



A G E N D A

Special Meeting of the Scotts Valley Planning Commission

Date: November 9, 2017

Time: 6:00 PM

CITY OF SCOTTS VALLEY 1 Civic Center Drive Scotts Valley, CA 95066 (831) 440-5630	MEETING LOCATION City Council Chambers 1 Civic Center Drive Scotts Valley, CA 95066	POSTING: The agenda was posted on October 6, 2017, at City Hall, SV Senior Center, SV Library and on the Internet at www.scottsvalley.org .
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Appointed Officials	City Staff Members
Derek Timm, Chair Carlos Arcangeli, Vice Chair Robin Donovan, Commissioner Rosanna Herrera, Commissioner Deborah Muth, Commissioner	Taylor Bateman, Acting Community Development Director Michelle Edwards, Senior Planner Brenda Stevens, Assistant Planner

Notice regarding Planning Commission Meetings:

The Planning Commission meets regularly on the 2nd Thursday of each month (unless otherwise noticed) at 6:00 pm in the City Hall Council Chambers located at 1 Civic Center Drive, Scotts Valley, CA 95066.

Agenda and Agenda Packet Materials:

The Planning Commission agenda is available for review the Friday before the Thursday meeting on the Internet at the City's website: www.scottsvalley.org and in the lobby of City Hall at 1 Civic Center Drive, Scotts Valley, CA. Pursuant to Government Code §54957.5, materials related to an agenda item, submitted after distribution of the agenda packet, are available for public inspection in the lobby of City Hall during normal business hours, Monday-Friday, 8am-12 pm and 1-5 pm. In accordance with AB 1344, such documents will be posted on the City's website at www.scottsvalley.org.

CALL TO ORDER 6:00 PM

(The Planning Commission Chair calls the meeting to order.)

PLEDGE OF ALLEGIANCE and MOMENT OF SILENCE

(The Planning Commission Chair leads the pledge of allegiance.)

ROLL CALL

(Planning Department staff conduct roll call of the Planning Commission.)

PUBLIC COMMENT TIME

This is the opportunity for individuals to make and/or submit written or oral comments to the Commission on any items within the purview of the Commission, which are NOT part of the Agenda. No action on the item may be taken, but the Commission may request the matter be placed on a future agenda.

ALTERATIONS TO CONSENT AGENDA

(The Commission can remove or add items to the Consent Agenda.)

CONSENT AGENDA

(The Consent Agenda is comprised of items which appear to be non-controversial. Persons wishing to speak on any items may do so raising their hand to be recognized by the Chair. These items will be acted upon in one motion unless they are removed from the consent agenda for discussion by the Commission.)

- A. Approve the Action Meeting Minutes from the October 12, 2017, meeting.

ALTERATIONS TO PUBLIC HEARING AGENDA

(Commission can remove or add items to the Regular Agenda.)

PUBLIC HEARING AGENDA

(Persons wishing to speak on any item may do so by raising their hand to be recognized by the Chair.)

1. **Project Name:** Amendments to the City's Firearm Regulations

Address: City-wide

Applicant: City of Scotts Valley

Planning Permit Application No.: AZO17-002

Project Description: Consideration of recommendation of approval to the City Council of Amendments to the Zoning Ordinance (Section 17.04.090, Definitions, "F" terms; Section 17.20.030, Conditional uses in C-S Service Commercial Zoning District Regulations; and, Section 17.22.030, Conditional uses in C-SC shopping Center Commercial Zoning District Regulations, Title 17, Zoning, of the Scotts Valley Municipal Code) to require a use permit for new firearm retail, firearm repair service, and related uses.

Staff: Steve Walpole, Police Chief, 831-440-5649, swalpole@scottsvalley.org

2. **Project Name:** Bay Mountain Mixed-use

Address / APN: 4803 Scotts Valley Drive / 022-082-76

Applicant / Property Owner: Robert Kim

Planning Permit Application Nos.: U17-002, DR17-003, DR17-004,

Project Description: Consideration of a Use Permit, Design Review, Sign Design Review, and reduced (shared) parking to allow a mixed-use development on a 0.41-acre site in the C-S Service Commercial Zone. The project proposes a

new three-story building with approximately 1,800 square feet of ground floor retail space; 2,530-square feet of second floor office space; and six apartment units on the third floor. Site improvements and amenities include: 19 parking stalls, landscaping, enclosed trash, recycling area, bicycle parking, and a public art feature.

Staff: Scott Harriman, Contract Planner, skharriman@sbcglobal.net

3. **The following project was continued from the October 12, 2017 meeting. The project will NOT be discussed until a future date, in order to allow the applicant additional time to prepare revised plans and additional documentation, as requested by the Planning Commission. The project is tentatively scheduled for the December 14, 2017 meeting. The project will be re-noticed.**

~~**Title:** Shell Gasoline Station~~

~~**Address:** One Hacienda Drive~~

~~**Applicant / Property Owner:** Peninsula Petroleum, LLC~~

~~**Planning Permit Application Nos.:** U16-005, DR16-014 & 015~~

~~**Project Description:** Consideration of Use Permit and Design Review applications to demolish an existing convenience store and build a new store and new self-serve drive thru car wash, including new signage.~~

~~**Staff:** Brenda Stevens, Asst. Planner, 831-440-5635, bstevens@scottsvalley.org~~

REGULAR AGENDA

(Persons wishing to speak on any item may do so by raising their hand to be recognized by the Chair.)

ALTERATIONS TO REGULAR AGENDA

(Commission can remove or add items to the Regular Agenda.)

