.35	1.082	6.5E-3	0.137	0.300
22.00	0.76	1.00	0.76	0.57	0.00	28.73	87.27	1.308	7.8E-3	0.134	0.435
21.00	0.75	1.00	0.75	0.49	0.00	26.49	82.62	1.629	9.8E-3	0.179	0.614
20.00	0.73	1.00	0.73	0.44	0.00	24.19	78.19	1.827	1.1E-2	0.208	0.822
19.00	0.72	1.00	0.72	0.37	0.00	20.56	71.55	2.126	1.3E-2	0.238	1.060
18.00	0.71	1.00	0.71	0.31	0.00	17.09	65.25	2.485	1.5E-2	0.276	1.336
17.00	0.69	1.00	0.69	0.47	0.00	24.47	78.71	1.804	1.1E-2	0.286	1.622
16.00	0.67	1.00	0.67	3.51	0.00	43.66	100.00	0.000	0.0E0	0.048	1.670
15.00	0.66	1.00	0.66	3.61	0.00	64.11	100.00	0.000	0.0E0	0.000	1.670
14.00	0.64	1.00	0.64	3.71	0.00	59.32	100.00	0.000	0.0E0	0.000	1.670
13.00	0.62	1.00	0.62	3.84	0.00	61.49	100.00	0.000	0.0E0	0.000	1.670
12.00	0.59	1.00	0.59	3.99	0.00	61.37	100.00	0.000	0.0E0	0.000	1.670
11.00	0.57	1.00	0.57	4.16	0.00	58.67	100.00	0.000	0.0E0	0.000	1.670
10.00	0.54	1.00	0.54	4.37	0.00	55.84	100.00	0.000	0.0E0	0.000	1.670

Settlement of Saturated Sands=1.670 in.
qc1 and (N1)60 is after fines correction in liquefaction analysis
dsz is per each segment, dz=0.05 ft
dsp is per each print interval, dp=1.00 ft
S is cumulated settlement at this depth

Settlement of Unsaturated Sands:

Depth ft	sigma' atm	sigC' atm	(N1)60s	CSRsf	Gmax atm	g*Ge/Gm	g_eff	ec7.5 %	Cec	ec %	dsz in.	dsp in.	S in.
9.95	0.54	0.35	55.98	0.54	1010.24	2.9E-4	0.2275	0.0719	0.93	0.0672	8.07E-4	0.001	0.001
9.00	0.49	0.32	58.77	0.54	977.98	2.7E-4	0.1278	0.0404	0.93	0.0377	4.53E-4	0.011	0.012
8.00	0.43	0.28	54.95	0.54	902.48	2.6E-4	0.1002	0.0317	0.93	0.0296	3.55E-4	0.007	0.020
7.00	0.38	0.25	53.28	0.55	835.68	2.5E-4	0.0729	0.0231	0.93	0.0215	2.59E-4	0.006	0.025
6.00	0.33	0.21	44.43	0.55	728.27	2.5E-4	0.0680	0.0215	0.93	0.0201	2.41E-4	0.005	0.030
5.00	0.27	0.18	32.99	0.55	602.09	2.5E-4	0.0715	0.0348	0.93	0.0326	3.91E-4	0.006	0.036
4.00	0.22	0.14	32.11	0.55	533.70	2.2E-4	0.3246	0.1657	0.93	0.1548	1.86E-3	0.017	0.053
3.00	0.16	0.11	31.23	0.55	457.95	2.0E-4	0.0693	0.0370	0.93	0.0346	4.15E-4	0.017	0.070
2.00	0.11	0.07	30.79	0.55	372.15	1.6E-4	0.0335	0.0183	0.93	0.0171	2.05E-4	0.005	0.075
1.00	0.05	0.04	30.79	0.55	263.17	1.1E-4	0.0243	0.0133	0.93	0.0124	1.49E-4	0.003	0.078
0.00	0.00	0.00	30.79	0.56	3.57	1.6E-6	0.0010	0.0006	0.93	0.0005	6.23E-6	0.002	0.080

Settlement of Unsaturated Sands=0.080 in.

dsz is per each segment, dz=0.05 ft
dsp is per each print interval, dp=1.00 ft
S is cumulated settlement at this depth

Total Settlement of Saturated and Unsaturated Sands=1.750 in.
Differential Settlement=0.875 to 1.155 in.

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

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1 atm (atmosphere) = 1.0581 tsf(1 tsf = 1 ton/ft2 = 2 kip/ft2)
1 atm (atmosphere) = 101.325 kPa(1 kPa = 1 kN/m2 = 0.001 Mpa)

SPT	Field data from Standard Penetration Test (SPT)
BPT	Field data from Becker Penetration Test (BPT)
qc	Field data from Cone Penetration Test (CPT) [atm (tsf)]
fs	Friction from CPT testing [atm (tsf)]
Rf	Ratio of fs/qc (%)
gamma	Total unit weight of soil
gamma'	Effective unit weight of soil
Fines	Fines content [%]
D50	Mean grain size
Dr	Relative Density
sigma	Total vertical stress [atm]
sigma'	Effective vertical stress [atm]
sigC'	Effective confining pressure [atm]
rd	Acceleration reduction coefficient by Seed
a_max.	Peak Ground Acceleration (PGA) in ground surface
mZ	Linear acceleration reduction coefficient X depth
a_min.	Minimum acceleration under linear reduction, mZ
CRRv	CRR after overburden stress correction, CRRv=CRR7.5 * Ksig
CRR7.5	Cyclic resistance ratio (M=7.5)
Ksig	Overburden stress correction factor for CRR7.5
CRRm	After magnitude scaling correction CRRm=CRRv * MSF
MSF	Magnitude scaling factor from M=7.5 to user input M
CSR	Cyclic stress ratio induced by earthquake
CSRfs	CSRfs=CSR*fs1 (Default fs1=1)
fs1	First CSR curve in graphic defined in #9 of Advanced page
fs2	2nd CSR curve in graphic defined in #9 of Advanced page
F.S.	Calculated factor of safety against liquefaction F.S.=CRRm/CSRsf
Cebs	Energy Ratio, Borehole Dia., and Sampling Method Corrections
Cr	Rod Length Corrections
Cn	Overburden Pressure Correction
(N1)60	SPT after corrections, (N1)60=SPT * Cr * Cn * Cebs
d(N1)60	Fines correction of SPT
(N1)60f	(N1)60 after fines corrections, (N1)60f=(N1)60 + d(N1)60
Cq	Overburden stress correction factor
qc1	CPT after Overburden stress correction
dqc1	Fines correction of CPT
qc1f	CPT after Fines and Overburden correction, qc1f=qc1 + dqc1
qc1n	CPT after normalization in Robertson's method
Kc	Fine correction factor in Robertson's Method
qc1f	CPT after Fines correction in Robertson's Method
Ic	Soil type index in Suzuki's and Robertson's Methods
(N1)60s	(N1)60 after settlement fines corrections
CSRm	After magnitude scaling correction for Settlement calculation CSRm=CSRsf / MSF*
CSRfs	Cyclic stress ratio induced by earthquake with user inputed fs
MSF*	Scaling factor from CSR, MSF*=1, based on Item 2 of Page C.
ec	Volumetric strain for saturated sands
dz	Calculation segment, dz=0.050 ft
dsz	Settlement in each segment, dz
dp	User defined print interval
dsp	Settlement in each print interval, dp
Gmax	Shear Modulus at low strain
g_eff	gamma_eff, Effective shear Strain
g*Ge/Gm	gamma_eff * G_eff/G_max, Strain-modulus ratio
ec7.5	Volumetric Strain for magnitude=7.5
Cec	Magnitude correction factor for any magnitude
ec	Volumetric strain for unsaturated sands, ec=Cec * ec7.5
NoLiq	No-Liquefy Soils

References:

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1. NCEER Workshop on Evaluation of Liquefaction Resistance of Soils. Youd, T.L., and Idriss, I.M., eds., Technical Report NCEER 97-0022.
SP117. Southern California Earthquake Center. Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for
Analyzing and Mitigating Liquefaction in California. University of Southern California. March 1999.
2. RECENT ADVANCES IN SOIL LIQUEFACTION ENGINEERING AND SEISMIC SITE RESPONSE EVALUATION, Paper No. SPL-2, PROCEEDINGS: Fourth
International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, San Diego, CA, March 2001.
3. RECENT ADVANCES IN SOIL LIQUEFACTION ENGINEERING: A UNIFIED AND CONSISTENT FRAMEWORK, Earthquake Engineering Research Center,
Report No. EERC 2003-06 by R.B Seed and etc. April 2003.

Note: Print Interval you selected does not show complete results. To get complete results, you should select 'Segment' in Print Interval (Item 12, Page C).

APPENDIX IV

REFERENCES

1. Compaction Report by LT Evans covering the subject site and dated July 25, 1973.
2. Report by LT Evans covering the subject site and dated March 1, 1973.
3. Reports by Geolabs, Inc. covering the subject site and dated June 9, 1972 and November 13, 1972.
4. Abramson, Lee W., et. al., Slope Stability and Stabilization Methods (Wiley & Sons, New York: 1996).
5. Bowen, Robert, Grouting in Engineering Practice - 2nd Edition (Applied Science Publishers, Ltd., New York: 1981).
6. Bowles, Joseph, E., Foundation Analysis and Design (McGraw-Hill, New York: 1988).
7. California Department of Conservation, Division of Mines and Geology, 1998, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada.
8. California Department of Conservation, Division of Mines and Geology, 1999, State of California Seismic Hazard Zones Map of the Calabasas Quadrangle.
9. California Department of Conservation, Division of Mines and Geology, 1998, Seismic Hazard Zone Report for the Calabasas 7.5 Minute Quadrangle, Los Angeles County, California. Seismic Hazard Zone Report 023.
10. City of Los Angeles, 1960 (revised 1964) Preliminary Geologic and Topographic Maps of the Santa Monica Mountains, sheet 18.
11. Lamar, D. L., 1991, Geology of the Elysian Park-Repetto Hills Area, Los Angeles County California: California Division of mines and geology, Special Report 101.
12. Hoots, H. W., 1930, Geology of the eastern part of the Santa Monica Mountains, Los Angeles County, California: U. S. Geological Survey, Professional Paper 165-C.
13. Huang, Yang H., Stability Analysis of Earth Slopes (Van Nostrand Reinhold, New York: 1983).
14. Monahan, Edward J., PE, Construction of and on Compacted Fills (Wiley & Sons, New York: 1986).
15. Naval Facilities Engineering Command Foundations and Earth Structures - Design Manual 7.02 (Naval Publications and Forms Center, Philadelphia: 1986).
16. Poulos, H. G., and Davis, E. H., Pile Foundation Analysis and Design (Wiley & Sons, New York: 1980).
17. Taylor, Donald W., Fundamentals of Soil Mechanics (Wiley & Sons, New York: 1948).
18. Terzaghi, Karl, Peck, Ralph B., Mesri, Gholamreza, Soil Mechanics in Engineering Practice (Wiley & Sons, New York: 1996).

APPENDIX F
GHG Worksheets

Raznick Mixed Use
IS/MND
Appendix F, GHG Worksheets

F.1 Construction Emissions

- Construction Emissions Model Inputs
- Construction: CalEEMod Output (Annual)

F.2 Operational Emissions

- Operations: CalEEMod Output (Annual) - Existing
- Operations: CalEEMod Output (Annual) - Project

Appendix F.1
Construction Emissions

- Construction Emissions Model Inputs
- Construction: CalEEMod Output (Annual)

23480 Park Sorrento last update: 2/2/2017
Air Quality and Greenhouse Gas Assessment

CalEEMod Land Use Inputs

Land Use	CalEEMod Land Use Type	Units [a]			Res. Pop.
Existing Uses					
Commercial Building	General Office		13,180	sf	
Commercial Building	General Office		13,180	sf	
Parking lot	Parking Lot		17,000	sf	
Project					
Senior Apartment Living	**Mid-rise Apartment**	**42 DU**	**43,000**	**sf**	119
Lobby 1					
Lobby 2					
Mail Room					
Office					
Recreation Room					
Plan A		*6 DU*			
Plan B		*6 DU*			
Plan C		*6 DU*			
Plan C - Alt		*3 DU*			
Plan D		*3 DU*			
Plan E		*3 DU*			
Plan F		*3 DU*			
Plan G		*3 DU*			
Plan H		*9 DU*			
Commercial Building/Bank			1,620	sf	
Ground floor parking garage	Unenclosed Parking with Elevator	38 spaces	15,200	sf	
Outdoor Parking	Parking lot	32 spaces	12,800	sf	
Lot Area		2.00 acres	-	sf	

Notes:

a. Square footage values may be rounded up to provide a conservative analysis.

Sources: Atlas Capital Group, Johnson Fain, May 2016; ESA PCR, 2016

1680

Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

CalEEMod Construction Phase	Start Date	End Date	No. Work Days	Site Prep/ Demo (CY)	Truck Capacity (CY)	Truck Total One-Way Trips	Truck Daily One-Way Trips	Soil Export [a] (CY)	Soil Import (CY)	Soil Haul Truck Capacity (CY)	Soil Haul Truck Total One-Way Trips	Soil Haul Truck Daily One-Way Trips	Concrete Mat Volume [a] (CY)	Concrete Truck Capacity (CY)	Concrete Truck Total One-Way Trips	Concrete Truck Daily One-Way Trips	Vendor One-Way Trips/Max Day [b]	Worker One-Way Trips/Max Day [c]
Project																		
Demolition	3/1/2018	3/9/2018	7	1,200	20	120	5										10	90
Site Preparation	3/12/2018	3/14/2018	3															100
Grading/Excavation	3/15/2018	3/23/2018	7					1,775	-	10	355	51					10	60
Drainage/Utilities/Sub-grade	3/26/2018	3/30/2018	5															150
Building Construction	4/2/2018	1/4/2019	200										13,600	9	3,023	15		
Architectural Coating	1/7/2019	2/1/2019	20															800
Paving	2/4/2019	2/22/2019	15															90
Other: Final Pickups	2/25/2019	3/8/2019	10															400

Notes:

a. Soil export quantities and foundation concrete quantities provided by Atlas Capital Group, Johnson Fain, May 2016.

b. Vendor trips associated with Site Preparation/Demo, Mass Grading, and Drainage/Utilities/Trenchin represent water trucks. Vendor trips associated with the Building Construction phase and are based on CalEEMod assumptions.

c. Worker trips are provided by Atlas Capital Group, Johnson Fain, May 2016.

Sources: Atlas Capital Group, Johnson Fain, May 2016; ESA PCR, 2016

23480 Park Sorrento last updated: 2/10/2017
Air Quality and Greenhouse Gas Assessment

Off-Road Heavy-Duty Construction Equipment

Construction Phase	Heavy-Duty Equipment	No. of Heavy-Duty Equipment	Hours of Operation/Day Per Equipment	Hours of Operation/Week Per Equipment	Emissions Tier Rating [a]
Demolition	Air Compressors	1	8	40	
	Crawler Tractors	1	8	40	
	Haul Trucks	8	8	40	
	Rubber Tired Loaders	1	8	40	
	Skid Steer Loaders	1	8	40	
	Tractors/Loaders/Backhoes	1	8	40	
Site Preparation	Crawler Tractors	1	8	40	
	Haul Trucks	1	8	40	
	Skid Steer Loaders	1	8	40	
	Rubber Tired Loaders	1	8	40	
Grading/Excavation	Backhoes	1	8	40	
	Compactors	1	8	40	
	Crawler Tractors	1	8	40	
	Loaders	1	8	40	
	Rubber Tired Loaders	1	8	40	
Drainage/Utilities/Sub-grade	Backhoes	1	8	40	
	Compactors	1	8	40	
1	Excavator	1	8	40	
	Skid Steer Loaders	1	8	40	
	Tractors	1	8	40	
	Trenchers	1	8	40	
Building Construction	Air Compressors	1	8	40	
	Backhoes	1	8	40	
	Cement/Mortar Mixers	2	8	40	
	Concrete/Industrial Saws	2	8	40	
	Cranes	1	8	40	
	Forklifts	1	8	40	
	Pumps	1	8	40	
	Skid Steer Loaders	1	8	40	
	Tractors	1	8	40	
Architectural Coating	Air Compressors	1	6	30	
Paving	Concrete/Industrial Saws	1	8	40	
	Compactors	1	8	40	
	Paving Equipment	1	8	40	
	Rollers	1	8	40	
	Skid Steer Loaders	1	8	40	
	Sweepers/Scrubbers	1	8	40	
	Tractors	1	8	40	
Other: Final Pickups	Forklifts	1	7	40	

23480 Park Sorrento - Construction

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	1.62	1000sqft	0.05	1,620.00	0
Parking Lot	32.00	Space	0.29	12,800.00	0
Unenclosed Parking with Elevator	38.00	Space	0.34	15,200.00	0
Retirement Community	42.00	Dwelling Unit	1.32	42,000.00	120

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage for commercial and residential are proportional to lot size.

Construction Phase - Client given construction schedule

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Off-road Equipment - Client given construction equipment.

Trips and VMT - Client given haul truck trips.

Demolition -

Grading - Client given material movement and acreage

Construction Off-road Equipment Mitigation -

Off-road Equipment - Client given equipment list

Off-road Equipment - Client given equipment list.