DISCUSSION ITEMS AND FUTURE AGENDA ITEMS

(The Planning Commission or Community Development Director may request to schedule items on future agendas.)

WRITTEN COMMUNICATIONS – FOR INFORMATION ONLY

(City Council Minutes or other items are provided if available.)

DIRECTOR UPDATES

(The Acting Community Development Director may provide any department or city updates that are available.)

ADJOURNMENT

(Adjournment shall be no later than 11:00 PM unless extended by a four-fifths vote of all Planning Commission members or a unanimous vote of the members present per City Municipal Code Section 2.21.010.)

The City of Scotts Valley does not discriminate against persons with disabilities. The City Council Chambers is an accessible facility. If you wish to attend a Planning Commission meeting and require assistance such as sign language, a translator, or other special assistance or devices in order to attend and participate at the meeting, please call the Community Development Department at (831) 440-5630 five to seven days in advance of the meeting to make arrangements for assistance. If you require the agenda of a Planning Commission meeting be available in an alternative format consistent with a specific disability, please call the Community Development Department. The California State Relay Service (TTY/VCO/HCO to Voice: English 1-800-735-2929, Spanish 1-800-855-3000; or, Voice to TTY/VCO/HCO: English 1-800-735-2922, Spanish 1-800-855-3000), provides Telecommunications Devices for the Deaf and Disabled and will provide a link between the TDD caller and users of telephone equipment.

PROCEDURAL INFORMATION FOR THE PUBLIC

THE FOLLOWING IS THE PROCEDURE THAT THE COMMISSION SHOULD TAKE IN APPROVAL OF A RESOLUTION:

1. Move the Resolution number for approval.
2. Second the motion.
3. Vote by body; a roll call vote is not required.

THE FOLLOWING IS THE PROCEDURE THAT THE COMMISSION SHOULD TAKE IN INTRODUCTION/ADOPTION OF AN ORDINANCE:

1. Move the Ordinance number for introduction (or adoption).
2. Move the Ordinance be introduced by title only and waive the reading of the text.
3. Read the Ordinance title.
4. Second the motion.
5. Vote by body; a roll call vote is not required.

THE FOLLOWING IS THE PROCEDURE THAT THE COMMISSION SHOULD TAKE IN PUBLIC COMMENT/PUBLIC HEARINGS:

Unless otherwise determined by the presiding officer of the meeting:

1. Three minutes allowed per individual to speak.
2. Five minutes allowed per individual representing a group of three or more.



Minutes

Special Meeting of the Scotts Valley Planning Commission

Date: October 12, 2017

Time: 6:00 PM

CITY OF SCOTTS VALLEY 1 Civic Center Drive Scotts Valley, CA 95066 (831) 440-5630	MEETING LOCATION City Council Chambers 1 Civic Center Drive Scotts Valley, CA 95066	POSTING: The agenda was posted at City Hall, SV Senior Center, SV Library and on the Internet at www.scottsvalley.org .
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Appointed Officials	City Staff Members
Derek Timm, Chair Carlos Arcangeli, Vice Chair Robin Donovan, Commissioner Rosanna Herrera, Commissioner Deborah Muth, Commissioner	Taylor Bateman, Acting Community Development Dir. Michelle Edwards, Senior Planner Brenda Stevens, Assistant Planner

CALL TO ORDER: Meeting called to order at 6:05 p.m.

PLEDGE OF ALLEGIANCE and MOMENT OF SILENCE: The Planning Commission Chair led the pledge of allegiance.

ROLL CALL: Present: Timm, Arcangeli, Donovan, Herrera and Muth.

PUBLIC COMMENT: None.

ALTERATIONS TO CONSENT AGENDA: None.

CONSENT AGENDA: The Commission approved the minutes in one motion.

Action Meeting Minutes from the August 17, 2017 meeting.

M/S: Arcangeli/Donovan

To approve Consent Agenda.

Carried: 4/0/0 (AYES: Arcangeli, Donovan, Herrera, Muth, Timm; NOES: None;

ABSENT: None

ALTERATIONS TO REGULAR AGENDA: None

PUBLIC HEARING:

1. **Title:** Shell Gasoline Station
Address: One Hacienda Drive
Applicant / Property Owner: Peninsula Petroleum, LLC
Planning Permit Application Nos.: U16-005, DR16-014 & 015
Project Description: Consideration of a Use Permit application to demolish an existing convenience store and build a new store and new drive-thru car wash and a Design Review application for a new convenience store, car wash and signage of the existing gas station.
Planner: Brenda Stevens, Assistant Planner

M/S: Donovan/Herrera
To continue Use Permit and Design Reviews, U16-005, DR16-014 & 015 to: allow for the traffic engineer and acoustical engineer to be present to answer traffic and noise study questions; gather additional data regarding site circulation and auto stacking for the car wash queuing area; provide additional data on car wash time of use; address acoustical issues along Hacienda drive by providing fencing; address acoustical issues for uphill residences with ideas to improve fencing at the rear property line; and require staff to re-notice the project prior to the next meeting date.
Carried: 4/1/0 (AYES: Arcangeli, Donovan, Herrera, Timm; NOES: Muth; ABSENT: None)

2. **Title:** Amendments to City's Marijuana Regulations per State Law
Address: City-wide Residences
Applicant: City of Scotts Valley
Planning Permit Application No: AZO17-001
Project Description: Consideration of recommendation of approval to the City Council of Amendments to the Zoning Ordinance (Section 17.64.020 of Chapter 17.64, Marijuana and Cultivation, of Title 17, Zoning) of the Scotts Valley Municipal Code to allow indoor cannabis cultivation of up to six (6) plants for personal use, per State law, pursuant to the California Compassionate Use Act, the California Medical Cannabis Regulation and Safety Act ("MCRSA"), the Adult Use of Marijuana Act ("AUMA"), SB 94 and the Medicinal and Adult Use Cannabis Regulation and Safety Act ("MAUCRSA").
Staff: Steve Walpole, Police Chief

M/S: Muth/Arcangeli
To approve Amendments to the Zoning Ordinance AZ017-001 via Resolution No. 1721 Carried: 4/1/0 (AYES: Arcangeli, Donovan, Muth, Timm; NOES: Herrera; ABSENT: None)

REGULAR AGENDA: None

DISCUSSION ITEMS AND FUTURE AGENDA ITEMS: None.

WRITTEN COMMUNICATIONS – FOR INFORMATION ONLY: None.

DIRECTOR UPDATES: None.

ADJOURNMENT: 7:12pm.

**City of Scotts Valley
PLANNING COMMISSION
STAFF REPORT**

Date: November 9, 2017

Applicant: City of Scotts Valley

Location: City-wide

General Plan: Commercial consisting of two land use designations:
Service Commercial and Shopping Center Commercial

Zoning: C-S and C-SC

Environmental Status: Exempt from the California Environmental Quality Act (CEQA) per CEQA Guidelines Sections 15060(c)(2), (no foreseeable change in the physical environment), 15060(c)(3) (activity is not a CEQA project), and 15061(b)(3) (no potential for a significant effect on the environment).

Request: Consideration of recommendation of approval to the City Council of Amendments to the Zoning Ordinance (Section 17.04.090, "F" terms, of Chapter 17.04, Definitions; Section 17.20.030, Conditional uses, Chapter 17.20, C-S Service Commercial Zoning District Regulations; and, Section 17.22.030, Conditional uses, Chapter 17.22, C-SC Service Commercial Zoning District Regulations, of Title 17, Zoning of the Scotts Valley Municipal Code) to require a use permit for firearms retail, firearms repair service, and related uses.

Staff Contact: Steve Walpole, Police Chief, (831) 440-5651, swalpole@scottsvalley.org

STAFF RECOMMENDATION

It is recommended the Planning Commission conduct a public hearing, hear public testimony, and recommend to the City Council of the City of Scotts Valley approval of Zoning Ordinance Amendment AZO17-002, per the Resolution, and Ordinance No. 16-189.3, attached to this staff report.

DISCUSSION

On October 4, 2017, at a regularly scheduled City Council meeting, staff requested that the City Council provide policy direction regarding firearms dealer permits and the regulation of firearms retailers. A copy of the October 4th City Council Meeting Minutes

and Staff Report are attached to this report. At the meeting, the City Council directed staff to amend the existing Firearms Dealer Ordinance (Chapter 5.38, Firearms Dealers, Scotts Valley Municipal Code) to require a safety inspection by the Chief of Police or his designee, with recommended additional security measures, if needed, which will be presented at a future City Council meeting.

The City Council also directed staff to implement a conditional use permit for firearms retail uses. Due to their unique characteristics, conditional uses require special consideration so that they may be located properly with respect to the objectives of the zoning ordinance and their effects on surrounding properties. To achieve these purposes, the Planning Commission is empowered to grant and to deny applications for use permits and to impose such reasonable conditions in connection with a use permit, as it deems necessary to secure the purposes of the Scotts Valley Municipal Code.

In addition, use permits also have a noticing requirement, which would serve as a mechanism to advise the public about any future proposed firearms retail, repair service, and related businesses. The proposed ordinance establishes a definition for Firearm Retail and includes a definition of Firearms. Requiring firearms dealers to obtain a use permit would allow the Planning Commission to place certain conditions on applicable businesses in order to make the use compatible with the surrounding area.

ENVIRONMENTAL REVIEW

The proposed ordinance subject to the California Environmental Quality Act (CEQA). The project is exempt from CEQA, pursuant to CEQA Guidelines Sections: 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment), and 15060(c)(3) (the activity is not a project as defined in Section 15378 of the CEQA Guidelines because it has no potential for resulting in physical change to the environment, directly or indirectly). Alternatively, this ordinance is not a project under CEQA Guideline Section 15061(b)(3), which is the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. CEQA does not apply where it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment. Therefore, this ordinance has no impact on the physical environment as it will not result in any changes.

PUBLIC NOTICE

On October 27, 2017, public hearing notices were posted at City Hall, the Scotts Valley Branch Library, and the Scotts Valley Senior Center, consistent with State law.

ATTACHMENTS

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1. Resolution No. ____ (Action Item for AZO17-002)	3
Exhibit A - Ordinance No. 16-189.3	5
2. City Council Meeting Minutes, dated Oct. 4, 2017	8
3. City Council Staff Report, dated Oct. 4, 2017	11

RESOLUTION NO. ____

**A RESOLUTION OF THE PLANNING COMMISSION OF THE
CITY OF SCOTTS VALLEY RECOMMENDING APPROVAL TO
THE CITY COUNCIL OF THE CITY OF SCOTTS VALLEY OF
ZONING ORDINANCE AMENDMENT NO. AZO17-002 TO
REQUIRE USE PERMITS FOR NEW FIREARMS RETAIL,
FIREARMS REPAIR SERVICE, AND RELATED USES**