Vehicle Trips - Based on traffic study by Associated Transportation Engineers, 2016.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblGrading	AcresOfGrading	1.00	3.00
tblGrading	MaterialExported	0.00	1,775.00
tblLandUse	LotAcreage	0.04	0.05
tblLandUse	LotAcreage	8.40	1.32
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders

tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripNumber	166.00	120.00
tblTripsAndVMT	HaulingTripNumber	222.00	64.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblVehicleTrips	ST_TR	86.32	150.00
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	SU_TR	31.90	150.00
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	WD_TR	148.15	150.00
tblVehicleTrips	WD_TR	2.40	3.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.3858	3.3546	2.7138	4.9800e-003	0.0752	0.1970	0.2722	0.0176	0.1894	0.2071	0.0000	439.7672	439.7672	0.0709	0.0000	441.5387
2019	0.2044	0.4424	0.4984	1.1700e-003	0.0563	0.0225	0.0788	0.0151	0.0211	0.0362	0.0000	106.3703	106.3703	0.0116	0.0000	106.6608
Maximum	**0.3858**	**3.3546**	**2.7138**	**4.9800e-003**	**0.0752**	**0.1970**	**0.2722**	**0.0176**	**0.1894**	**0.2071**	**0.0000**	**439.7672**	**439.7672**	**0.0709**	**0.0000**	**441.5387**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.3858	3.3546	2.7138	4.9800e-003	0.0625	0.1970	0.2596	0.0158	0.1894	0.2052	0.0000	439.7668	439.7668	0.0709	0.0000	441.5383
2019	0.2044	0.4424	0.4984	1.1700e-003	0.0563	0.0225	0.0788	0.0151	0.0211	0.0362	0.0000	106.3703	106.3703	0.0116	0.0000	106.6608
Maximum	**0.3858**	**3.3546**	**2.7138**	**4.9800e-003**	**0.0625**	**0.1970**	**0.2596**	**0.0158**	**0.1894**	**0.2052**	**0.0000**	**439.7668**	**439.7668**	**0.0709**	**0.0000**	**441.5383**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**9.62**	**0.00**	**3.60**	**5.66**	**0.00**	**0.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-1-2018**	**5-31-2018**	1.0159	1.0159
2	**6-1-2018**	**8-31-2018**	1.1587	1.1587
3	**9-1-2018**	**11-30-2018**	1.1470	1.1470
4	**12-1-2018**	**2-28-2019**	0.5051	0.5051
		Highest	1.1587	1.1587

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	3/30/2018	5	2	
3	Grading	Grading	3/31/2018	4/5/2018	5	4	
4	Building Construction	Building Construction	4/6/2018	1/10/2019	5	200	
5	Final Pickups	Building Construction	1/11/2019	10/17/2019	5	200	
6	Paving	Paving	10/18/2019	10/31/2019	5	10	
7	Architectural Coating	Architectural Coating	11/1/2019	11/14/2019	5	10	
8	Drainage/Utilities/Sub-grade	Trenching	3/26/2018	3/30/2018	5	5	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.63

Residential Indoor: 85,050; Residential Outdoor: 28,350; Non-Residential Indoor: 2,430; Non-Residential Outdoor: 810; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Final Pickups	Cranes	0	8.00	231	0.29
Final Pickups	Forklifts	1	7.00	89	0.20
Final Pickups	Generator Sets	0	8.00	84	0.74
Final Pickups	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Final Pickups	Welders	0	8.00	46	0.45
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Rubber Tired Loaders	1	8.00	203	0.36

Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Air Compressors	1	8.00	78	0.48
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Paving	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Skid Steer Loaders	1	8.00	65	0.37
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Sub-grade	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drainage/Utilities/Sub-grade	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Sub-grade	Excavators	1	8.00	158	0.38
Drainage/Utilities/Sub-grade	Skid Steer Loaders	1	8.00	65	0.37
Drainage/Utilities/Sub-grade	Trenchers	1	8.00	78	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	10.00	0.00	64.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	43.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Final Pickups	1	43.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Sub-grade	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0180	0.0000	0.0180	2.7200e-003	0.0000	2.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0183	0.2035	0.1059	2.3000e-004		9.4800e-003	9.4800e-003		8.8900e-003	8.8900e-003	0.0000	21.0039	21.0039	5.8000e-003	0.0000	21.1489
Total	**0.0183**	**0.2035**	**0.1059**	**2.3000e-004**	**0.0180**	**9.4800e-003**	**0.0275**	**2.7200e-003**	**8.8900e-003**	**0.0116**	**0.0000**	**21.0039**	**21.0039**	**5.8000e-003**	**0.0000**	**21.1489**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.5000e-004	0.0195	3.7800e-003	5.0000e-005	1.0300e-003	7.0000e-005	1.1000e-003	2.8000e-004	7.0000e-005	3.5000e-004	0.0000	4.6554	4.6554	3.4000e-004	0.0000	4.6640
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.7000e-004	6.0800e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3695	1.3695	5.0000e-005	0.0000	1.3707
Total	**1.2400e-003**	**0.0201**	**9.8600e-003**	**7.0000e-005**	**2.4600e-003**	**8.0000e-005**	**2.5400e-003**	**6.6000e-004**	**8.0000e-005**	**7.4000e-004**	**0.0000**	**6.0250**	**6.0250**	**3.9000e-004**	**0.0000**	**6.0347**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0100e-003	0.0000	7.0100e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0183	0.2035	0.1059	2.3000e-004		9.4800e-003	9.4800e-003		8.8900e-003	8.8900e-003	0.0000	21.0038	21.0038	5.8000e-003	0.0000	21.1489
Total	**0.0183**	**0.2035**	**0.1059**	**2.3000e-004**	**7.0100e-003**	**9.4800e-003**	**0.0165**	**1.0600e-003**	**8.8900e-003**	**9.9500e-003**	**0.0000**	**21.0038**	**21.0038**	**5.8000e-003**	**0.0000**	**21.1489**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.5000e-004	0.0195	3.7800e-003	5.0000e-005	1.0300e-003	7.0000e-005	1.1000e-003	2.8000e-004	7.0000e-005	3.5000e-004	0.0000	4.6554	4.6554	3.4000e-004	0.0000	4.6640
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.7000e-004	6.0800e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3695	1.3695	5.0000e-005	0.0000	1.3707
Total	**1.2400e-003**	**0.0201**	**9.8600e-003**	**7.0000e-005**	**2.4600e-003**	**8.0000e-005**	**2.5400e-003**	**6.6000e-004**	**8.0000e-005**	**7.4000e-004**	**0.0000**	**6.0250**	**6.0250**	**3.9000e-004**	**0.0000**	**6.0347**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1600e-003	0.0150	5.7800e-003	2.0000e-005		5.6000e-004	5.6000e-004		5.2000e-004	5.2000e-004	0.0000	1.4762	1.4762	4.6000e-004	0.0000	1.4877
Total	**1.1600e-003**	**0.0150**	**5.7800e-003**	**2.0000e-005**	**1.5900e-003**	**5.6000e-004**	**2.1500e-003**	**1.7000e-004**	**5.2000e-004**	**6.9000e-004**	**0.0000**	**1.4762**	**1.4762**	**4.6000e-004**	**0.0000**	**1.4877**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0843	0.0843	0.0000	0.0000	0.0844
Total	**4.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0843**	**0.0843**	**0.0000**	**0.0000**	**0.0844**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1600e-003	0.0150	5.7800e-003	2.0000e-005		5.6000e-004	5.6000e-004		5.2000e-004	5.2000e-004	0.0000	1.4762	1.4762	4.6000e-004	0.0000	1.4877
Total	**1.1600e-003**	**0.0150**	**5.7800e-003**	**2.0000e-005**	**6.2000e-004**	**5.6000e-004**	**1.1800e-003**	**7.0000e-005**	**5.2000e-004**	**5.9000e-004**	**0.0000**	**1.4762**	**1.4762**	**4.6000e-004**	**0.0000**	**1.4877**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0843	0.0843	0.0000	0.0000	0.0844
Total	**4.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0843**	**0.0843**	**0.0000**	**0.0000**	**0.0844**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1600e-003	0.0000	1.1600e-003	1.3000e-004	0.0000	1.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0387	0.0186	4.0000e-005		1.7700e-003	1.7700e-003		1.6300e-003	1.6300e-003	0.0000	3.7743	3.7743	1.1600e-003	0.0000	3.8034
Total	**3.2900e-003**	**0.0387**	**0.0186**	**4.0000e-005**	**1.1600e-003**	**1.7700e-003**	**2.9300e-003**	**1.3000e-004**	**1.6300e-003**	**1.7600e-003**	**0.0000**	**3.7743**	**3.7743**	**1.1600e-003**	**0.0000**	**3.8034**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0104	2.0100e-003	3.0000e-005	5.5000e-004	4.0000e-005	5.9000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	2.4829	2.4829	1.8000e-004	0.0000	2.4875
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	9.0000e-005	9.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2107	0.2107	1.0000e-005	0.0000	0.2109
Total	**4.0000e-004**	**0.0105**	**2.9500e-003**	**3.0000e-005**	**7.7000e-004**	**4.0000e-005**	**8.1000e-004**	**2.1000e-004**	**4.0000e-005**	**2.5000e-004**	**0.0000**	**2.6936**	**2.6936**	**1.9000e-004**	**0.0000**	**2.6983**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.5000e-004	0.0000	4.5000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0387	0.0186	4.0000e-005		1.7700e-003	1.7700e-003		1.6300e-003	1.6300e-003	0.0000	3.7743	3.7743	1.1600e-003	0.0000	3.8034
Total	**3.2900e-003**	**0.0387**	**0.0186**	**4.0000e-005**	**4.5000e-004**	**1.7700e-003**	**2.2200e-003**	**5.0000e-005**	**1.6300e-003**	**1.6800e-003**	**0.0000**	**3.7743**	**3.7743**	**1.1600e-003**	**0.0000**	**3.8034**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0104	2.0100e-003	3.0000e-005	5.5000e-004	4.0000e-005	5.9000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	2.4829	2.4829	1.8000e-004	0.0000	2.4875
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	9.0000e-005	9.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2107	0.2107	1.0000e-005	0.0000	0.2109
Total	**4.0000e-004**	**0.0105**	**2.9500e-003**	**3.0000e-005**	**7.7000e-004**	**4.0000e-005**	**8.1000e-004**	**2.1000e-004**	**4.0000e-005**	**2.5000e-004**	**0.0000**	**2.6936**	**2.6936**	**1.9000e-004**	**0.0000**	**2.6983**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3320	2.9067	2.3170	3.8400e-003		0.1817	0.1817		0.1751	0.1751	0.0000	335.4382	335.4382	0.0586	0.0000	336.9032
Total	**0.3320**	**2.9067**	**2.3170**	**3.8400e-003**		**0.1817**	**0.1817**		**0.1751**	**0.1751**	**0.0000**	**335.4382**	**335.4382**	**0.0586**	**0.0000**	**336.9032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7800e-003	0.1072	0.0281	2.2000e-004	5.4400e-003	7.7000e-004	6.2200e-003	1.5700e-003	7.4000e-004	2.3100e-003	0.0000	21.4697	21.4697	1.5500e-003	0.0000	21.5083
Worker	0.0219	0.0180	0.1930	4.8000e-004	0.0453	3.7000e-004	0.0457	0.0120	3.4000e-004	0.0124	0.0000	43.4880	43.4880	1.4900e-003	0.0000	43.5253
Total	**0.0257**	**0.1252**	**0.2211**	**7.0000e-004**	**0.0507**	**1.1400e-003**	**0.0519**	**0.0136**	**1.0800e-003**	**0.0147**	**0.0000**	**64.9577**	**64.9577**	**3.0400e-003**	**0.0000**	**65.0336**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3320	2.9067	2.3170	3.8400e-003		0.1817	0.1817		0.1751	0.1751	0.0000	335.4378	335.4378	0.0586	0.0000	336.9028
Total	**0.3320**	**2.9067**	**2.3170**	**3.8400e-003**		**0.1817**	**0.1817**		**0.1751**	**0.1751**	**0.0000**	**335.4378**	**335.4378**	**0.0586**	**0.0000**	**336.9028**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7800e-003	0.1072	0.0281	2.2000e-004	5.4400e-003	7.7000e-004	6.2200e-003	1.5700e-003	7.4000e-004	2.3100e-003	0.0000	21.4697	21.4697	1.5500e-003	0.0000	21.5083
Worker	0.0219	0.0180	0.1930	4.8000e-004	0.0453	3.7000e-004	0.0457	0.0120	3.4000e-004	0.0124	0.0000	43.4880	43.4880	1.4900e-003	0.0000	43.5253
Total	**0.0257**	**0.1252**	**0.2211**	**7.0000e-004**	**0.0507**	**1.1400e-003**	**0.0519**	**0.0136**	**1.0800e-003**	**0.0147**	**0.0000**	**64.9577**	**64.9577**	**3.0400e-003**	**0.0000**	**65.0336**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1097	0.0949	1.6000e-004		6.5000e-003	6.5000e-003		6.2700e-003	6.2700e-003	0.0000	13.8838	13.8838	2.3800e-003	0.0000	13.9432
Total	**0.0123**	**0.1097**	**0.0949**	**1.6000e-004**		**6.5000e-003**	**6.5000e-003**		**6.2700e-003**	**6.2700e-003**	**0.0000**	**13.8838**	**13.8838**	**2.3800e-003**	**0.0000**	**13.9432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4000e-004	4.2200e-003	1.0700e-003	1.0000e-005	2.3000e-004	3.0000e-005	2.5000e-004	7.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.8864	0.8864	6.0000e-005	0.0000	0.8880
Worker	8.3000e-004	6.6000e-004	7.1800e-003	2.0000e-005	1.8900e-003	2.0000e-005	1.9000e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.7548	1.7548	6.0000e-005	0.0000	1.7562
Total	**9.7000e-004**	**4.8800e-003**	**8.2500e-003**	**3.0000e-005**	**2.1200e-003**	**5.0000e-005**	**2.1500e-003**	**5.7000e-004**	**4.0000e-005**	**6.1000e-004**	**0.0000**	**2.6412**	**2.6412**	**1.2000e-004**	**0.0000**	**2.6442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1097	0.0949	1.6000e-004		6.5000e-003	6.5000e-003		6.2700e-003	6.2700e-003	0.0000	13.8838	13.8838	2.3800e-003	0.0000	13.9432
Total	**0.0123**	**0.1097**	**0.0949**	**1.6000e-004**		**6.5000e-003**	**6.5000e-003**		**6.2700e-003**	**6.2700e-003**	**0.0000**	**13.8838**	**13.8838**	**2.3800e-003**	**0.0000**	**13.9432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4000e-004	4.2200e-003	1.0700e-003	1.0000e-005	2.3000e-004	3.0000e-005	2.5000e-004	7.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.8864	0.8864	6.0000e-005	0.0000	0.8880
Worker	8.3000e-004	6.6000e-004	7.1800e-003	2.0000e-005	1.8900e-003	2.0000e-005	1.9000e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.7548	1.7548	6.0000e-005	0.0000	1.7562
Total	**9.7000e-004**	**4.8800e-003**	**8.2500e-003**	**3.0000e-005**	**2.1200e-003**	**5.0000e-005**	**2.1500e-003**	**5.7000e-004**	**4.0000e-005**	**6.1000e-004**	**0.0000**	**2.6412**	**2.6412**	**1.2000e-004**	**0.0000**	**2.6442**