WHEREAS, the City of Scotts Valley initiated amendments to the Scotts Valley Municipal Code by application No. AZO17-002 to amend Section 17.04.090, "F" terms, of Chapter 17.04, Definitions; Section 17.20.030, Conditional uses, Chapter 17.20, C-S Service Commercial Zoning District Regulations; Section 17.22.030, Conditional uses, Chapter 17.22, C-SC Shopping Center Commercial Zoning District Regulations, Title 17, Zoning, to require use permit approval of new firearms retail, firearms repair service, and related uses, pursuant to the authority provided in the Scotts Valley Municipal Code and direction provided by the City Council;

WHEREAS, on November 9, 2017, the Planning Commission held a duly noticed public hearing and recommended approval of the proposed Zoning Ordinance Amendment AZO17-002, which amends Section 17.04.090, "F" terms, Chapter 17.04, Definitions; Section 17.20.030, Conditional uses, Chapter 17.20, C-S Service Commercial Zoning District Regulations; 17.22.030, Conditional uses, Chapter 17.22, C-SC Shopping Center Commercial Zoning District Regulations, Title 17, Zoning; and,

WHEREAS, the subject Zoning Ordinance Amendment to the Scotts Valley Municipal Code is subject to the California Environmental Quality Act (CEQA); and,

WHEREAS, the subject Zoning Ordinance Amendment is exempt from CEQA pursuant to CEQA Guidelines section 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment) and 15060(c)(3) (the activity is not a project as defined in Section 15378 of the CEQA Guidelines because it has no potential for resulting in physical change to the environment, directly or indirectly). Alternatively, this ordinance is not a project under CEQA Guideline Section 15061(b)(3) which is the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment and CEQA does not apply where it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment.

The City's zoning currently allows retail uses in these zoning districts. This amendment would merely make firearm retail, related uses, and firearm service shops conditional uses. Therefore, this ordinance has no impact on the physical environment as it will not result in any changes to the environment.

NOW THEREFORE, be it resolved by the Planning Commission as follows:

SECTION 1: The Planning Commission of the City of Scotts Valley hereby recommends approval of the Zoning Ordinance Amendment AZO17-002, pursuant to the following findings:

- A. *The proposed amendments to the City's Zoning Ordinance will not have a significant negative impact on the environment as it is an exempt project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines.*** The proposed amendments meet the requirement of this finding in that, as an exempt project, it is determined that the proposed changes to the City's Municipal Code will not have a significant impact on the environment.
- B. *The proposed amendment is consistent with the City's General Plan.*** The proposed amendments meet the requirement of this finding in that the Zoning Ordinance Amendment will provide reasonable review of new firearms retail, firearms repair service, and related uses, to ensure compatibility with existing surrounding businesses and uses, consistent with the objectives in the C-S and C-SC Zoning District Regulations.

SECTION 2: The Planning Commission of the City of Scotts Valley hereby recommends approval of Ordinance No. 16-189.3 to the City Council as further described in Exhibit A, attached hereto and incorporated herein by this reference.

SECTION 3: After careful consideration of the Zoning Ordinance Amendment and related materials, facts, exhibits, staff report, testimony and other evidence submitted in this matter, and incorporated herein by this reference, the Planning Commission of the City of Scotts Valley does hereby recommend to the City Council approval of Zoning Ordinance Amendment No. AZO17-002 to require use permit approval of new retail firearms, firearms repair service, and related uses, as described in Ordinance No. 16-189.3, as provided in Exhibit A which is attached hereto and incorporated herein by this reference.

THE ABOVE AND FOREGOING RESOLUTION was duly adopted and passed by the Planning Commission of the City of Scotts Valley at a regularly scheduled meeting held on the 9th day of November, 2017, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

Approved: _____

Derek Timm,
Planning Commission Chair

Attest: _____

Taylor Bateman,
Acting Community Development Director

EXHIBIT A - ORDINANCE NO. 16.189-3

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SCOTTS VALLEY AMENDING SECTION 17.04.090, "F" TERMS, CHAPTER 17.04, DEFINITIONS; SECTION 17.20.030, CONDITIONAL USES, CHAPTER 17.20, C-S SERVICE COMMERCIAL ZONING DISTRICT REGULATIONS; AND SECTION 17.22.030, CONDITIONAL USES, CHAPTER 17.22, C-SC SHOPPING CENTER COMMERCIAL ZONING DISTRICT REGULATIONS, TITLE 17, ZONING, OF THE SCOTTS VALLEY MUNICIPAL CODE

The City Council of the City of Scotts Valley does hereby ordain as follows:

Section 1. Findings and Purpose. The City Council finds and declares as follows:

- A. Pursuant to its police powers, and as authorized by the Scotts Valley Municipal Code, the City may enact laws or regulations pertaining to the regulation of the sale, distribution, and repair of firearms within its jurisdiction.
- B. The City has previously adopted ordinances governing firearms use within the City.
- C. On October 4, 2017, the City Council has directed staff to prepare an amendment to the City Municipal Code regarding firearms retail and related uses.
- D. The City desires to amend Chapters 17.20 and 17.22 to make new firearms retail, firearms repair service, and related uses as conditional uses, which require use permit approval by the Planning Commission so that they may be located properly with respect to the objectives of the zoning ordinance and their effects on surrounding properties, and to amend Chapters 17.04, Definitions.
- E. The Planning Commission held a duly noticed public hearing on November 9, 2017, at which time it considered all evidence presented, both written and oral and at the end of the hearing voted to recommend that the City Council adopt this Ordinance.
- F. The City Council held a duly noticed public hearing on this Ordinance on December 6, 2017, at which time it considered all evidence presented, both written and oral.