3.6 Final Pickups - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0140	0.1250	0.1045	1.3000e-004		9.6800e-003	9.6800e-003		8.9100e-003	8.9100e-003	0.0000	12.0116	12.0116	3.8000e-003	0.0000	12.1066
Total	**0.0140**	**0.1250**	**0.1045**	**1.3000e-004**		**9.6800e-003**	**9.6800e-003**		**8.9100e-003**	**8.9100e-003**	**0.0000**	**12.0116**	**12.0116**	**3.8000e-003**	**0.0000**	**12.1066**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5700e-003	0.1054	0.0269	2.3000e-004	5.6700e-003	6.9000e-004	6.3600e-003	1.6400e-003	6.6000e-004	2.3000e-003	0.0000	22.1602	22.1602	1.5600e-003	0.0000	22.1990
Worker	0.0207	0.0165	0.1796	4.9000e-004	0.0472	3.8000e-004	0.0476	0.0125	3.5000e-004	0.0129	0.0000	43.8707	43.8707	1.3800e-003	0.0000	43.9051
Total	**0.0243**	**0.1219**	**0.2064**	**7.2000e-004**	**0.0529**	**1.0700e-003**	**0.0539**	**0.0142**	**1.0100e-003**	**0.0152**	**0.0000**	**66.0309**	**66.0309**	**2.9400e-003**	**0.0000**	**66.1042**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0140	0.1250	0.1045	1.3000e-004		9.6800e-003	9.6800e-003		8.9100e-003	8.9100e-003	0.0000	12.0116	12.0116	3.8000e-003	0.0000	12.1066
Total	**0.0140**	**0.1250**	**0.1045**	**1.3000e-004**		**9.6800e-003**	**9.6800e-003**		**8.9100e-003**	**8.9100e-003**	**0.0000**	**12.0116**	**12.0116**	**3.8000e-003**	**0.0000**	**12.1066**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5700e-003	0.1054	0.0269	2.3000e-004	5.6700e-003	6.9000e-004	6.3600e-003	1.6400e-003	6.6000e-004	2.3000e-003	0.0000	22.1602	22.1602	1.5600e-003	0.0000	22.1990
Worker	0.0207	0.0165	0.1796	4.9000e-004	0.0472	3.8000e-004	0.0476	0.0125	3.5000e-004	0.0129	0.0000	43.8707	43.8707	1.3800e-003	0.0000	43.9051
Total	**0.0243**	**0.1219**	**0.2064**	**7.2000e-004**	**0.0529**	**1.0700e-003**	**0.0539**	**0.0142**	**1.0100e-003**	**0.0152**	**0.0000**	**66.0309**	**66.0309**	**2.9400e-003**	**0.0000**	**66.1042**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7100e-003	0.0713	0.0700	1.1000e-004		4.5300e-003	4.5300e-003		4.2600e-003	4.2600e-003	0.0000	9.3019	9.3019	2.2500e-003	0.0000	9.3581
Paving	3.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.0900e-003**	**0.0713**	**0.0700**	**1.1000e-004**		**4.5300e-003**	**4.5300e-003**		**4.2600e-003**	**4.2600e-003**	**0.0000**	**9.3019**	**9.3019**	**2.2500e-003**	**0.0000**	**9.3581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.9000e-004	3.1300e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7652	0.7652	2.0000e-005	0.0000	0.7658
Total	**3.6000e-004**	**2.9000e-004**	**3.1300e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7652**	**0.7652**	**2.0000e-005**	**0.0000**	**0.7658**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7100e-003	0.0713	0.0700	1.1000e-004		4.5300e-003	4.5300e-003		4.2600e-003	4.2600e-003	0.0000	9.3019	9.3019	2.2500e-003	0.0000	9.3581
Paving	3.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.0900e-003**	**0.0713**	**0.0700**	**1.1000e-004**		**4.5300e-003**	**4.5300e-003**		**4.2600e-003**	**4.2600e-003**	**0.0000**	**9.3019**	**9.3019**	**2.2500e-003**	**0.0000**	**9.3581**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.9000e-004	3.1300e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7652	0.7652	2.0000e-005	0.0000	0.7658
Total	**3.6000e-004**	**2.9000e-004**	**3.1300e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7652**	**0.7652**	**2.0000e-005**	**0.0000**	**0.7658**

3.8 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1428					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1800e-003	9.2100e-003	1.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	1.2766	1.2766	1.1000e-004	0.0000	1.2793
Total	**0.1441**	**9.1800e-003**	**9.2100e-003**	**1.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.1000e-004**	**0.0000**	**1.2793**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.8800e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4591	0.4591	1.0000e-005	0.0000	0.4595
Total	**2.2000e-004**	**1.7000e-004**	**1.8800e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4591**	**0.4591**	**1.0000e-005**	**0.0000**	**0.4595**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1428					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1800e-003	9.2100e-003	1.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	1.2766	1.2766	1.1000e-004	0.0000	1.2793
Total	**0.1441**	**9.1800e-003**	**9.2100e-003**	**1.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.1000e-004**	**0.0000**	**1.2793**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.8800e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4591	0.4591	1.0000e-005	0.0000	0.4595
Total	**2.2000e-004**	**1.7000e-004**	**1.8800e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4591**	**0.4591**	**1.0000e-005**	**0.0000**	**0.4595**

3.9 Drainage/Utilities/Sub-grade - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5200e-003	0.0348	0.0305	4.0000e-005		2.2500e-003	2.2500e-003		2.0800e-003	2.0800e-003	0.0000	3.9191	3.9191	1.2000e-003	0.0000	3.9492
Total	**3.5200e-003**	**0.0348**	**0.0305**	**4.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.0800e-003**	**2.0800e-003**	**0.0000**	**3.9191**	**3.9191**	**1.2000e-003**	**0.0000**	**3.9492**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.6000e-004	1.7500e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3951	0.3951	1.0000e-005	0.0000	0.3954
Total	**2.0000e-004**	**1.6000e-004**	**1.7500e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3951**	**0.3951**	**1.0000e-005**	**0.0000**	**0.3954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5200e-003	0.0348	0.0305	4.0000e-005		2.2500e-003	2.2500e-003		2.0800e-003	2.0800e-003	0.0000	3.9191	3.9191	1.2000e-003	0.0000	3.9492
Total	**3.5200e-003**	**0.0348**	**0.0305**	**4.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.0800e-003**	**2.0800e-003**	**0.0000**	**3.9191**	**3.9191**	**1.2000e-003**	**0.0000**	**3.9492**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.6000e-004	1.7500e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3951	0.3951	1.0000e-005	0.0000	0.3954
Total	**2.0000e-004**	**1.6000e-004**	**1.7500e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3951**	**0.3951**	**1.0000e-005**	**0.0000**	**0.3954**

Appendix F.2
Operational Emissions

- Operations : CalEEMod Output (Annual)- Existing
- Operations : CalEEMod Output (Annual)- Project

23480 Park Sorrento - Existing Operational

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	13.18	1000sqft	0.30	13,180.00	0
General Office Building	13.18	1000sqft	0.30	13,180.00	0
Parking Lot	17.00	1000sqft	0.39	17,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.88	0.88
tblVehicleTrips	ST_TR	2.46	11.03
tblVehicleTrips	SU_TR	1.05	11.03

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1089	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	1.5400e-003	0.0140	0.0118	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	157.5525	157.5525	6.1700e-003	1.4900e-003	158.1522
Mobile	0.2338	1.1968	3.1698	9.3200e-003	0.4085	0.0113	0.4199	0.1163	0.0107	0.1270	0.0000	857.7327	857.7327	0.0486	0.0000	858.9463
Waste						0.0000	0.0000		0.0000	0.0000	4.9753	0.0000	4.9753	0.2940	0.0000	12.3261
Water						0.0000	0.0000		0.0000	0.0000	1.4864	29.6020	31.0883	0.1539	3.8600e-003	36.0850
Total	**0.3442**	**1.2108**	**3.1821**	**9.4000e-003**	**0.4085**	**0.0124**	**0.4209**	**0.1163**	**0.0117**	**0.1281**	**6.4617**	**1,044.8882**	**1,051.3499**	**0.5026**	**5.3500e-003**	**1,065.5108**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1089	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	1.5400e-003	0.0140	0.0118	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	157.5525	157.5525	6.1700e-003	1.4900e-003	158.1522
Mobile	0.2338	1.1968	3.1698	9.3200e-003	0.4085	0.0113	0.4199	0.1163	0.0107	0.1270	0.0000	857.7327	857.7327	0.0486	0.0000	858.9463
Waste						0.0000	0.0000		0.0000	0.0000	2.4877	0.0000	2.4877	0.1470	0.0000	6.1631
Water						0.0000	0.0000		0.0000	0.0000	1.4864	29.6020	31.0883	0.1539	3.8600e-003	36.0850
Total	**0.3442**	**1.2108**	**3.1821**	**9.4000e-003**	**0.4085**	**0.0124**	**0.4209**	**0.1163**	**0.0117**	**0.1281**	**3.9740**	**1,044.8882**	**1,048.8622**	**0.3556**	**5.3500e-003**	**1,059.3477**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**38.50**	**0.00**	**0.24**	**29.25**	**0.00**	**0.58**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2338	1.1968	3.1698	9.3200e-003	0.4085	0.0113	0.4199	0.1163	0.0107	0.1270	0.0000	857.7327	857.7327	0.0486	0.0000	858.9463
Unmitigated	0.2338	1.1968	3.1698	9.3200e-003	0.4085	0.0113	0.4199	0.1163	0.0107	0.1270	0.0000	857.7327	857.7327	0.0486	0.0000	858.9463

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	145.38	145.38	145.38	468,321	468,321
General Office Building	145.38	145.38	145.38	468,321	468,321
Parking Lot	0.00	0.00	0.00		
Total	290.75	290.75	290.75	936,642	936,642

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
General Office Building	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Parking Lot	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	142.3183	142.3183	5.8800e-003	1.2200e-003	142.8274
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	142.3183	142.3183	5.8800e-003	1.2200e-003	142.8274
NaturalGas Mitigated	1.5400e-003	0.0140	0.0118	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	15.2342	15.2342	2.9000e-004	2.8000e-004	15.3248
NaturalGas Unmitigated	1.5400e-003	0.0140	0.0118	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	15.2342	15.2342	2.9000e-004	2.8000e-004	15.3248

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	142739	1.5400e-003	0.0140	0.0118	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	15.2342	15.2342	2.9000e-004	2.8000e-004	15.3248
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.5400e-003**	**0.0140**	**0.0118**	**8.0000e-005**		**1.0600e-003**	**1.0600e-003**		**1.0600e-003**	**1.0600e-003**	**0.0000**	**15.2342**	**15.2342**	**2.9000e-004**	**2.8000e-004**	**15.3248**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	142739	1.5400e-003	0.0140	0.0118	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	15.2342	15.2342	2.9000e-004	2.8000e-004	15.3248
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.5400e-003**	**0.0140**	**0.0118**	**8.0000e-005**		**1.0600e-003**	**1.0600e-003**		**1.0600e-003**	**1.0600e-003**	**0.0000**	**15.2342**	**15.2342**	**2.9000e-004**	**2.8000e-004**	**15.3248**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	215888	137.5733	5.6800e-003	1.1800e-003	138.0655
Parking Lot	14892	4.7449	2.0000e-004	4.0000e-005	4.7619
Total		**142.3183**	**5.8800e-003**	**1.2200e-003**	**142.8274**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	215888	137.5733	5.6800e-003	1.1800e-003	138.0655
Parking Lot	14892	4.7449	2.0000e-004	4.0000e-005	4.7619
Total		**142.3183**	**5.8800e-003**	**1.2200e-003**	**142.8274**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1089	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1089	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0125					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1089**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0125					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1089**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	31.0883	0.1539	3.8600e-003	36.0850
Unmitigated	31.0883	0.1539	3.8600e-003	36.0850

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	4.68506 / 2.87149	31.0883	0.1539	3.8600e-003	36.0850
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**31.0883**	**0.1539**	**3.8600e-003**	**36.0850**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	4.68506 / 2.87149	31.0883	0.1539	3.8600e-003	36.0850
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**31.0883**	**0.1539**	**3.8600e-003**	**36.0850**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.4877	0.1470	0.0000	6.1631
Unmitigated	4.9753	0.2940	0.0000	12.3261

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	24.51	4.9753	0.2940	0.0000	12.3261
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**4.9753**	**0.2940**	**0.0000**	**12.3261**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	12.255	2.4877	0.1470	0.0000	6.1631
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.4877**	**0.1470**	**0.0000**	**6.1631**

23480 Park Sorrento - Operational

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	1.62	1000sqft	0.05	1,620.00	0
Parking Lot	32.00	Space	0.29	12,800.00	0
Unenclosed Parking with Elevator	38.00	Space	0.34	15,200.00	0
Retirement Community	42.00	Dwelling Unit	1.32	42,000.00	120

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Woodstoves - No woodburning fireplaces allowed in new developments. Assumed one gas burning unit for each DU

Energy Use - California Energy Commission, Adoption Hearing, 2016 Building Energy Efficiency Standards, June 10, 2015. Available: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf. Accessed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblEnergyUse	LightingElect	3.70	3.52
tblEnergyUse	LightingElect	0.88	0.83
tblEnergyUse	LightingElect	1,001.10	720.79
tblEnergyUse	LightingElect	2.63	2.50
tblEnergyUse	T24E	2.12	2.01
tblEnergyUse	T24E	245.59	176.83
tblEnergyUse	T24NG	15.24	14.48
tblEnergyUse	T24NG	13,843.20	9,967.10
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	35.70	42.00
tblFireplaces	NumberNoFireplace	4.20	0.00
tblFireplaces	NumberWood	2.10	0.00
tblLandUse	LotAcreage	0.04	0.05
tblLandUse	LotAcreage	8.40	1.32
tblTripsAndVMT	HaulingTripNumber	166.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	64.00
tblVehicleTrips	ST_TR	86.32	150.00
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	SU_TR	31.90	150.00
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	WD_TR	148.15	150.00
tblVehicleTrips	WD_TR	2.40	3.44
tblWoodstoves	NumberCatalytic	2.10	0.00

tblWoodstoves	NumberNoncatalytic	2.10	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1883	0.0138	0.4408	8.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	10.7951	10.7951	9.0000e-004	1.8000e-004	10.8726
Energy	3.1100e-003	0.0267	0.0121	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	105.8908	105.8908	3.6900e-003	1.2100e-003	106.3425
Mobile	0.1285	0.5889	1.4357	3.8800e-003	0.2865	4.7800e-003	0.2913	0.0768	4.5000e-003	0.0813	0.0000	357.0711	357.0711	0.0219	0.0000	357.6185
Waste						0.0000	0.0000		0.0000	0.0000	4.2283	0.0000	4.2283	0.2499	0.0000	10.4754
Water						0.0000	0.0000		0.0000	0.0000	0.8885	17.8654	18.7540	0.0920	2.3100e-003	21.7415
Total	**0.3199**	**0.6293**	**1.8886**	**4.1300e-003**	**0.2865**	**0.0100**	**0.2966**	**0.0768**	**9.7400e-003**	**0.0865**	**5.1168**	**491.6224**	**496.7392**	**0.3684**	**3.7000e-003**	**507.0506**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1883	0.0138	0.4408	8.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	10.7951	10.7951	9.0000e-004	1.8000e-004	10.8726
Energy	3.1100e-003	0.0267	0.0121	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	105.8908	105.8908	3.6900e-003	1.2100e-003	106.3425
Mobile	0.1285	0.5889	1.4357	3.8800e-003	0.2865	4.7800e-003	0.2913	0.0768	4.5000e-003	0.0813	0.0000	357.0711	357.0711	0.0219	0.0000	357.6185
Waste						0.0000	0.0000		0.0000	0.0000	2.1142	0.0000	2.1142	0.1249	0.0000	5.2377
Water						0.0000	0.0000		0.0000	0.0000	0.7108	15.1606	15.8714	0.0736	1.8500e-	18.2645
Total	**0.3199**	**0.6293**	**1.8886**	**4.1300e-003**	**0.2865**	**0.0100**	**0.2966**	**0.0768**	**9.7400e-003**	**0.0865**	**2.8250**	**488.9175**	**491.7425**	**0.2251**	**3.2400e-003**	**498.3359**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**44.79**	**0.55**	**1.01**	**38.91**	**12.43**	**1.72**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1285	0.5889	1.4357	3.8800e-003	0.2865	4.7800e-003	0.2913	0.0768	4.5000e-003	0.0813	0.0000	357.0711	357.0711	0.0219	0.0000	357.6185
Unmitigated	0.1285	0.5889	1.4357	3.8800e-003	0.2865	4.7800e-003	0.2913	0.0768	4.5000e-003	0.0813	0.0000	357.0711	357.0711	0.0219	0.0000	357.6185

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Bank (with Drive-Through)	243.00	243.00	243.00	260,653	260,653
Parking Lot	0.00	0.00	0.00		
Retirement Community	144.48	144.48	144.48	493,710	493,710
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	387.48	387.48	387.48	754,363	754,363

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Bank (with Drive-Through)	16.60	8.40	6.90	6.60	74.40	19.00	27	26	47
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Retirement Community	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Bank (with Drive-Through)	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Parking Lot	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Unenclosed Parking with Elevator	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026
Retirement Community	0.546979	0.044837	0.199064	0.126777	0.018273	0.005878	0.019668	0.028140	0.001951	0.002100	0.004606	0.000701	0.001026

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	75.0929	75.0929	3.1000e-003	6.4000e-004	75.3616
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	75.0929	75.0929	3.1000e-003	6.4000e-004	75.3616
NaturalGas Mitigated	3.1100e-003	0.0267	0.0121	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	30.7979	30.7979	5.9000e-004	5.6000e-004	30.9809
NaturalGas Unmitigated	3.1100e-003	0.0267	0.0121	1.7000e-004		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	30.7979	30.7979	5.9000e-004	5.6000e-004	30.9809

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Bank (with Drive-Through)	34570.8	1.9000e-004	1.6900e-003	1.4200e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.8448	1.8448	4.0000e-005	3.0000e-005	1.8558
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	542560	2.9300e-003	0.0250	0.0106	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	28.9531	28.9531	5.5000e-004	5.3000e-004	29.1251
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.1200e-003**	**0.0267**	**0.0121**	**1.7000e-004**		**2.1500e-003**	**2.1500e-003**		**2.1500e-003**	**2.1500e-003**	**0.0000**	**30.7979**	**30.7979**	**5.9000e-004**	**5.6000e-004**	**30.9809**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Bank (with Drive-Through)	34570.8	1.9000e-004	1.6900e-003	1.4200e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.8448	1.8448	4.0000e-005	3.0000e-005	1.8558
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	542560	2.9300e-003	0.0250	0.0106	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	28.9531	28.9531	5.5000e-004	5.3000e-004	29.1251
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.1200e-003**	**0.0267**	**0.0121**	**1.7000e-004**		**2.1500e-003**	**2.1500e-003**		**2.1500e-003**	**2.1500e-003**	**0.0000**	**30.7979**	**30.7979**	**5.9000e-004**	**5.6000e-004**	**30.9809**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	15163.2	4.8313	2.0000e-004	4.0000e-005	4.8486
Parking Lot	10624	3.3850	1.4000e-004	3.0000e-005	3.3971
Retirement Community	169005	53.8488	2.2200e-003	4.6000e-004	54.0414
Unenclosed Parking with Elevator	40888	13.0278	5.4000e-004	1.1000e-004	13.0744
Total		**75.0929**	**3.1000e-003**	**6.4000e-004**	**75.3616**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	15163.2	4.8313	2.0000e-004	4.0000e-005	4.8486
Parking Lot	10624	3.3850	1.4000e-004	3.0000e-005	3.3971
Retirement Community	169005	53.8488	2.2200e-003	4.6000e-004	54.0414
Unenclosed Parking with Elevator	40888	13.0278	5.4000e-004	1.1000e-004	13.0744
Total		**75.0929**	**3.1000e-003**	**6.4000e-004**	**75.3616**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1883	0.0138	0.4408	8.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	10.7951	10.7951	9.0000e-004	1.8000e-004	10.8726
Unmitigated	0.1883	0.0138	0.4408	8.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	10.7951	10.7951	9.0000e-004	1.8000e-004	10.8726

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0200e-003	8.7100e-003	3.7100e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0858	10.0858	1.9000e-004	1.8000e-004	10.1457
Landscaping	0.0135	5.0700e-003	0.4371	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	0.7093	0.7093	7.1000e-004	0.0000	0.7269
Total	**0.1883**	**0.0138**	**0.4408**	**8.0000e-005**		**3.0800e-003**	**3.0800e-003**		**3.0800e-003**	**3.0800e-003**	**0.0000**	**10.7951**	**10.7951**	**9.0000e-004**	**1.8000e-004**	**10.8726**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0200e-003	8.7100e-003	3.7100e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0858	10.0858	1.9000e-004	1.8000e-004	10.1457
Landscaping	0.0135	5.0700e-003	0.4371	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	0.7093	0.7093	7.1000e-004	0.0000	0.7269
Total	**0.1883**	**0.0138**	**0.4408**	**8.0000e-005**		**3.0800e-003**	**3.0800e-003**		**3.0800e-003**	**3.0800e-003**	**0.0000**	**10.7951**	**10.7951**	**9.0000e-004**	**1.8000e-004**	**10.8726**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.8714	0.0736	1.8500e-003	18.2645
Unmitigated	18.7540	0.0920	2.3100e-003	21.7415

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.0641891 / 0.0393417	0.4259	2.1100e-003	5.0000e-005	0.4944
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.73647 / 1.72517	18.3280	0.0899	2.2500e-003	21.2471
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**18.7540**	**0.0920**	**2.3000e-003**	**21.7415**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.0513513 / 0.0360419	0.3601	1.6900e-003	4.0000e-005	0.4149
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.18918 / 1.61993	15.5113	0.0720	1.8100e-003	17.8496
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**15.8714**	**0.0736**	**1.8500e-003**	**18.2645**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.1142	0.1249	0.0000	5.2377
Unmitigated	4.2283	0.2499	0.0000	10.4754

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Bank (with Drive-Through)	1.51	0.3065	0.0181	0.0000	0.7594
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	19.32	3.9218	0.2318	0.0000	9.7161
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**4.2283**	**0.2499**	**0.0000**	**10.4754**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Bank (with Drive-Through)	0.755	0.1533	9.0600e-003	0.0000	0.3797
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	9.66	1.9609	0.1159	0.0000	4.8580
Unenclosed Parking with	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1142**	**0.1250**	**0.0000**	**5.2377**

APPENDIX G

Noise Worksheets

Raznick Mixed Use
IS/MND
Appendix G, Noise Worksheets

G.1 Long Term Noise Measurements

- LT-1
- LT-2

G.2 Construction Noise

- Construction Noise – R1
- Construction Noise – R2

G.3 Traffic Noise Models

- Existing Traffic Noise Model
- Haul Truck Traffic Noise Model

Appendix G.1
Long Term Noise Measurements

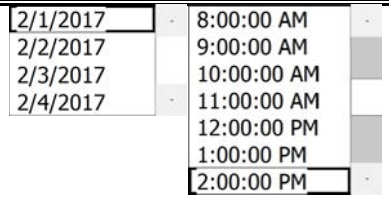
- LT-1
- LT-2

Noise Measurement Data

Project: 23480 Park Sorrento **Location:**

	02/01/17	02/02/17	02/03/17	02/04/17
12:00:00 AM		47.40		
1:00:00 AM		44.80		
2:00:00 AM		44.90		
3:00:00 AM		43.90		
4:00:00 AM		49.40		
5:00:00 AM		50.40		
6:00:00 AM		49.80		
7:00:00 AM		60.30		
8:00:00 AM		60.20		
9:00:00 AM		56.20		
10:00:00 AM		56.50		
11:00:00 AM		60.40		
12:00:00 PM		59.60		
1:00:00 PM		58.70		
2:00:00 PM	53.20			
3:00:00 PM	58.80			
4:00:00 PM	48.90			
5:00:00 PM	59.00			
6:00:00 PM	48.80			
7:00:00 PM	49.80			
8:00:00 PM	49.50			
9:00:00 PM	51.10			
10:00:00 PM	52.60			
11:00:00 PM	48.50			

Start Date and Time



Start
2/1/17 2:00 PM
End
2/2/17 2:00 PM

CNEL	**58**
L_{dn}	58
24-hr Max.	60
24-hr Min.	44
24-hr Nighttime Average[a]	49
24-hr Nighttime Max	53
24-hr Nighttime Min	44
24-hr Daytime Average[a]	57
24-hr Daytime Max	60
24-hr Daytime Min	49
Total Period Average	56
Total Period Max	60
Total Period Min	44
Total Period Daytime Average	57
Total Period Daytime Max	60
Total Period Daytime Min	49
Total Period Nighttime Average	49
Total Period Nighttime Max	53
Total Period Nighttime Min	44

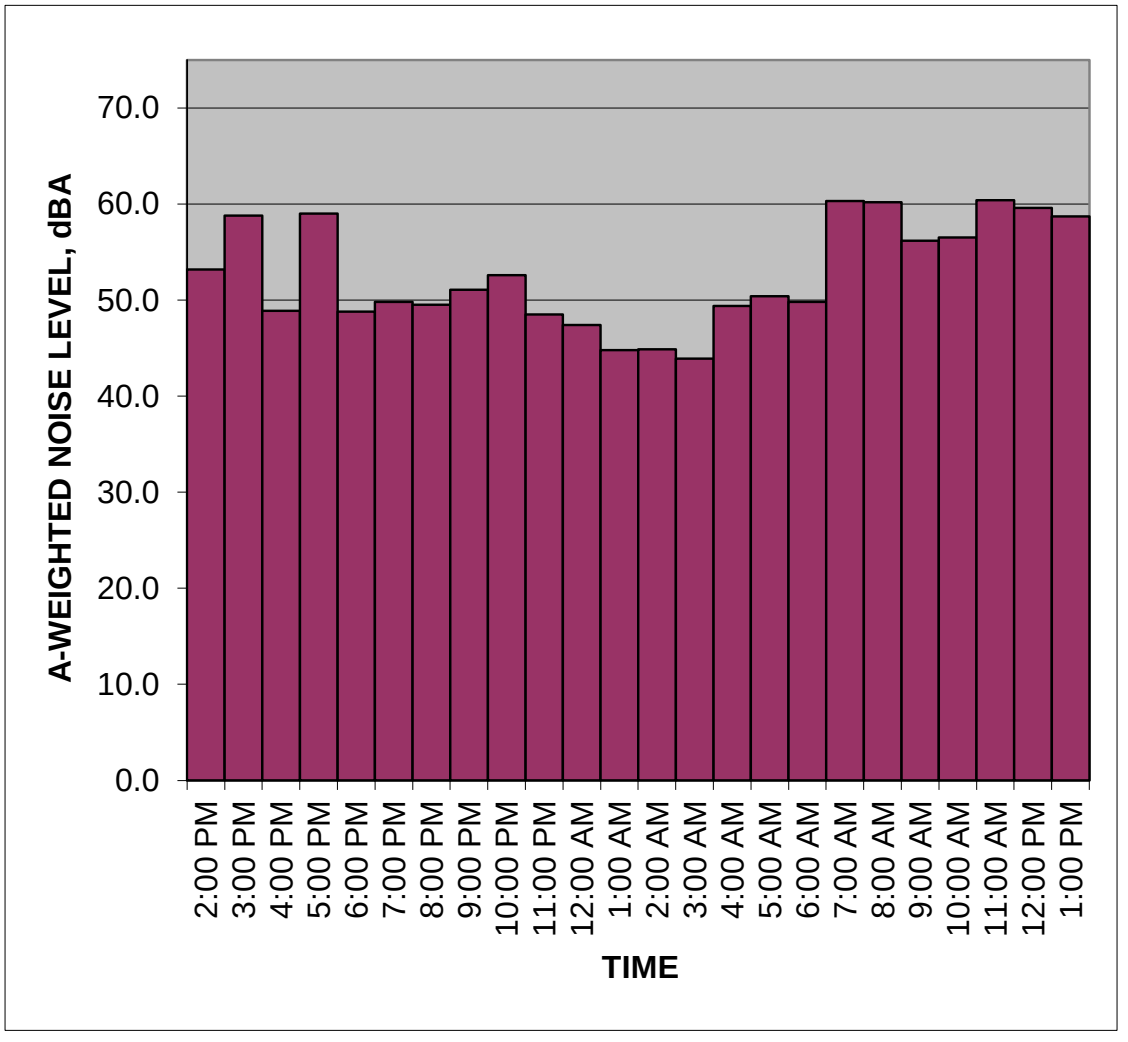
[a] Daytime hours are from 7:00 a.m. to 10:00 p.m., and nighttime hours are from 10:00 p.m. to 7:00 a.m.

Measured Ambient Noise Levels

Project: 23480 Park Sorrento
Location: 0
Sources: Ambient

Date: 2/1/17

TIME	HNL, dB(A)
2:00 PM	53.2
3:00 PM	58.8
4:00 PM	48.9
5:00 PM	59.0
6:00 PM	48.8
7:00 PM	49.8
8:00 PM	49.5
9:00 PM	51.1
10:00 PM	52.6
11:00 PM	48.5
12:00 AM	47.4
1:00 AM	44.8
2:00 AM	44.9
3:00 AM	43.9
4:00 AM	49.4
5:00 AM	50.4
6:00 AM	49.8
7:00 AM	60.3
8:00 AM	60.2
9:00 AM	56.2
10:00 AM	56.5
11:00 AM	60.4
12:00 PM	59.6
1:00 PM	58.7
CNEL, dB(A):	**58.1**

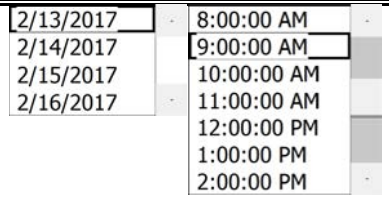


Noise Measurement Data

Project: 23480 Park Sorrento **Location:** LT-2 Park Sorrento

	02/13/17	02/14/17	02/15/17	02/16/17
12:00:00 AM		44.80		
1:00:00 AM		43.50		
2:00:00 AM		42.90		
3:00:00 AM		43.80		
4:00:00 AM		46.70		
5:00:00 AM		50.90		
6:00:00 AM		53.50		
7:00:00 AM		58.60		
8:00:00 AM		58.60		
9:00:00 AM	65.60			
10:00:00 AM	60.00			
11:00:00 AM	58.90			
12:00:00 PM	59.50			
1:00:00 PM	59.50			
2:00:00 PM	58.70			
3:00:00 PM	59.80			
4:00:00 PM	59.00			
5:00:00 PM	59.50			
6:00:00 PM	58.20			
7:00:00 PM	57.40			
8:00:00 PM	55.90			
9:00:00 PM	54.20			
10:00:00 PM	52.20			
11:00:00 PM	49.40			

Start Date and Time



Start
2/13/17 9:00 AM
End
2/14/17 9:00 AM

CNEL	**60**
L_{dn}	59
24-hr Max.	66
24-hr Min.	43
24-hr Nighttime Average[a]	49
24-hr Nighttime Max	54
24-hr Nighttime Min	43
24-hr Daytime Average[a]	60
24-hr Daytime Max	66
24-hr Daytime Min	54
Total Period Average	58
Total Period Max	66
Total Period Min	43
Total Period Daytime Average	60
Total Period Daytime Max	66
Total Period Daytime Min	58
Total Period Nighttime Average	49
Total Period Nighttime Max	57
Total Period Nighttime Min	43

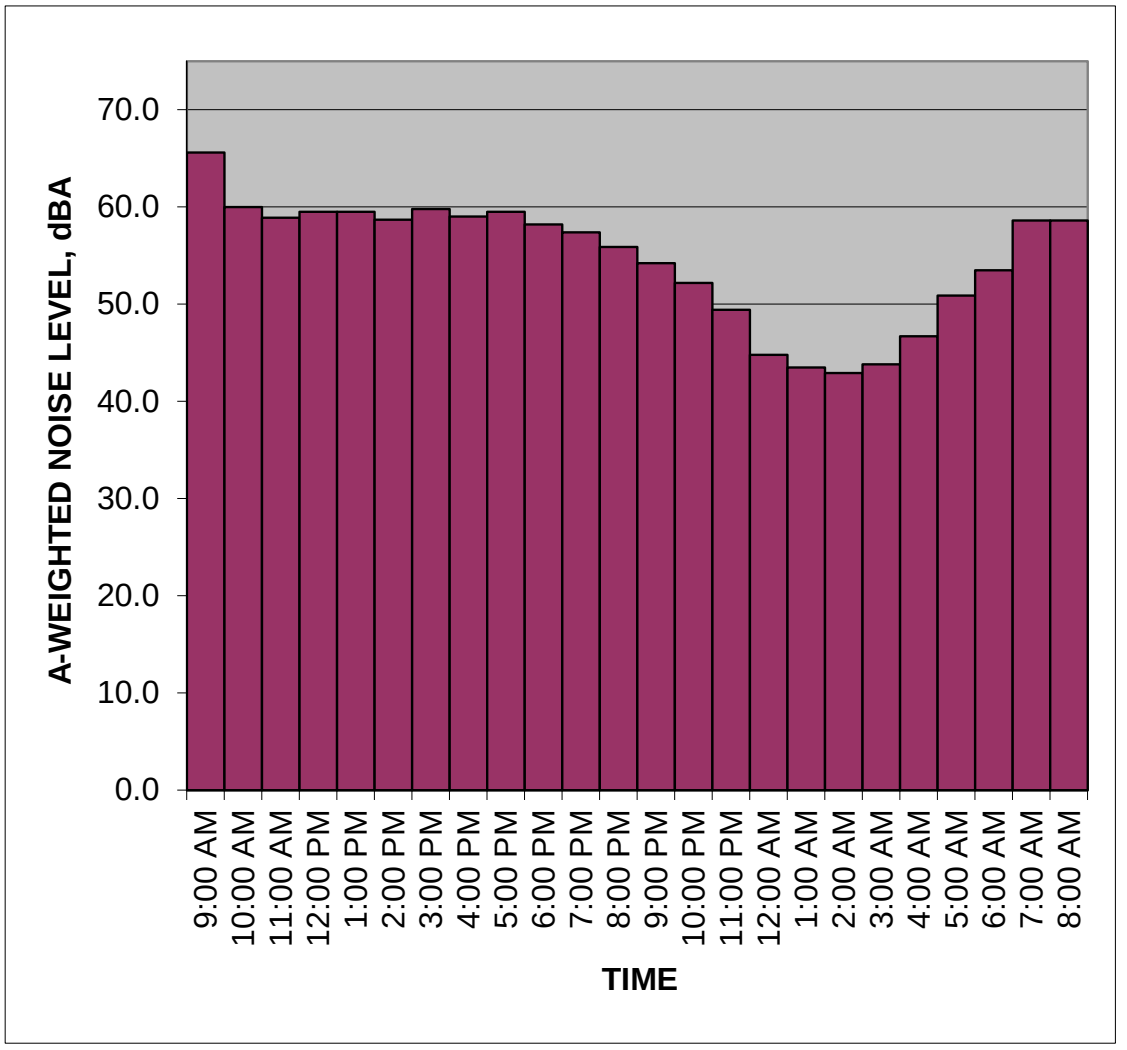
[a] Daytime hours are from 7:00 a.m. to 10:00 p.m., and nighttime hours are from 10:00 p.m. to 7:00 a.m.