Section 2. Section 17.04.090, "F" Terms, of Chapter 17.04, Definitions, of Title 17, Zoning, of the Scotts Valley Municipal Code is hereby amended to add the following definitions:

"Firearms" means a device as defined by California Penal Code Section 16520.
"Firearms Retail" means a use providing retail sale of firearms."

Section 3. Section 17.20.030, Conditional uses, of Chapter 17.20, C-S Service Commercial Zoning District Regulations, of Title 17, Zoning, of the Scotts Valley Municipal Code is hereby amended to read as follows:

“17.20.030 Conditional uses.

K. Firearms Retail, firearms repair service, and/or related uses.”

Section 4. Section 17.22.030, Conditional uses, of Chapter 17.22, C-SC Shopping Center Commercial Zoning District Regulations, of Title 17, Zoning, of the Scotts Valley Municipal Code is hereby amended to read as follows:

“17.22.030 Conditional uses.

U. Firearms Retail, firearms repair service, and/or related uses.”

Section 5. This ordinance is subject to the California Environmental Quality Act (CEQA), and the project is exempt from CEQA, pursuant to CEQA Guidelines Section 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment) and 15060(c)(3) (the activity is not a project as defined in Section 15378 of the CEQA Guidelines because it has no potential for resulting in physical change to the environment, directly or indirectly. Alternatively, this ordinance is not a project in CEQA Guideline Section 15061(b)(3) which is the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment and CEQA does not apply where it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment. Therefore, this ordinance has no impact on the physical environment as it will not result in any changes.

Section 6. If any section, subsection, subdivision, sentence, clause, phrase or portion of this Ordinance, is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance. The City Council hereby declares that it would have adopted this Ordinance and each section, subsection, subdivision, sentence, clause, phrase, or portion thereof, irrespective of the fact that any one or more sections, subsections, subdivisions, sentences, clauses, phrases, or portions thereof be declared invalid or unconstitutional.

Section 7. To the extent the provisions of the Scotts Valley Municipal Code as amended by this Ordinance are substantially the same as the provisions of that Code as they read immediately prior to the adoption of this Ordinance, then those provisions shall be construed as continuations of the earlier provisions and not as new enactments.

Section 8. The City Clerk shall certify as to the adoption of this Ordinance and shall cause a summary thereof to be published within fifteen (15) days of adoption and shall post a certified copy of this Ordinance, including the vote for and against same, in the Office of the City Clerk, in accordance with Government Code Section 36933.

This Ordinance No. 16-189.3 was introduced on the 6th day of December, 2017, and passed and adopted by the City Council of the City of Scotts Valley on the 21st day of December, 2017, by the following votes:

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED: _____
Randy Johnson, Mayor

ATTEST:

Tracy A. Ferrara, City Clerk

APPROVED AS TO FORM:

Kirsten Powell, City Attorney

Wendy Brannan, Scotts Valley resident, expressed concerns about the design of the park.

Ellen Buckingham, ADA Accessibility Committee, stated that she would like this park to include accessibility for disabled children.

CM Aguilar stated that she would like to see an additional three parking spaces where the six trees are located.

Brent Reed, Lennar Homes, stated that they would work with the City's Traffic Engineer and have the radius checked to see if the additional recommended parking would fit.

Nick Thelen, Scotts Valley Parks & Recreation Commissioner, stated that the Parks & Recreation Commission will take the input from the Council and public into consideration when finalizing the plans for the park.

M/S: Aguilar/Lind

To approve the design of the park with the following modifications from Council: (1) Switch the locations of the basketball court and tot lot; (2) Review the need for a barrier between the play area and the parking spaces; (3) Add two to three parking spaces where the six trees are located, subject to approval by the City Traffic Engineer; (4) Change the color of the poured in place surface material being used on the playground (other than black); (5) Work with Parks & Recreation Commission to explore opportunities to provide ADA accessible playground equipment.

Carried 5/0 (AYES: Aguilar, Dilles, Johnson, Lind, Reed)

2. Policy direction regarding firearms dealer requirements

PC Walpole presented the written staff report and responded to questions from Council. He stated that given that the City has exhausted the number of extensions allowed for a temporary moratorium and that the moratorium has sunset, policy direction is being requested from the Council based on the following options:

Option #1: Maintain Existing Ordinance (Ordinance No. 190), Enforcing Additional Firearm Dealer Security Measures

In addition to state and federal laws that regulate firearm dealers, the City's current ordinance requires existing and future firearm dealers to install burglar alarm and video surveillance systems to deter gun shop thefts. The ordinance does not address locations of gun shop given that zoning-based ordinances for gun shops are still under litigation.

Option #2: Amend Existing Ordinance (Ordinance No. 190) Requiring a Police Department Safety Inspection to Impose Recommended Safety Measures as Necessary

To allow for more individualized security measures for new firearms dealer shops, the existing ordinance can be amended to include a safety inspection by the Chief of Police or his designee, with recommended additional security measures, if needed. This option allows for a site inspection to ensure adequate security measures.

Option #3: Implement a Conditional Use Permit

Requiring firearms dealers to obtain a use permit would allow staff to place certain conditions on applicable businesses. Under the City's municipal code, the conditions could be revocable or valid for a certain duration. Use permits also have a noticing requirement, which would serve as a mechanism to advise the public about any future gun shops. Additionally, due to their unique characteristics, conditional uses require special consideration so that they may be located properly with respect to the objectives of the zoning ordinance and their effects on surrounding properties. To achieve these purposes, the planning commission is empowered to grant and to deny applications for use permits and to impose such reasonable conditions in connection with a use permit as it deems necessary to secure the purposes of the Scotts Valley Municipal Code (SVMC). Implementation of this option would require an amendment to the Zoning Ordinance and approval by the Planning Commission and City Council.