Measured Ambient Noise Levels

Project: 23480 Park Sorrento
Location: LT-2 Park Sorrento
Sources: Ambient

Date: 13-Feb-17

TIME	HNL, dB(A)
9:00 AM	65.6
10:00 AM	60.0
11:00 AM	58.9
12:00 PM	59.5
1:00 PM	59.5
2:00 PM	58.7
3:00 PM	59.8
4:00 PM	59.0
5:00 PM	59.5
6:00 PM	58.2
7:00 PM	57.4
8:00 PM	55.9
9:00 PM	54.2
10:00 PM	52.2
11:00 PM	49.4
12:00 AM	44.8
1:00 AM	43.5
2:00 AM	42.9
3:00 AM	43.8
4:00 AM	46.7
5:00 AM	50.9
6:00 AM	53.5
7:00 AM	58.6
8:00 AM	58.6
CNEL, dB(A):	**60.0**



Appendix G.2
Construction Noise

- Construction Noise – R1
- Construction Noise – R2

23480 Park Sorrento R1

Construction Noise Levels at 25 Feet

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

Calculation

Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Demolition					**86**	***83***	**86**	
Air Compressor	1	78	50%	100	72	69	72	
Crawler Tractors	1	80	25%	200	68	62	65	
Rubber Tired Loaders	1	79	50%	50	79	76	79	
Skid Steer Loaders	1	80	40%	25	86	82	85	
Dump/Haul Trucks	1	76	20%	100	70	63	66	
Tractors/Loaders/Backhoes	1	80	25%	200	68	62	65	
Site Preparation					**85**	***83***	**86**	
Crawler Tractors	1	80	25%	50	80	74	77	
Skid Steer Loaders	1	80	40%	100	74	70	73	
Dump/Haul Trucks	1	76	20%	200	64	57	60	
Rubber Tired Loaders	1	79	50%	25	85	82	85	
Grading/Excavation					**89**	84	**87**	
Compactor (Ground)	1	83	20%	50	83	76	79	
Crawler Tractors	1	80	25%	100	74	68	71	
Rubber Tired Loaders	1	79	50%	200	67	64	67	
Tractors/Loaders/Backhoes	2	80	25%	25	89	83	86	
Drainage/Utilities/Sub-grade					**87**	***84***	**87**	
Compactor (Ground)	1	83	20%	50	83	76	79	
Excavator	1	81	40%	25	87	83	86	
Skid Steer Loaders	1	80	40%	100	74	70	73	
Trenchers	1	80	50%	200	68	65	68	
Tractors/Loaders/Backhoes	2	80	25%	200	71	65	68	
Building Construction					**86**	***84***	**87**	
Concrete Saw	1	90	20%	100	84	77	80	
Air Compressor	1	78	50%	50	78	75	78	
Cement and Mortar Mixers	1	79	40%	200	67	63	66	
Cranes	1	81	40%	100	75	71	74	
Tractors/Loaders/Backhoes	2	80	25%	100	77	71	74	
Forklift	1	75	10%	200	63	53	56	
Pumps	1	81	50%	200	69	66	69	
Skid Steer Loaders	1	80	40%	25	86	82	85	

Construction Phase Equipment Type	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance (ft)	Lmax	Leq	L10	Estimated Noise Shielding, dBA
Architectural Coating					**84**	***81***	**84**	
Air Compressor	1	78	50%	25	84	81	84	
Paving					**89**	***84***	**87**	
Concrete Saw	1	90	20%	100	84	77	80	
Compactor (Ground)	1	83	20%	25	89	82	85	
Other Equipment	1	85	50%	200	73	70	73	
Tractors/Loaders/Backhoes	1	80	25%	50	80	74	77	
Sweepers/Scrubbers	1	82	10%	100	76	66	69	
Skid Steer Loaders	1	80	40%	200	68	64	67	
Roller	1	80	20%	100	74	67	70	
Final Pickups					**81**	***71***	**74**	
Forklift	1	75	10%	25	81	71	74	

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

23480 Park Sorrento R2

Construction Noise Levels at 25 Feet

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

Calculation

Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Demolition					**76**	***75***	**78**	
Air Compressor	1	78	50%	150	68	65	68	
Crawler Tractors	1	80	25%	250	66	60	63	
Rubber Tired Loaders	1	79	50%	100	73	70	73	
Skid Steer Loaders	1	80	40%	75	76	72	75	
Dump/Haul Trucks	1	76	20%	150	66	59	62	
Tractors/Loaders/Backhoes	1	80	25%	250	66	60	63	
Site Preparation					**75**	***75***	**78**	
Crawler Tractors	1	80	25%	100	74	68	71	
Skid Steer Loaders	1	80	40%	150	70	66	69	
Dump/Haul Trucks	1	76	20%	250	62	55	58	
Rubber Tired Loaders	1	79	50%	75	75	72	75	
Grading/Excavation					**79**	76	**79**	
Compactor (Ground)	1	83	20%	100	77	70	73	
Crawler Tractors	1	80	25%	150	70	64	67	
Rubber Tired Loaders	1	79	50%	250	65	62	65	
Tractors/Loaders/Backhoes	2	80	25%	75	79	73	76	
Drainage/Utilities/Sub-grade					**77**	***76***	**79**	
Compactor (Ground)	1	83	20%	100	77	70	73	
Excavator	1	81	40%	75	77	73	76	
Skid Steer Loaders	1	80	40%	150	70	66	69	
Trenchers	1	80	50%	250	66	63	66	
Tractors/Loaders/Backhoes	2	80	25%	250	69	63	66	
Building Construction					**80**	***78***	**81**	
Concrete Saw	1	90	20%	150	80	73	76	
Air Compressor	1	78	50%	100	72	69	72	
Cement and Mortar Mixers	1	79	40%	250	65	61	64	
Cranes	1	81	40%	150	71	67	70	
Tractors/Loaders/Backhoes	2	80	25%	150	73	67	70	
Forklift	1	75	10%	250	61	51	54	
Pumps	1	81	50%	250	67	64	67	
Skid Steer Loaders	1	80	40%	75	76	72	75	

Construction Phase Equipment Type	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance (ft)	Lmax	Leq	L10	Estimated Noise Shielding, dBA
Architectural Coating					**74**	***71***	**74**	
Air Compressor	1	78	50%	75	74	71	74	
Paving					**80**	***78***	**81**	
Concrete Saw	1	90	20%	150	80	73	76	
Compactor (Ground)	1	83	20%	75	79	72	75	
Other Equipment	1	85	50%	250	71	68	71	
Tractors/Loaders/Backhoes	1	80	25%	100	74	68	71	
Sweepers/Scrubbers	1	82	10%	150	72	62	65	
Skid Steer Loaders	1	80	40%	250	66	62	65	
Roller	1	80	20%	150	70	63	66	
Final Pickups					**71**	***61***	**64**	
Forklift	1	75	10%	75	71	61	64	

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Appendix G.3
Traffic Noise Models

- Existing Traffic Noise Model
- Haul Truck Traffic Noise Model

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 23480 Park Sorrento
Project Number: D140358.45
Analysis Scenario: 2017
Source of Traffic Volumes: Passing vehicles

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)
			Auto	MT	HT	Auto	MT	HT	
Interstate 5									
ST-1 Park Granada	Hard	25	45	45	45	580	1	0	68
ST-2	Hard	25	30	30	30	44	0	4	56
ST-3	Hard	25	30	30	30	40	0	0	51
ST-4 Park Sorrento	Hard	25	35	40	40	620	0	4	65

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.

TRAFFIC NOISE ANALYSIS TOOL

Project Name: Park Sorrento
Project Number: D140358.45
Analysis Scenario: 2017
Source of Traffic Volumes: Streets

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)
			Auto	MT	HT	Auto	MT	HT	
Park Sorrento									
R1	Hard	25	35	35	35	0	0	6	57
R2	Hard	75	35	35	35	0	0	6	52

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.

APPENDIX H

Conditional Statement of Water Service

LAS VIRGENES MUNICIPAL WATER DISTRICT
EST. 1956

Dedicated to Providing High-Quality Water Service in a Cost-Effective and Environmentally Sensitive Manner

HEADQUARTERS
4232 Las Virgenes Road
Calabasas, CA 91302
(818) 251-2100
Fax (818) 251-2109

WESTLAKE
FILTRATION PLANT
(818) 251-2370
Fax (818) 251-2379

TAPIA WATER
RECLAMATION FACILITY
(818) 251-2300
Fax (818) 251-2309

RANCHO LAS VIRGENES
COMPOSTING FACILITY
(818) 251-2340
Fax (818) 251-2349

www.LVMWD.com

MEMBER AGENCY OF THE
METROPOLITAN WATER
DISTRICT
OF SOUTHERN CALIFORNIA

February 15, 2017

CONDITIONAL STATEMENT OF WATER SERVICE

TO WHOM IT MAY CONCERN:

SUBJECT: 23480 Park Sorrento

This is to advise you that the water system for the subject property will be operated by Las Virgenes Municipal Water District (LVMWD).

This project will be assured of connection to the water system of the district only if the proponent satisfies all terms and conditions for service as set forth in the district's Code.

Sincerely,

Joanne Bodenhamer

Joanne Bodenhamer
Planning & New Development Technician

APPENDIX I

Updated Traffic, Circulation, and Parking Study

ASSOCIATED TRANSPORTATION ENGINEERS
100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509

Since 1978

Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

July 13, 2017 15011M01

Ken Stockton AIA
Ken Stockton Architects, Inc.
5522 Fallbrook Avenue
Woodland Hills, CA 91367

MEMO TO UPDATE TRAFFIC, CIRCULATION AND PARKING STUDY FOR THE PARK SORRENTO MIXED-USE PROJECT, CITY OF CALABASAS

The following letter addresses the comments provided by City staff for the Park Sorrento Mixed-Use Project in the City of Calabasas.

Comment: Traffic study still shows the old unit count of 3 studios, 27 1-bedroom units and 12 2-bedroom units. The current project includes 9 studios, 21 1-bedroom units and 12 2-bedroom units.

Analysis: The total number of units does not change (42 proposed units). Since the trip forecasts for the project are based on the number of units (not bedrooms), the trip generation estimates for the project do not change.

The individual parking requirements per the zoning ordinance would change but the overall requirement does not. The updated parking calculations are shown in Table A.

Table A
City Zoning Ordinance Parking Requirements

Use	Rate	Required Spaces
Commercial		
1,625 SF	1.0 Spaces/250 SF	8 Spaces
Residential		
9 Studio Units	1.0 Spaces/Unit	9 Spaces
21 1-Bedroom Units	1.5 Spaces/Unit	32 Spaces
12 2-Bedroom Units	2.0 Spaces/Unit	24 Spaces
Guest Parking	1.0 Spaces/3 Units	14 Spaces
Subtotal		**87 Spaces**
With 25% Reduction(a)		**65 Spaces**

(a) 25% parking reduction pursuant to MC 17.28.050.

Comment: The alternative trip generation for the bank states that the site's parking supply cannot accommodate retail uses.

Analysis: The statement is a typo, it should read, "The bank use was selected for the analysis since other commercial uses could not be supported by the proposed parking supply (i.e. the proposed parking supply would not support a restaurant ~~or retail~~ use).

Comment: Why were SANDAG trip rates used for the bank use in the alternative trip generation analysis?

Analysis: ATE used the SANDAG rates for the bank for the ADT and AM peak hour forecasts since ITE does not have ADT and AM peak hour rates for banks without a drive-thru. The SANDAG rates are reasonable and are often used since ITE does not have the ADT and AM peak hour rates. Even if the SANDAG rates were doubled, the Project would result in a net reduction in traffic assuming the credit for the existing professional offices.

Thank You,

Associated Transportation Engineers

Scott A. Schell, AICP, PTP
Principal Transportation Planner

SAS/DLD/EKM

ASSOCIATED TRANSPORTATION ENGINEERS
100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509
Since 1978

Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

July 21, 2016 15011L04

Ken Stockton AIA
Ken Stockton Architects, Inc.
5522 Fallbrook Avenue
Woodland Hills, CA 91367

UPDATED TRAFFIC, CIRCULATION AND PARKING STUDY FOR THE PARK SORRENTO MIXED-USE PROJECT, CITY OF CALABASAS

Associated Transportation Engineers (ATE) previously prepared a traffic and circulation study for the Park Sorrento Mixed-Use Project (study dated February 23, 2015). That study presented trip generation estimates for the project and evaluated potential traffic impacts based on the City thresholds. That study also assessed the proposed site access and circulation system.

City staff reviewed the previous study and requested that the study be updated to include the additional tasks listed below.

1. Park Sorrento Traffic Counts. The City requested a 24-hour count on Park Sorrento adjacent to the site to verify the flow profile.

2. Site Specific Traffic Counts. The City requested that a "site specific" study be completed to determine the trip generation for the existing uses (i.e. count existing site instead of using ITE rates).

3. Worst Case Trip Generation Forecasts. The City requested the trip generation analysis for the proposed project use "worse-case" trip rates for the proposed commercial use.

4. Site Access. The City requested the 7.5 second corner sight distance criteria be used for the project driveway sight distance analysis.

5. Parking Analysis. The City requested that the updated study include a parking analysis.

PROJECT DESCRIPTION

The project site is located at 23480 Park Sorrento in the City of Calabasas. Figure 1 (attached) shows the location of the project site within the City. The project is proposing to demolish the existing 23,400 SF office building and construct a 42-unit senior apartment building and a 1,630 SF commercial building that would be used for professional offices. The existing site driveway would be removed and a new driveway would be constructed approximately 70 feet to the east for access to the site. A total of 70 parking spaces are proposed on site. Figure 2 presents the project site plan.

PROJECT TRIP GENERATION

Proposed Project

Trip generation estimates were calculated for the proposed residential units and commercial space using rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation* report.[1] It is important to note that the applicant is proposing professional office uses within the commercial space. No restaurant uses are proposed since the proposed parking supply could not accommodate those uses.

The rates for Senior Housing – Attached (ITE Land Use Code #252) and General Office Buildings (ITE Land Use Code #710) were applied to the proposed uses. As requested by City staff, traffic counts were conducted at the site to determine the trip generation for the existing offices that will be removed from the project site. The counts were collected at the site on Wednesday, May 4, 2016 (count data attached for reference). The office building was 100% occupied at the time of the counts. Table 1 shows the trip generation estimates for the project (see attached worksheet for detailed calculations).

Table 1
Project Trip Generation – With Proposed Uses

Scenario / Uses	Size	ADT		A.M. Peak Hour		P.M. Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
Proposed:							
Senior Housing	42 Units	3.44	144	0.20	8	0.25	11
Professional Office	1.62 KSF	11.03	18	1.56	3	1.49	2
Subtotals:			162		11		14
Existing:							
Professional Office(a)	23.4 KSF	11.03	258	1.24	29	1.11	26
Net Trip Generation:			**-96**		**-18**		**-13**

(a) Peak hour trip generation based on counts taken at the existing site. ADT based on ITE rates. Existing trip generation rates for the office are lower than ITE rates for General Office (ITE A.M. rate = 1.56; P.M. rate 1.49).

[1] Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

The data presented in Table 1 show that the proposed uses would result in less traffic being generated at the project site (-96 average daily trips, -18 A.M. peak hour trips, and -13 P.M. peak hour trips). Since the proposed uses would result in a reduction in traffic, the project would not generate significant traffic impacts to the surrounding street network.

Alternative Project

Trip generation estimates were also calculated for the project assuming that the commercial space would be occupied by a bank use in order to assess potential traffic impacts assuming a commercial use that would generate more traffic than the proposed office use. The bank use was selected for the analysis since other commercial uses could not be supported by the proposed parking supply (i.e. the proposed parking supply would not support a restaurant or retail use). The ITE and SANDAG rates for Walk-In Banks were applied for this scenario. Table 2 shows the trip generation estimates assuming the bank use in lieu of the proposed office use (see attached worksheet for detailed calculations).

Table 2
Project Trip Generation – With Bank Use

Scenario / Uses	Size	Pass-By Factor	ADT		A.M. Peak Hour		P.M. Peak Hour	
			Rate	Trips	Rate	Trips	Rate	Trips
Proposed:								
Senior Housing	42 Units	1.00	3.44	144	0.20	8	0.25	11
Bank(a)	1.62 KSF	0.75	150.00	182	6.00	7	12.13	15
Subtotals:				326		15		26
Existing:								
Professional Office(b)	23.4 KSF	1.00	11.03	258	1.24	29	1.11	26
Net Trip Generation:				**68**		**-14**		**0**

(a) SANDAG rate for ADT and A.M. peak hour since no ITE rates for these time periods. ITE rate for P.M. peak hour.
(b) Trip generation based on counts taken at the existing site.

The data presented in Table 2 show that the proposed project with a bank use would result in +68 daily trips, -14 A.M. peak hour trips and 0 P.M. peak hour trips assuming a bank use in the commercial space. Since this scenario would result in a reduction or no change in traffic during the peak hour periods, the project would not generate significant traffic impacts to the surrounding street network assuming the bank use.

SITE ACCESS ANALYSIS

The project is proposing to relocate the existing site driveway on Park Sorrento to the east by approximately 70 feet (see attached Site Plan). The new driveway location would provide better alignment with the driveway that serves the property located across the street and would provide for increased sight distance looking to the west when compared to the existing driveway location.

Driveway Sight Distances

Park Sorrento is 48 feet wide curb-to-curb adjacent the project site and contains one travel lane in each direction and parallel parking on both sides of the road. There is a speed hump located on Park Sorrento just east of the proposed driveway. ATE collected 24-hour counts on Park Sorrento adjacent to the site to determine existing traffic flows. The counts were collected on Wednesday, May 4, 2016 (traffic count data is attached for reference). The counts show a total of 4,035 vehicle per day on Park Sorrento adjacent to the site. The A.M. peak hour occurred from 7-8 and the P.M. peak hour occurred from 4-5, which is typical for this area. ATE also conducted speed surveys along Park Sorrento in both directions adjacent to the proposed driveway. The posted speed limit on Park Sorrento is 35 MPH. However, there is a speed hump on Park Sorrento just east of the proposed driveway that results in slower vehicle speeds. The speed samples found that the 85th percentile speed in both directions was slightly less than 35 MPH (speed data attached for reference). The following sight distance analysis assumes 35 MPH as the design speed.

Sight distance were evaluated from the proposed driveway location using criteria outlined in the Caltrans Highway Design Manual.[2] The Caltrans criteria for both stopping sight distance and corner sight distance were applied in the analysis. As outlined in the Caltrans Highway Design Manual, the minimum stopping sight distance for the proposed driveway is 250 feet and the minimum corner sight distance is 385 feet.

ATE met City staff in the field to assess the sight distances at the proposed driveway. The sight distance looking to the east from the proposed driveway location was measured at about 410 feet, which exceeds the 250-foot stopping sight distance and the 385-foot corner sight distance criteria. The sight distance looking to the west from the proposed driveway location was measured at about 320 feet, which meets the 250-foot stopping sight distance but is short of the 385-foot corner sight distance criteria. The sight distance looking to the west is limited by a horizontal curve and therefore cannot be extended without realigning Park Sorrento Road. The sight distance is, however, sufficient for the private driveway connection since the Caltrans Highway Design Manual states that the minimum corner sight distance shall be equal to the stopping sight distance for private road intersections. The 320-foot sight distance would provide sufficient time for a drivers traveling eastbound along Park Sorrento to see a vehicle exiting the driveway and stop before colliding with that vehicle.

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[2] Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

Figure 3 illustrates the sight lines at the proposed driveway. Based on the field review completed by ATE and City staff, it was determined that red curb should be provided east and west of the proposed driveway to ensure that sight distances are not impeded by parked vehicles. To the west, the curb should be painted red between the proposed driveway and the existing red curb along the frontage of the adjacent parcel. To the east, the curb should be painted red between the proposed driveway and a point 20 feet west of the existing red curb that is adjacent to the speed hump. This would leave 1 parking spaces between the proposed driveway and the speed hump. A total of 5 on-street parking spaces would be lost as a result of the relocated driveway and red curb. City staff indicated that they will re-evaluate sight distances after the project is constructed to determine if some of the 5 on-street spaces that would be initially lost adjacent to the driveway could be remarked for on-street parking.

PARKING

Zoning Ordinance Parking Requirements

The proposed mixed-use project includes 70 parking spaces. Table 3 shows the project's parking requirement based on the City's Zoning Ordinance, as taken from the site plan. The parking calculations account for the 25% parking reduction that is being requested pursuant to Municipal Code 17.28.050.

Table 3
City Zoning Ordinance Parking Requirements

Use	Rate	Required Spaces
Commercial		
1,625 SF	1.0 Spaces/250 SF	8 Spaces
Residential		
3 Studio Units	1.0 Spaces/Unit	3 Spaces
27 1-Bedroom Units	1.5 Spaces/Unit	40 Spaces
12 2-Bedroom Units	2.0 Spaces/Unit	24 Spaces
Guest Parking	1.0 Spaces/3 Units	14 Spaces
Subtotal		**87 Spaces**
With 25% Reduction(a)		**65 Spaces**

(a) 25% parking reduction pursuant to MC 17.28.050.

As shown in Table 3, 87 parking spaces are required pursuant to the City's Zoning Ordinance. The Zoning Ordinance parking requirement would be reduced to 65 spaces with the 25% parking reduction that is being requested pursuant to Municipal Code 17.28.050. The proposed 70-space parking supply would meet that City requirement with a surplus of 5 spaces. City staff have indicated that the 5 surplus spaces are required in order to off-set the 5 on-street parking spaces that would be lost as a result of the relocated driveway. Thus, the project would meet the City's requirement.

Peak Parking Demands

The Zoning Ordinance parking calculations presented above show that the project would be required to provide 87 spaces assuming no reduction in parking requirements and 65 spaces with the 25% parking reduction allowed under Municipal Code 17.28.050. Municipal Code 17.28.050 states, *"The review authority may grant up to a twenty-five (25) percent reduction in number of off-street parking spaces required by Section 17.28.040 in compliance with Section 17.62.060. The applicant shall provide evidence to demonstrate, to the satisfaction of the director and the city engineer that any requested reduction is necessary for the efficient operation of the subject use and will not result in a parking deficiency."*

ITE Rates. The City's Zoning Ordinance does not include rates for senior housing units, which generate lower parking demands than typical housing units. Peak parking demands were forecast for the proposed project using parking demand rates presented in the ITE *Parking Generation* report [3] in order to determine if the peak parking demands would be accommodated by the proposed parking supply. Table 4 shows the peak parking demands forecast for the proposed uses based on ITE rates.

Table 4
Peak Parking Demand Forecasts – ITE Rates

Use	Size	Rate	Peak Parking Demand
Office Building(a)	1,620 SF	3.45 Spaces/1 KSF	6 Spaces
Residential(b)	42 Units	0.66 Spaces/Unit	28 Spaces
Totals			**34 Spaces**

(a) 85th Percentile rates for Office Building (ITE Code 701).
(b) 85th Percentile rates for Senior Adult Attached Housing (ITE Code 252).

As shown in Table 4, the proposed uses would generate a peak demand for 34 spaces based on ITE peak parking demand rates. It is noted that the proposed uses have complimentary parking demands. That is, the parking demands for the residential units will peak during the evening and overnight hours while the parking demands for the office use will peak during the 8 A.M. to 5 P.M. office hours.

Local Studies. Studies of other senior housing complexes in Southern California also show that peak parking demands for senior housing units are lower than the City's zoning ordinance rate. Table 5 shows the peak parking demand rates taken from studies conducted at 3 similar senior housing sites located in Southern California communities in the vicinity of Calabasas.

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[3] Parking Generation, Institute of Transportation Engineers, 4th Edition, 2010.

Table 5
Senior Housing Peak Parking Demand Rates – Local Studies

Site	Location	# Units	Peak Parking Demand Rate
Cypress Meadows	Ventura	104	0.81 Spaces/Unit
Shepard Place	Carpinteria	169	0.88 Spaces/Unit
Rancho Franciscan	Santa Barbara	111	0.95 Spaces/Unit
Average			**0.88 Spaces/Unit**

As shown, the average peak parking demand rate is 0.88 spaces per senior residential unit. Application of this rate to the senior housing units proposed at the Park Sorrento Mixed-Use Project results in a peak demand for 37 parking spaces for the housing units + 6 spaces for the commercial use (43 total spaces), which is significantly fewer spaces that what is proposed for the Park Sorrento Mixed-Use Project (70 spaces).

For reference, parking studies at senior housing development in the San Francisco Bay Area show a peak parking demand rate of 0.71 spaces per senior residential unit (study attached for reference). Those studies further demonstrate that parking demands at senior housing developments are significantly lower than the City's zoning ordinance requirement.

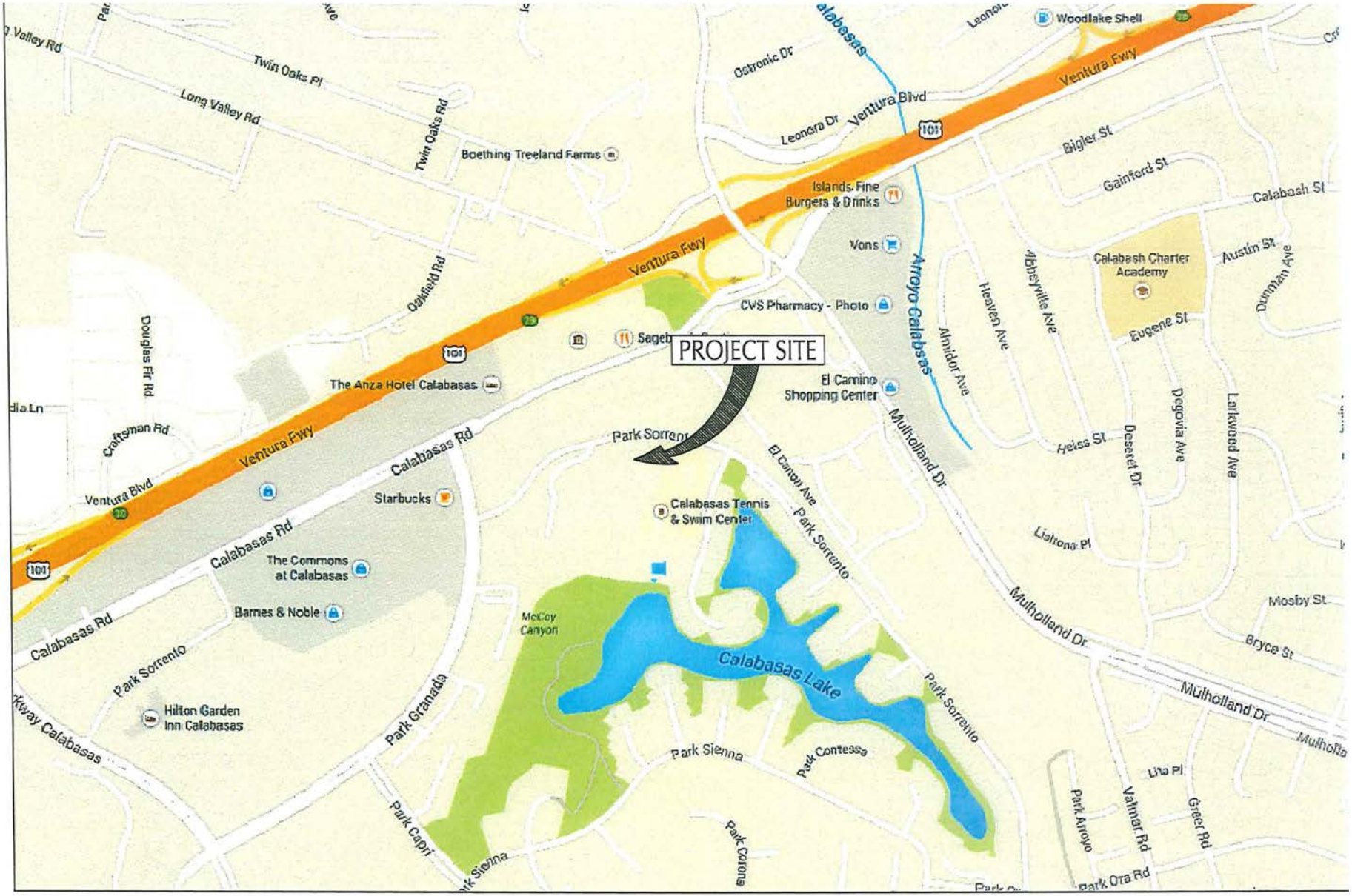
This concludes our updated traffic, circulation and parking study for the 23480 Park Sorrento Mixed-Use Project. We appreciate the opportunity to assist you with the project.

Associated Transportation Engineers

Scott A. Schell, AICP, PTP
Principal Transportation Planner

SAS/DLD

Attachments



Source: Google Maps

ASSOCIATED TRANSPORTATION ENGINEERS

PROJECT SITE LOCATION

FIGURE 1

MMF - #15011

FIRE DEPARTMENT NOTES

1. PROVIDE AN APPROVED FIRE ALARM SYSTEM. SUBMIT (3) COPIES OF SYSTEM TO FIRE DEPARTMENT BEFORE INSTALLATION.

2. PROVIDE SMOKE DETECTOR IN THE COMMON STAIRWELLS SERVING TWO OR MORE TENANTS. (HEALTH AND SAFETY CODE 13113.7)

3. PROVIDE SINGLE STATION SMOKE DETECTOR WITHIN SLEEPING AREAS AND AREAS GIVING ACCESS TO SLEEPING AREAS, AND ON TOP CENTER OR STAIRS LEADING THERE TO. (INDICATE LOCATION ON FLOOR PLANS)

4. RUBBISH ROOM SHALL BE OF ONE-HOUR FIRE RESISTIVE CONSTRUCTION AND BE EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM. (L.A.M.C. 57.21)

5. ROOF CONSTRUCTION SUCH AS TELEVISION ANTENNA, GUY WIRES, SOLAR PANELS, AND RAZOR RIBBON SHALL NOT PREVENT FIRE DEPARTMENT ACCESS OR EGRESS IN THE EVENT OF A FIRE. (L.A.M.C. 57.12)

6. ROOF COVERING SHALL CONFORM WITH TABLE 15A (L.A.M.C. 91.1501)

7. FIRE DAMPERS SHALL BE PROVIDED WHERE DUCTS PENETRATE FIRE RATED WALLS OR CEILINGS (TITLE 24 CHAPTER 32U.B.C.)

8. PARKING SPACES SHALL NOT OBSTRUCT REQUIRED EXITS. (L.A.M.C. 57.33)

9. CONSPICUOUSLY MARK GAS SHUT-OFF VALVE. (C.C.R. TITLE 19)

10. MEANS OF EGRESS MUST HAVE CONTINUOUS, UNOBSTRUCTED, AND UNDIMINISHED PATH TO A PUBLIC WAY.

11. EXIT COURT, LESS THAN 10 FEET IN WIDTH, SHALL HAVE A MINIMUM OF ONE-HOUR, FIRE RESISTIVE CONSTRUCTION FOR A DISTANCE OF 10 FEET ABOVE THE COURT, AND OPENING SHALL BE PROTECTED WITH THREE-FOURTHS HOUR FIRE ASSEMBLIES.

12. AN EXIT WALKWAY WITH A MINIMUM WIDTH OF 48" SHALL BE MAINTAIN CONTINUOUSLY TO A PUBLIC WAY.

13. EXIT PATHS OR WALKWAYS TO PUBLIC WAYS, SHALL BE CLEARLY DELINEATED. EXIT PATHS SHALL BE DELINEATED BY PAINTED LINES, RAILING, BARRIER POSTS WALKS, OR OTHER APPROVED MEANS.

14. BUILDING ADDRESS SHALL BE PROVIDED AT OR NEAR ENTRANCE OF THE BUILDING IN ACCORDANCE TO L.A.M.C. 57.09.11

15. FIRE DEPARTMENT ACCESS, FIRE HYDRANTS AND FIRE FLOW REQUIREMENTS ON THIS PROJECT SHALL BE REVIEWED BY THE CONSTRUCTION SERVICES UNIT (HYDRANTS AND ACCESS) BUREAU OF FIRE PREVENTION AND PUBLIC SAFETY, 200 N. MAIN ST., CITY HALL EAST, ROOM 920 - PHONE 485-5964 (L.A.M.C. 57.09)

16. DOORS OPENING INTO ONE-HOUR FIRE-RESISTIVE CORRIDOR SHALL BE PROTECTED WITH SMOKE OR DRAFT-STOP FIRE ASSEMBLY HAVING A MINIMUM 20 MINUTE RATING.

17. WINDOWS IN ONE-HOUR CORRIDOR SHALL BE LIMITED TO FIXED GLAZING OF 45 MINUTE FIRE RATING AND SHALL NOT EXCEED 25% OF CORRIDOR/ROOM COMMON WALK (SECTION 1004.3.4.3)

18. ELEVATOR DOORS SHALL NOT OPEN DIRECTLY INTO ONE-HOUR CORRIDORS, ELEVATOR LOBBIES SHALL BE OF ONE-HOUR CONSTRUCTION WITH 20/45 MINUTE DOORS (SECTION 1004.3.4.3)

19. INTERIOR WALL AND CEILING FINISHES SHALL COMPLY WITH TABLE 8B.

20. INTERIOR WALL AND CEILING FINISHES FOR EXIT CORRIDORS SHALL NOT EXCEED A FLAME SPREAD CLASS 2.

21. INTERIOR WALL AND CEILING FINISHES FOR ENCLOSED STAIRWAY SHALL NOT EXCEED A FLAME SPREAD CLASS 1.

22. PROVIDED EXIT SIGNS AND DIRECTIONAL EXIT SIGNS WITH MINIMUM 6" HIGH BY 3/4" STROKE BLOCK LETTERS ON A CONTRASTING BACKGROUND. SPACING BETWEEN SIGNS SHALL NOT EXCEED 100 FEET.

23. PROVIDE APPROVED LOW-LEVEL EXIT SIGNS IN ALL INTERIOR EXIT CORRIDORS.

24. WHENEVER THE BUILDING IS OCCUPIED, EXIT SIGNS SHALL LIGHTED SO THAT THEY ARE CLEARLY VISIBLE.

25. PROVIDE STAIRWAY NUMBERING SYSTEM FOR BUILDINGS THREE OR MORE STORIES (L.A.M.C. 57.32)

26. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDING ON EACH FLOOR ALSO DURING CONSTRUCTION.

27. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 10BC FOR KITCHEN, ELECTRICAL ROOM, MECHANICAL ROOM, OR PARKING GARAGE.

28. PROVIDE FIRE EXTINGUISHER AS REQUIRED BY THE FIRE DEPARTMENT FIELD INSPECTOR.

29. PROVIDE AN AUTOMATIC FIRE EXTINGUISHING SYSTEM THROUGH-OUT BUILDING.

30. ANY DECORATIONS SHALL BE NON-COMBUSTIBLE OR FLAME-RETARDANT TREATED IN AN APPROVED MANNER (CURTAINS, DRAPES, SHADES, HANGINGS, ETC.)

31. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE ADDRESS SIDE OF BUILDING - SEE SITE PLAN.