Julia Blanton, SV resident, encouraged Council to enact strict firearms regulations.

Ellen Buckingham, SV resident, encouraged Council to enact strict firearms regulations.

Laura Rockow, SV resident, encouraged Council to enact strict firearms regulations.

Karen Daniels, SV resident, stated that she would like to be involved in this process going forward.

Chris Culligan, spoke in opposition to additional firearms regulations.

Martin Spierings, SV resident, encouraged Council to enact strict firearms regulations.

Jolie Hanna, SV resident, encouraged Council to enact strict firearms regulations.

Robert DeForge, SV resident, spoke in opposition to additional firearms regulations and stated that his business had to move out of Scotts Valley as a result of the moratorium.

John Donaher, SV resident, encouraged Council to enact strict firearms regulations.

Denise Rudd, SV resident, Co-Owner of Call to Arms Gun Works (a gunsmith), and Director of Santa Cruz Women on Target Program (firearms safety and marksmanship), spoke in opposition to additional firearms regulations.

Bob Hedgepath, local resident, spoke in opposition to additional firearms regulations.

Joy Hems, SV resident, encouraged Council to enact strict firearms regulations.

John Kreitz, SV resident, spoke in opposition to additional firearms regulations.

Brandon Schell, SV business owner for medical and firearms instruction, spoke in opposition to additional firearms regulations.

Nathan Taylor, SV resident, spoke in opposition to additional firearms regulations.

Sarah Mozell, local resident, encouraged Council to enact strict firearms regulations.

Carrie P, SV resident, encouraged Council to enact strict firearms regulations.

Deborah Baker, Santa Cruz County resident, spoke in opposition to additional firearms regulations.

VM Reed recommended including an additional requirement under Option 1 that all firearms be locked up.

M/S: Reed/Lind

To implement Options 1, 2, and 3, with an additional requirement under Option 1 that firearms be locked up.

Carried 5/0 (AYES: Aguilar, Dilles, Johnson, Lind, Reed)

3. Future Council agenda items

CM Dilles requested a future agenda item to have a special Council Workshop on our strategic plan and fiscal sustainability plan.

City of Scotts Valley CITY COUNCIL STAFF REPORT

DATE: October 4, 2017

TO: Honorable Mayor and City Council

FROM: Steve Walpole, Chief of Police

APPROVED: Jenny D. Haruyama, City Manager

**SUBJECT: POLICY DIRECTION REGARDING FIREARMS DEALER
REQUIREMENTS**

SUMMARY OF ISSUE

On August 19, 2015, the Police Department recommended that the City Council adopt an ordinance that regulated firearms dealers. At the time, Scotts Valley had seen a noticeable increase of gun shops. The proposed ordinance was a way to better regulate the security of these establishments. The ordinance also proposed regulating the location of gun shops (e.g. prohibiting them from being near schools and parks) and high risk alcohol outlets. The proposed ordinance was modeled after Santa Cruz County's ordinance. After receiving public testimony, the City Council directed staff conduct more research and modify the proposed ordinance.

On September 2, 2015, staff returned to Council and introduced two ordinances for Council consideration. The first ordinance (Ordinance No. 190) required additional security measures. After meeting with local gun shop owners and conducting additional research, it was noted that while firearms dealers are regulated by federal and state laws, the regulations stop short of two crucial areas of premises security – (1) burglary alarm systems and (2) video surveillance systems. Additionally, federal and state agencies that monitor and audit firearms dealerships often do not have the time to sufficiently monitor whether requirements are being met. As a result, staff drafted an ordinance that focused on requiring firearms dealers to obey existing state and federal regulations and adhere to additional security measures, including burglar alarms and video surveillance. The adopted ordinance did not restrict locations.

The second ordinance (Ordinance No. 189) imposed a temporary moratorium on the establishment of commercial operations engaged in the sale of firearms, ammunition, and/or explosive devices within the City of Scott Valley. A moratorium was recommended to allow the City time to complete an adequate study into appropriate land use regulations for firearms dealers. The ordinance was approved, and later extended on two occasions and finally sunset on September 1, 2017. These extensions were necessitated by changes in key personnel. Since the sunset of the temporary moratorium, the following research was completed:

- Collected data from cities on how they regulated firearms sales.
- Conducted field visits of existing gun shops and discussed with the owner/operators of their existing land uses in the City and understand their land use needs. Each gun shop was situated in a commercial retail area and owners advised they would continue to seek out this area for their shops.
- Our current firearms dealer ordinance was created and approved by City Council. This ordinance enhances the safety and security of gun shops by requiring them to have alarms and video surveillance systems (both of which are not required by State or Federal regulations).
- Contacted over 20 city and county agencies to determine how they regulate gun shops, or whether they regulate them at all. There is a wide mix of regulation methods. Monterey County agencies predominately do not regulate locally, but instead rely on state and federal regulations. Santa Cruz and Santa Clara County agencies predominately have ordinances that further regulate firearms dealers. These ordinances vary in the amount and type of regulation.
- Completed research of other firearms ordinances.
- Noted the recent Ninth U.S. Circuit Court of Appeals ruling regarding zoning and gun shops in Alameda County (Teixeira v. County of Alameda). The Court of Appeals ruled in May 2016 that the zoning ordinance may not have been justified; however, in December 2016, the Ninth Circuit elected to rehear the case en banc and thus the May 2016 ruling is not considered precedent. The case was argued on March 22, 2017, but no holding has been decided yet.

Request for Policy Direction

Given that the City has exhausted the number of extensions allowed for a temporary moratorium and that the moratorium has sunset, staff has identified three policy options for Council consideration.

Option #1: Maintain Existing Ordinance (Ordinance No. 190), Enforcing Additional Firearm Dealer Security Measures

In addition to state and federal laws that regulate firearm dealers, the City's current ordinance requires existing and future firearm dealers to install burglar alarm and video surveillance systems to deter gun shop thefts. The ordinance does not address locations of gun shop given that zoning-based ordinances for gun shops are still under litigation.

Option #2: Amend Existing Ordinance (Ordinance No. 190) Requiring a Police Department Safety Inspection to Impose Recommended Safety Measures as Necessary

To allow for more individualized security measures for new firearms dealer shops, the existing ordinance can be amended to include a safety inspection by the Chief of Police or his designee, with recommended additional security measures, if needed. This option allows for a site inspection to ensure adequate security measures.

Option #3: Implement a Conditional Use Permit

Requiring firearms dealers to obtain a use permit would allow staff to place certain conditions on applicable businesses. Under the City’s municipal code, the conditions could be revocable or valid for a certain duration. Use permits also have a noticing requirement, which would serve as a mechanism to advise the public about any future gun shops. Additionally, due to their unique characteristics, conditional uses require special consideration so that they may be located properly with respect to the objectives of the zoning ordinance and their effects on surrounding properties. To achieve these purposes, the planning commission is empowered to grant and to deny applications for use permits and to impose such reasonable conditions in connection with a use permit as it deems necessary to secure the purposes of the Scotts Valley Municipal Code (SVMC). Implementation of this option would require an amendment to the Zoning Ordinance and approval by the Planning Commission and City Council.

FISCAL IMPACT

There are no direct costs associated with this ordinance or required by the City. Any administrative or operational expenses related to licensing would be recovered through applicable fees.

STAFF RECOMMENDATION

It is recommended that the City Council provide policy direction regarding the three options.

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Santa Cruz County Firearms Dealer Regulation

City/County	Ordinance	License	Alarms	Video	Add. Security	Add. LE Background	Employee Background	Insurance	Security for Open Business
Santa Cruz City	Yes	*Yes	Yes	No	Yes	Yes	Yes	Yes	No
Santa Cruz Co.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Capitola	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Scotts Valley	Yes	Yes	Yes	Yes	No	No	No	No	No

City/County	LE Inspection	Locations	Ammo
Santa Cruz City	Yes	Yes – Comply with zoning codes; 600'	No
Santa Cruz Co.	Yes	Yes – Comply with zoning codes; 600' +	Yes
Capitola	Yes	Yes – Commercial zone only	No
Scotts Valley	No	No	No

* Letter of Authorization

? No ordinance on-line, and no response back from agency.

Santa Clara County Firearms Dealer Regulation

City/County	Ordinance	License	Alarms	Video	Add. Security	Add. LE Background	Employee Background	Insurance	Security for Open Business
San Jose	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Los Gatos	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Campbell	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Santa Clara Co.	Yes	Yes	No	No	No	No	No	No	No
Sunnyvale	Yes * (ammo only)	--	--	--	--	--	--	--	--
Mountain View	No	--	--	--	--	--	--	--	--

City/County	LE Inspection	Locations	Ammo
San Jose	Yes	Yes – Comply with zoning codes	No
Los Gatos	Yes	Yes – Comply with zoning codes	No
Campbell	Yes	Yes – Non residential	Yes
Santa Clara Co.	No	Yes – Comply with zoning codes	No
Sunnyvale	Yes	No	Yes
Mountain View	No	No	No

*Sunnyvale has an ordinance regarding ammunition, but no ordinance or other procedures to regulate firearms dealers.

Monterey County Firearms Dealer Regulation

City/County	Ordinance	License	Alarms	Video	Add. Security	Add. LE Background	Employee Background	Insurance	Security for Open Business
Monterey Co.	No	--	--	--	--	--	--	--	--
Salinas	Yes	*Yes	No	No	No	Yes	Yes	Yes	No
Seaside	Yes	*Yes	**Yes	**Yes	**Yes	No	No	No	**Yes
Marina	No	--	--	--	--	--	--	--	--
Soledad	No	--	--	--	--	--	--	--	--
King City	No	--	--	--	--	--	--	--	--
Carmel	No	--	--	--	--	--	--	--	--
Gonzales	No	--	--	--	--	--	--	--	--
Sand City	No	--	--	--	--	--	--	--	--
Del Rey Oaks	No	--	--	--	--	--	--	--	--

City/County	LE Inspection	Locations	Ammo
Monterey Co.	--	--	--
Salinas	Yes	Yes – Zoning; 1000' +	No
Seaside	Yes	No	No
Marina	--	--	--
Soledad	--	--	--
King City	--	--	--
Carmel	--	--	--
Gonzales	--	--	--
Sand City	--	--	--
Del Rey Oaks	--	--	--

* Permit

**Chief of police can require any structural conditions to building that will ensure safety of firearms form burglary or theft.

Teixeira v. County of Alameda

In order to qualify for a permit to operate a gun store, the Alameda County ordinance requires that “the subject premises is not within 500 feet of any of the following: residentially zoned district; elementary, middle or high school; preschool or day care center; other firearms sales business; or liquor stores or establishments in which liquor is served.”