32. EXIT DOORS SHALL SWING IN THE DIRECTION OF EXIT TRAVEL WHEN SERVING 50 OR MORE PERSONS AND IN ANY HAZARDOUS AREA OR GROUP H OCCUPANCY.

33. EVERY EXIT DOOR SHALL BE OPENABLE FROM INSIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. SPECIAL LOCKING DEVICES SHALL BE AN APPROVED TYPE.

34. MEANS OF EGRESS SHALL BE ILLUMINATED AT A MINIMUM INTENSITY OF 1-FOOT CANDLE AT THE FLOOR LEVEL.

35. MEANS OF EGRESS ILLUMINATED SHALL BE PROVIDED FROM AN EMERGENCY POWER SYSTEM.

36. TEMPORARY PEDESTRIAN PROTECTION SHALL BE PROVIDED AS REQUIRED BY SECTION 3317.

37. THE CONSTRUCTION SHALL NOT RESTRICT A 5-FOOT CLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITY (POWER POLES, PULL BOXES, TRANSFORMERS, VAULTS, PUMPS, METERS, ETC.) OR THE LOCATION OF THE HOOK-UP. THE CONSTRUCTION SHALL NOT BE WITHIN TEN FEET OF ANY POWER LINES-WHETHER OR NOT THE LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS AND OR ADDITIONAL EXPENSES.

38. EXIT SIGNS SHALL BE INTERNALLY OR EXTERNALLY ILLUMINATED. WHEN THE FACE OF AN EXIT SIGN IS ILLUMINATED FROM AN EXTERNAL SOURCE, IT SHALL HAVE AN INTENSITY OF NOT LESS THAN 5 FOOT CANDLES (54 lx) FROM EITHER OF TWO ELECTRIC LAMPS. INTERNALLY ILLUMINATED SIGNS SHALL PROVIDE EQUIVALENT LUMINANCE AND BE LISTED FOR THE PURPOSE. (1003.2.8.4)

39. THE EXIT SIGNS SHALL ALSO BE CONNECTED TO AN EMERGENCY ELECTRICAL SYSTEM PROVIDED FROM STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON-SITE GENERATOR SET, AND THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRICAL CODE. FOR HIGH-RISE BUILDINGS, SEE SECTION 403. (1003.2.8.5)

40. THE POWER SUPPLY FOR MEANS OF EGRESS ILLUMINATION SHALL NORMALLY BE PROVIDED BY THE PREMISES ELECTRICAL SUPPLY. IN THE EVENT OF POWER SUPPLY FAILURE, AN EMERGENCY ILLUMINATOR SHALL BE AUTOMATICALLY PROVIDED FROM AN EMERGENCY SYSTEM FOR GROUP 1, DIVISION 1.1 AND 1.2 OCCUPANCIES AND FOR ALL OTHER OCCUPANCIES WHERE THE MEANS OF EGRESS SYSTEM SERVES AN OCCUPANT LOAD OF 100 OR MORE.

41. HANDRAILS DOORS, WHEN FULLY OPENED, SHALL NOT REDUCE THE REQUIRED CORRIDOR WIDTH BY MORE THAN 7 INCHES. DOORS IN ANY POSITION SHALL NOT REDUCE THE REQUIRED WIDTH BY MORE THAN ONE HALF. THE WIDTH SHALL NOT BE REDUCED BY NON-STRUCTURAL PROJECTION BY MORE THAN 1-1/2" ON EITHER SIDE.

42. THE EXIT DOOR MUST OPEN OVER A LANDING NOT MORE THAN 1" BELOW THE THRESHOLD. EXCEPTION - PROVIDING THE DOOR DOES NOT SWING OVER THE LANDING, LANDING SHALL NOT BE MORE THAN 8" BELOW THRESHOLD.

Note: "Art in Public Places" will be satisfied by a payment in lieu of the Art Work

PERVIOUS SURFACE AND SITE COVERAGE WORKSHEET
LOT AREA (GROSS): 83,999 SQ. FT. (INCLUDES EASEMENTS)
LOT AREA (NET): 45,365 SQ. FT. (DEDUCTS EASEMENTS)

PROPOSED:
FOOTPRINT OF BUILDINGS: 21,189 SQ. FT.
PARKING LOT: 18,619 SQ. FT.
WALKS / HARDSCAPE: 1,479 SQ. FT.

TOTAL PROPOSED IMPERVIOUS SURFACES: 33,634 SQ. FT.
TOTAL IMPERVIOUS SURFACES: 33,634 SQ. FT. / LOT SIZE - 83,999 SQ. FT. IMPERVIOUS = 40% IMPERVIOUS
% OF SITE PERVIOUS SURFACES: 50,365 SQ. FT. TOTAL PERVIOUS / LOT SIZE 83,999 SQ. FT. = 60% PERVIOUS

SITE COVERAGE
LOT SIZE: 83,999 SQ. FT.

BUILDING FOOTPRINT: 21,189 SQ. FT.

TOTAL PROPOSED SITE COVERAGE: 21,189 SQ. FT.
% OF SITE COVERAGE: 21,189 SQ. FT. TOTAL / 83,999 SQ. FT. LOT SIZE = 25.2% SITE COVERAGE

FLOOR AREA RATIO: 70,785 SQ. FT. FLOOR AREA (COMMERCIAL + RESIDENTIAL) / 45,365 SQ. FT. (NET LOT AREA) = 1.55:1

Unit Type / Count

Description	Count
Plan A (1-Bedroom / 1-Bath)	6
Plan B (1-Bedroom / 1-Bath)	6
Plan C (2-Bedroom / 2-Bath)	6
Plan C - Alt. (2-Bedroom / 2-Bath)	3
Plan D (1-Bedroom / 1.5-Bath)	3
Plan E (1-Bedroom / 1.5-Bath)	3
Plan F (1-Bedroom / 1-Bath)	3
Plan G (2-Bedroom / 2-Bath)	3
Plan H (1-Bedroom / 1-Bath)	6
Plan I Studio (Studio / 1-Bath)	3
Unit Totals	42

Area Schedule_Unit Plans-Typical

Name	Area	Level
Plan A	729 SF	2nd Story
Plan B	703 SF	2nd Story
Plan C	950 SF	2nd Story
Plan C-Alt.	935 SF	2nd Story
Plan D	1046 SF	2nd Story
Plan E	936 SF	2nd Story
Plan F	820 SF	2nd Story
Plan G	921 SF	2nd Story
Plan H	723 SF	2nd Story
Plan I	723 SF	2nd Story
Grand total	8487 SF	

Parking Schedule (Provided Total)

Description	Count
Commercial A.D.A.	1
Commercial Standard	5
Guest Parking	5
Residential A.D.A.	2
Residential A.D.A. (Covered)	2
Residential Standard	12
Residential Standard (Covered)	43
Grand total	70

Area Schedule Lot Coverage (Impervious-Pervious)

Name	Area
Building Footprint Commercial	1732 SF
Building Footprint Residential	18901 SF
Impervious Parking Lot	11196 SF
Impervious Walkway	1902 SF
Landscape	41945 SF
Pervious Paver	8296 SF
Grand total	83971 SF

Bicycle Parking Provided

Description	Count
Bike Stall (Long Term)	44
Bike Stall (Short Term)	4
Total Stalls	48

Open Space:
Required Open Space: (150 s.f./Unit) = 150 x 42 = 6,300 s.f.
Provided Open Space:
1. Recreation Room: 1,059 s.f. (includes Kitchen/Lounge)
2. Court Yard (Open Area): 2,553 s.f.
3. Private Balconies @ Ea. Unit: 1,512 s.f. (6' x 6' Min.) 36 s.f. x 42 U
4. Outdoor Patio & Landscaping: 2,500 s.f.
Total Provided: 7,624 s.f.

** Maximum Private Open Space = 30% (0.30 x 6,300 = 1,890 s.f. max. allowed)

Area Schedule (Total Gross Building)

Name	Area
A-3 Occupancy - Court Yard	2644 SF
A-3 Occupancy - Recreation Room	1106 SF
Area	18959 SF
B Occupancy - Lobby#1	2683 SF
B Occupancy - Lobby#2	847 SF
B Occupancy - Mail Room	89 SF
B Occupancy - Office	203 SF
Elevators	667 SF
R-2 Occupancy - Corridors	4801 SF
R-2 Occupancy - Deck/Balcony	3917 SF
R-2 Occupancy - Units	35638 SF
S-2 Occupancy - Electrical Room	167 SF
S-2 Occupancy - Low Voltage	207 SF
S-2 Occupancy - Parking Garage	14738 SF
S-2 Occupancy - Storage	280 SF
S-2 Occupancy - Trash Room	226 SF
S-2 Occupancy - Trash/Recycle Room	288 SF
Stairs	1728 SF
	89168 SF

Area Schedule (CBC Floor Area)

Name	Area
A-3 Occupancy - Court Yard	2644 SF
A-3 Occupancy - Recreation Room	1059 SF
B Occupancy - Lobbies	3412 SF
B Occupancy - Mail Room	64 SF
B Occupancy - Office	185 SF
Elevators	592 SF
R-2 Occupancy - Corridors	4809 SF
R-2 Occupancy - Deck/Balcony	3922 SF
R-2 Occupancy - Units	34764 SF
S-2 Occupancy - Electrical Room	151 SF
S-2 Occupancy - Low Voltage	193 SF
S-2 Occupancy - Parking Garage	14526 SF
S-2 Occupancy - Storage	257 SF
S-2 Occupancy - Trash Room	214 SF
S-2 Occupancy - Trash/Recycle Room	266 SF
Stairs	1583 SF
	68657 SF

Area Schedule (Commercial Building - Gross Areas)

Name	Area
B Commercial Area	2226 SF
Grand total	2226 SF

Area Schedule (Commercial Building CBC Floor Area)

Name	Area
B Commercial Area	2128 SF
Grand total	2128 SF

KEN STOCKTON ARCHITECTS, INC.
DESIGN ≈ PLANNING
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Client
Raznick & Sons

Project
Park Sorrento Mixed-Use
23480 Park Sorrento, Calabasas, CA 91302

Consultants

Architect
Ken Stockton
26500 W. Agoura Road #603
Calabasas, CA 91302
(818)-858-9443

Geo/Soils
GeoConcepts, Inc.
14428 Hamlin St #200
Van Nuys, CA 91401
(818)-994-8895

Surveyor
Chris Nelson & Assoc, Inc
31238 Via Colinas, Suite C
Westlake Village, CA 91362
(818)-991-1040

Landscape Architect
L.A. Group Design Works
24013 Ventura Blvd, Suite 201
Calabasas, CA 91302
(818)-251-9718

Civil Engineer
P.C.C.E. Inc
Steve Smith
(818)-222-7982

Arborist
Kay J Greeley
284 Valley Gate Rd
Simi Valley, CA 93065
(805)-577-8432

Date	Description	Issued to

LICENSED REPRESENTATIVE

Preliminary Plans

Architectural Site Plan

Date: 03-17-2014
Drawn By: R.K.S. / R.V.B.
Checked By: K.E.S.

A101

Scale: As indicated

7/21/2016 10:34:11 AM

ASSOCIATED TRANSPORTATION ENGINEERS

PROJECT SITE PLAN

FIGURE 2

MMF - #15011

N

NOT TO SCALE

Source: Google Earth

ASSOCIATED
TRANSPORTATION
ENGINEERS

DRIVEWAY SIGHT DISTANCE

FIGURE 3

MMF - #15011

Associated Transportation Engineers
Trip Generation Worksheet

PARK SORRENTO MIXED-USE PROJECT								
Land-Use	**Size**	**Pass-By Factor**	**ADT**		**A.M.**		**P.M.**	
			Rate	**Trips**	**Rate**	**Trips**	**Rate**	**Trips**
PROPOSED USES								
Senior Apartments(a)	42	1.00	3.44	144	0.20	8	0.25	11
Office(b)	1,620	1.00	11.03	18	1.56	3	1.49	2
Subtotals				162		11		13
EXISTING USES								
Office(c)	23,400	1.00	11.03	258	1.24	29	1.11	26
Net Trip Generation				**-96**		**-18**		**-13**

(a) ITE Senior Housing rates (Land Use Code #252).

(b) ITE General Office rates (Land Use Code #710).

(c) A.M. & P.M. rates from counts of existing office use. ADT rate from ITE General Office (Land Use Code #710).

Associated Transportation Engineers
Trip Generation Worksheet

PARK SORRENTO MIXED-USE PROJECT - with BANK USE								
Land-Use	**Size**	**Pass-By Factor**	**ADT**		**A.M.**		**P.M.**	
			Rate	**Trips**	**Rate**	**Trips**	**Rate**	**Trips**
PROPOSED USES								
Senior Apartments(a)	42	1.00	3.44	144	0.20	8	0.25	11
Bank(b)	1,620	0.75	150.00	182	6.00	7	12.13	15
Subtotals				326		15		26
EXISTING USES								
Office(c)	23,400	1.00	11.03	258	1.24	29	1.11	26
Net Trip Generation				**68**		**-14**		**0**

(a) ITE Senior Housing rates (Land Use Code #252).

(b) SANDAG rates for ADT and A.M. peak hour since no ITE rates. ITE Walk-In Bank rate for P.M. peak hour (Land Use Code #911).

(c) A.M. & P.M. rates from counts of existing office use. ADT rate from ITE General Office (Land Use Code #710).

Prepared by NDS/ATD

VOLUME

23480 Park Sorrento

Day: Wednesday
Date: 5/4/2016

City: Calabasas
Project #: CA16_5291_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,075	2,965	6,040

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		2		5		12:00			42		56		98	
00:15			2		1		3		12:15			39		51		90	
00:30			3		2		5		12:30			34		53		87	
00:45			1	9	1	6	2	15	12:45			50	165	83	243	133	408
01:00			3		0		3		13:00			52		67		119	
01:15			0		1		1		13:15			45		51		96	
01:30			2		1		3		13:30			46		53		99	
01:45			1	6	1	3	2	9	13:45			59	202	39	210	98	412
02:00			0		0		0		14:00			57		42		99	
02:15			0		0		0		14:15			67		32		99	
02:30			0		1		1		14:30			63		53		116	
02:45			0		0	1	0	1	14:45			63	250	55	182	118	432
03:00			1		0		1		15:00			48		50		98	
03:15			0		0		0		15:15			50		79		129	
03:30			0		0		0		15:30			57		69		126	
03:45			1	2	1	1	2	3	15:45			80	235	62	260	142	495
04:00			0		0		0		16:00			87		60		147	
04:15			0		0		0		16:15			84		70		154	
04:30			0		0		0		16:30			73		53		126	
04:45			1	1	0		1	1	16:45			63	307	58	241	121	548
05:00			0		2		2		17:00			68		62		130	
05:15			2		0		2		17:15			70		60		130	
05:30			4		9		13		17:30			66		73		139	
05:45			16	22	3	14	19	36	17:45			67	271	35	230	102	501
06:00			8		7		15		18:00			67		50		117	
06:15			9		7		16		18:15			74		55		129	
06:30			20		14		34		18:30			69		68		137	
06:45			28	65	19	47	47	112	18:45			61	271	50	223	111	494
07:00			52		22		74		19:00			48		37		85	
07:15			39		32		71		19:15			42		33		75	
07:30			55		42		97		19:30			34		45		79	
07:45			47	193	69	165	116	358	19:45			34	158	40	155	74	313
08:00			59		54		113		20:00			38		30		68	
08:15			52		48		100		20:15			24		27		51	
08:30			56		63		119		20:30			33		17		50	
08:45			52	219	59	224	111	443	20:45			17	112	16	90	33	202
09:00			41		48		89		21:00			30		21		51	
09:15			40		49		89		21:15			15		13		28	
09:30			34		38		72		21:30			16		18		34	
09:45			35	150	62	197	97	347	21:45			15	76	13	65	28	141
10:00			29		46		75		22:00			10		15		25	
10:15			40		53		93		22:15			14		4		18	
10:30			29		38		67		22:30			6		2		8	
10:45			47	145	47	184	94	329	22:45			3	33	4	25	7	58
11:00			34		37		71		23:00			4		2		6	
11:15			45		42		87		23:15			4		4		8	
11:30			28		48		76		23:30			6		3		9	
11:45			55	162	62	189	117	351	23:45			7	21	1	10	8	31
TOTALS				974		1031		2005	TOTALS				2101		1934		4035
SPLIT %				48.6%		51.4%		33.2%	SPLIT %				52.1%		47.9%		66.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,075	2,965	6,040

AM Peak Hour			08:00	07:45	07:45	PM Peak Hour			15:45	15:15	15:30
AM Pk Volume			219	234	448	PM Pk Volume			324	270	569
Pk Hr Factor			0.928	0.848	0.941	Pk Hr Factor			0.931	0.854	0.924
7 - 9 Volume	0	0	412	389	801	4 - 6 Volume	0	0	578	471	1049
7 - 9 Peak Hour			08:00	07:45	07:45	4 - 6 Peak Hour			16:00	16:45	16:00
7 - 9 Pk Volume	0	0	219	234	448	4 - 6 Pk Volume	0	0	307	253	548
Pk Hr Factor	0.000	0.000	0.928	0.848	0.941	Pk Hr Factor	0.000	0.000	0.882	0.866	0.890

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

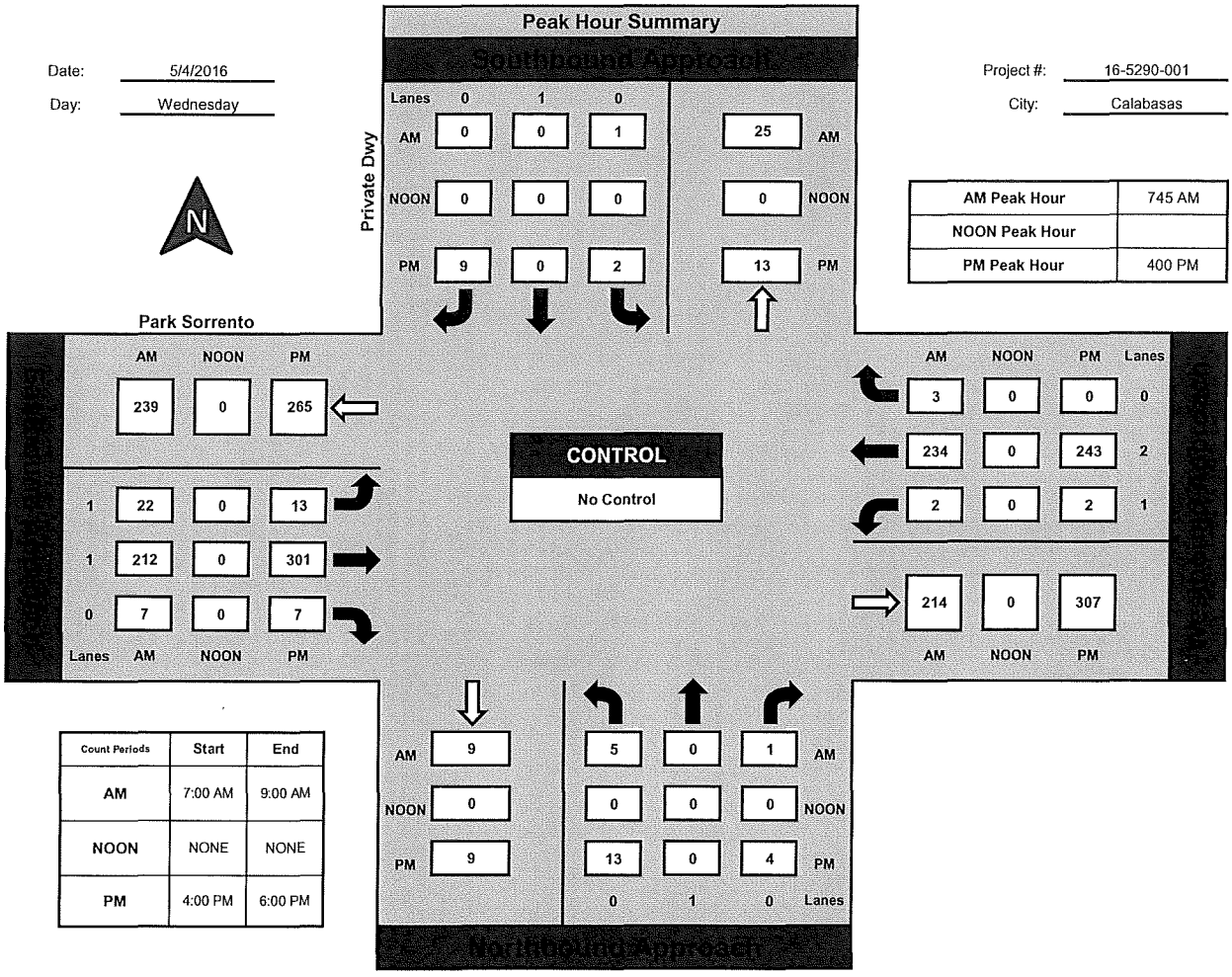
Private Dwy and Park Sorrento , Calabasas

Date: 5/4/2016

Day: Wednesday

Project #: 16-5290-001

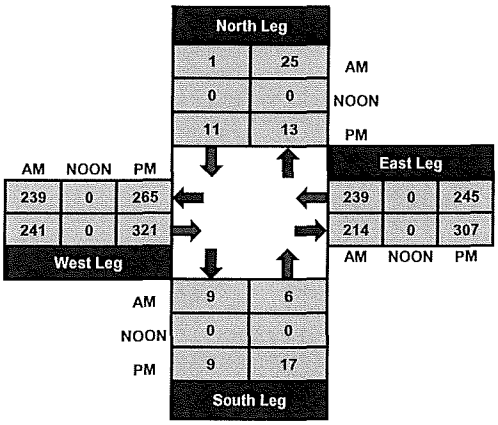
City: Calabasas



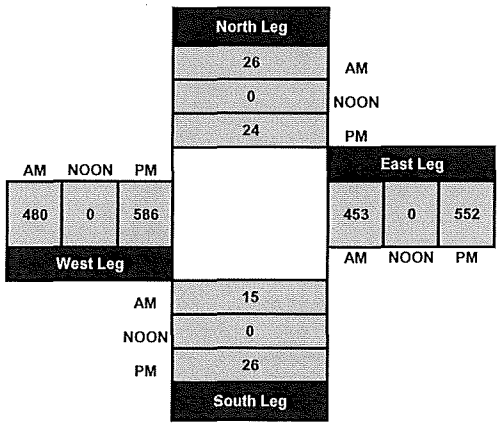
AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5290-001 **Day:** Wednesday

City: Calabasas **Date:** 5/4/2016

AM

NS/EW Streets:	Private Dwy			Private Dwy			Park Sorrento			Park Sorrento			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	1	0	1	2	0	
7:00 AM	4	0	0	0	0	0	2	47	5	0	22	1	81
7:15 AM	2	0	1	1	0	0	3	44	2	1	31	0	85
7:30 AM	2	0	0	1	0	0	0	47	5	0	38	0	93
7:45 AM	1	0	0	0	0	0	2	52	4	2	70	2	133
8:00 AM	3	0	1	0	0	0	4	53	2	0	54	0	117
8:15 AM	0	0	0	1	0	0	8	55	1	0	45	0	110
8:30 AM	1	0	0	0	0	0	8	52	0	0	65	1	127
8:45 AM	1	0	0	0	0	0	7	53	0	0	58	0	119
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	14	0	2	3	0	0	34	403	19	3	383	4	865
APPROACH %'s :	87.50%	0.00%	12.50%	100.00%	0.00%	0.00%	7.46%	88.38%	4.17%	0.77%	98.21%	1.03%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	5	0	1	1	0	0	22	212	7	2	234	3	487
PEAK HR FACTOR :	0.375			0.250			0.941			0.807			0.915

UTURNS

NB	SB	EB	WB
		1	
		2	
		0	
		1	
		0	
		3	
		2	
		0	

NB	SB	EB	WB
0	0	9	0

CONTROL : No Control

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5290-001 **Day:** Wednesday

City: Calabasas **Date:** 5/4/2016

PM

NS/EW Streets:	Private Dwy			Private Dwy			Park Sorrento			Park Sorrento			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	1	0	1	2	0	
4:00 PM	4	0	0	0	0	3	1	86	1	0	64	0	159
4:15 PM	6	0	0	1	0	2	4	87	3	1	65	0	169
4:30 PM	2	0	3	1	0	3	5	65	1	1	56	0	137
4:45 PM	1	0	1	0	0	1	3	63	2	0	58	0	129
5:00 PM	2	0	0	2	0	3	0	64	0	1	57	0	129
5:15 PM	1	0	0	1	0	4	1	69	0	0	63	0	139
5:30 PM	4	0	0	0	0	1	2	66	2	2	66	0	143
5:45 PM	4	0	0	1	0	2	2	65	0	0	38	1	113
TOTAL VOLUMES :	24	0	4	6	0	19	18	565	9	5	467	1	1118
APPROACH %'s :	85.71%	0.00%	14.29%	24.00%	0.00%	76.00%	3.04%	95.44%	1.52%	1.06%	98.73%	0.21%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	13	0	4	2	0	9	13	301	7	2	243	0	594
PEAK HR FACTOR :	0.708			0.688			0.854			0.928			0.879

CONTROL : No Control

UTURNS			
NB	SB	EB	WB
		1	0
		1	0
		0	0
		0	0
		0	1
		0	0
		0	1
		0	0
NB	SB	EB	WB
0	0	2	2

Spot Speed Study

Prepared by: Associated Transportation Engineers

DATE: 2/19/2015
DAY: Monday

Location: Park Sorrento @ Project Site
Posted Speed: 35 MPH

Project #: 15011

Spot Speeds

Speed mph	ALL Vehicles
<=10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	1
21	1
22	2
23	1
24	2
25	5
26	9
27	6
28	9
29	12
30	12
31	13
32	9
33	6
34	5
35	4
36	3
37	2
38	
39	
40	
41	
42	1
43	
44	
45	
46	
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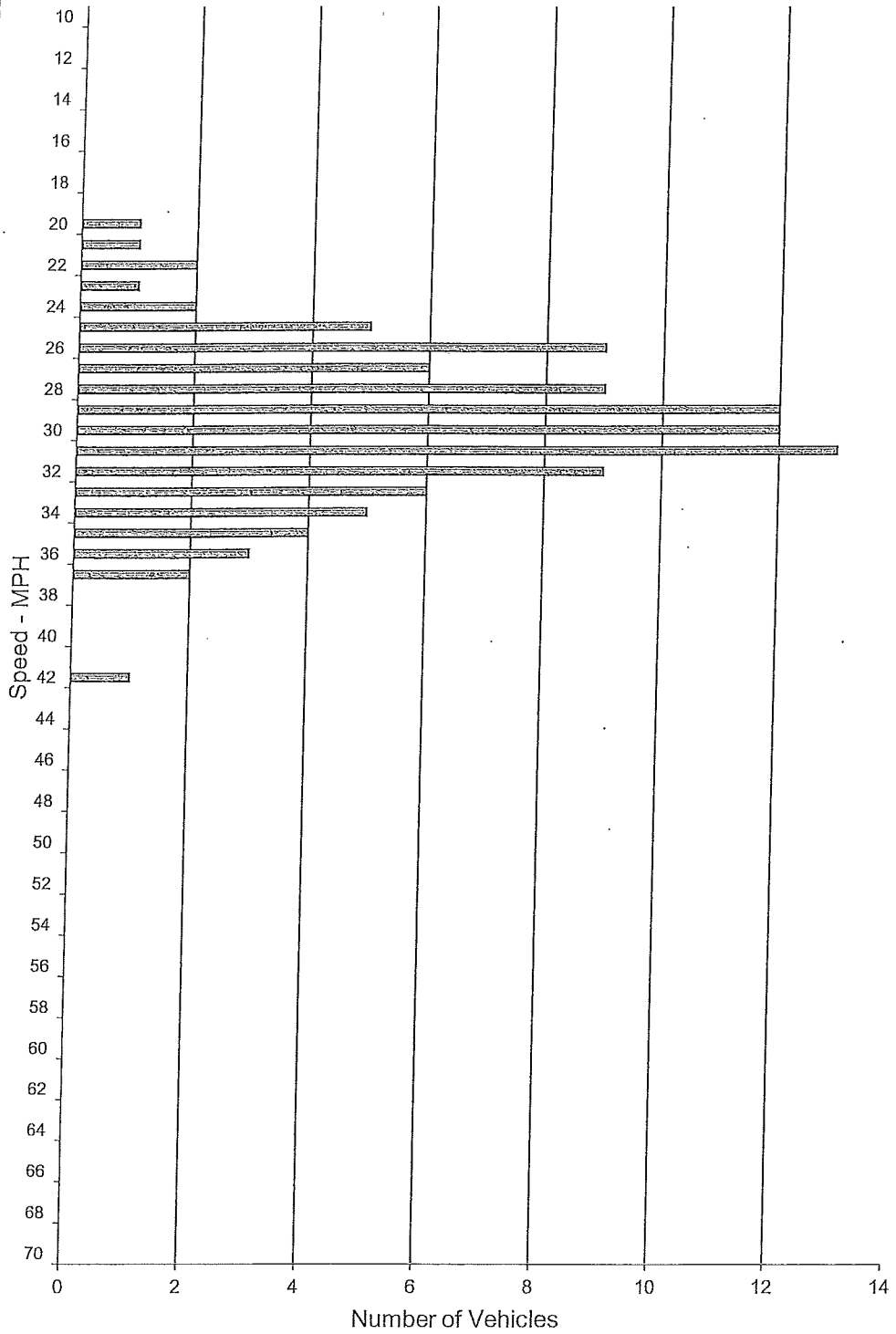
69	
>=70	



SPEED PARAMETERS										
Class	Count	Average Speed	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	# / % Below Pace	# / % Above Pace
ALL	103	29.7	20 - 42	30 mph	33 mph	25 - 34	86	83%	6% / 7	10% / 10

#15011.00 PARK SORRENTO MIXED-USE PROJECT

LOCAL PARKING STUDIES FOR SENIOR APARTMENTS

SITE	LOCATION	TOTAL UNITS	PEAK DEMAND	RATE PER UNIT
SHEPARD PLACE,	Carpinteria	169	148	0.88
CYPRESS MEADOWS	Ventura	104	84	0.81
RANCHO FRANCISCAN	Santa Barbara	111	106	0.95
AVERAGE:				**0.88**

HEXAGON TRANSPORTATION CONSULTANTS, INC.

MEMORANDUM

TO: Demetri Loukas

FROM: Robert Del Rio

DATE: March 27, 2008

SUBJECT: Results of Parking Demand Surveys for Senior Housing Developments

This memorandum summarizes findings of parking demand analysis conducted for senior housing developments in the Bay Area. Hexagon Transportation Consultants has recently completed several parking occupancy surveys throughout the Bay Area. The purpose of the parking occupancy surveys is to formulate a recommendation on the number of parking spaces that would be required to accommodate parking demands for senior housing developments. Our findings are summarized below.

Parking Surveys

Five senior housing developments have been surveyed in San Jose, Pleasanton, and San Mateo. The Parking Generation Manual published by the Institute of Transportation Engineers (ITE) is the most widely used data source for empirically derived parking data associated with the most common land use types. However, very limited parking data are published for senior apartment developments. The surveyed parking supply and demand for each of the facilities is presented in Table 2.

Table 2
Parking Demand and Supply at Senior Apartments in Bay Area

Facility	City	Minimum Age	Units offered at:	Number of Units	Parking Supply	Parking Demand	Parking Supply Rate	Parking Demand Rate
Site A [1]	Huntington Beach	n/a	n/a	46	55	23	1.20	0.50
Site B [1]	Huntington Beach	n/a	n/a	91	127	30	1.40	0.33
Stratford	San Mateo	65+	Market Rate	67	96	63	1.43	0.94
Peninsula Regent	San Mateo	65+	Market Rate	207	240	177	1.16	0.86
The Gardens	Pleasanton	62+	50% Market Rate 50% Affordable	172	125	123	0.73	0.72
Craig Gardens	San Jose	55+	Affordable	90	64	47	0.71	0.52
Le Mirador	San Jose	55+	Market Rate	140	98	73	0.70	0.52
Totals				**813**	**806**	**536**	**0.99**	**0.66**
Totals Local Data (San Mateo, Pleasanton and San Jose)				**676**	**623**	**483**	**0.92**	**0.71**

[1] *ITE Parking Generation Manual, 3rd Edition - Land Use 252*

Table 2 shows that the actual parking demand at all but one of the surveyed facilities is significantly lower than the parking supply. Only at The Gardens in Pleasanton is the parking demand close to the supply. The

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phone 408.846.7410 • fax 408.846.7418 • www.hextrans.com

survey data showed higher parking rates at the two senior housing developments in the City of San Mateo where the units are offered at market rates and are occupied by more affluent residents that typically have higher auto ownership levels. The parking demand rates at the two San Jose developments (Le Mirador and Craig Gardens) are identical, 0.52 occupied spaces per unit. The parking demand rate of the surveyed housing developments varies greatly, from 0.94 to 0.33 spaces per unit. The average parking supply is just under one space per unit and the average parking demand is 0.66 spaces per unit, or two thirds of the supply. Based on the local data, the average supply and demand rates are 0.92 and 0.71 spaces per unit, respectively.

Recommended Parking Spaces

The survey data suggests that senior housing developments, which consist of units that are offered at market rate, have a higher parking demand compared to those with affordable units. Other surveys have shown a strong correlation between household income and auto-ownership. The auto-ownership of residents with higher incomes is statistically higher compared to residents with low-income levels. Therefore, affordable senior housing developments, which are intended for residents with low or moderate income levels, require fewer parking spaces compared to market rate developments.

It is our recommendation to use a rate of 0.60 spaces per unit as the basis to calculate the number of parking spaces for affordable senior apartment development. However, the number of parking spaces to be provided needs to exceed the estimated peak demand. A peak-demand factor should be applied to account for the daily variation in parking demand. It is recommended to increase the average surveyed rate of 0.60 spaces per unit by ten percent to provide for daily fluctuations in parking demand. Therefore, it is recommended to use a parking rate of 0.66 spaces per unit for affordable senior housing developments. This estimate is conservative since it is higher than the observed rate at the affordable Craig Gardens complex and is only slightly lower than rate at The Gardens in Pleasanton where 50% of the units are offered at market rates.

APPENDIX J

Response to Comments