The three-judge Ninth Circuit panel had opined that the district court should have required the county to justify the ordinance by showing evidence that the presence of gun stores in neighborhoods leads to increased crimes and/or negatively impacts aesthetics.

[Teixeira v. County of Alameda](#), 13-17132

Three-Judge Panel Opinion: 822 F.3d 1047 (9th Cir. 2016)

Order Taking Case En Banc: 2016 WL 7494873 (9th Cir. Dec. 27, 2016)

Date of Order Taking Case En Banc: December 27, 2016

Status: Argued and submitted on March 22, 2017, at 1:30 p.m., in San Francisco, California

Members of En Banc Court: Chief Judge Thomas, Judges Reinhardt, McKeown, Gould, Paez, Berzon, Tallman, Bybee, Bea, Watford, and Owens

Subject Matter: Appeal from the district court's dismissal for failure to state a claim of an action brought by individuals wishing to operate a gun shop in Alameda County, California, challenging a County ordinance that does not permit prospective gun shops to be located within 500 feet of a residentially-zoned district.

Holding: Not yet decided

ORDINANCE NO. 190

**AN ORDINANCE OF THE CITY OF SCOTTS VALLEY ADDING CHAPTER 5.38 TO
TITLE 5 OF THE SCOTTS VALLEY MUNICIPAL CODE REQUIRING FIREARMS
DEALERS TO MEET CERTAIN REQUIREMENTS AND TO OBTAIN A
FIREARMS DEALER LICENSE**

**BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SCOTTS VALLEY AS
FOLLOWS:**

SECTION 1. Title 5 of the Scotts Valley Municipal Code is hereby amended by adding a new Chapter 5.38 entitled “Firearms Dealers” to read as follows:

“Chapter 5.38

Firearms Dealers

- 5.38.010 Purpose.
- 5.38.020 Definitions.
- 5.38.030 City license.
- 5.38.040 Application for City license.
- 5.38.050 Approval by Licensing Officer.
- 5.38.060 Denial of application.
- 5.38.070 Appeal from denial.
- 5.38.080 Requirements.
- 5.38.090 Suspension and revocation.
- 5.38.100 Notification of suspension or revocation.
- 5.38.110 Hearing on revocation or suspension.
- 5.38.120 Violations.
- 5.38.130 Penalties.

5.38.010 Purpose.

This chapter is enacted pursuant to State law, as set forth in Article 1, Chapter 2, Division 6, Title 4, Part 6 of the California Penal Code beginning with Section 26700 et seq.

5.38.020 Definitions.

As used in this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section:

(A) “Firearm” means a device as defined by California Penal Code Section [16520](#).

(B) “City license” means a license issued by the local licensing authority pursuant to this chapter authorizing a person to engage in the sale, lease, transfer, delivery, advertisement or offer for sale, lease, or transfer of firearms.

(D) “Local Licensing Authority” or “Licensing Officer” means the City Manager of the City of Scotts Valley, or his or her designee.

5.38.030 City license.

On and after the effective date of this ordinance, no person required to obtain a Federal Firearms License and a State Department of Justice License to sell firearms shall establish a business that engages in the sale, lease, transfer, delivery, advertisement or offer for sale, lease, or transfer any firearm without first also obtaining and keeping a one-time City license issued pursuant to this chapter by the Local Licensing Authority. Existing firearms dealers at the effective date of this ordinance have 12 months to comply with the conditions and obtain a city license.

5.38.040 Application for City license.

(A) Each person applying for a City license under this chapter shall submit an application to the Local Licensing Authority.

(B) In order to obtain a City license, the applicant must first provide the following to the Licensing Officer:

- (1) A valid Federal firearms license;
- (2) A valid seller's permit issued by the State Board of Equalization;
- (3) A valid certificate of eligibility issued by the Department of Justice;
- (4) Payment of a nonrefundable administrative fee, in an amount to be established by resolution of the City Council.

(C) Where the applicant is a corporation, each of the requirements contained in this chapter must be completed and/or adhered to by a legally recognized corporate officer of said corporation. Where the applicant is a partnership, each of the requirements contained in this chapter must be completed and/or adhered to by a legally recognized general partner of said partnership. Both the individual and the corporation or partnership shall be liable for any violation of the provisions of this chapter.

(D) Each application shall specify only one location at which the sale or transfer of firearms shall take place. If any firearms dealer licensed under either Federal, State or local law changes his or her place of business, an application for the new location shall be submitted, accompanied by a nonrefundable fee (in the form of a check or cash) as set forth in the schedule of fees. That application shall be considered an initial application and not an application for renewal.

5.38.050 Approval by Licensing Officer.

The Licensing Officer shall have the authority to approve or disapprove the issuance of the City license. For the purpose of considering requests for a City license, the Licensing Officer shall apply the minimum standards set forth in this chapter. Factors to be considered by the Licensing Officer in approval or denial of the application for a City license include, but are not limited to:

- (A) Evidence of the applicant's compliance with all applicable City, State and Federal laws;
- (B) Whether applicant has violated any provisions of this chapter;
- (C) Whether the applicant has made any false statements as to any material fact in applying for the City license;
- (D) Whether the applicant has done or caused or permitted to be done any act which if done by an authorized firearms dealer would be grounds for suspension or revocation of the City license;

5.38.060 Denial of application.

If the applicant does not meet all of the written standards, hereinabove set forth, the Licensing Officer shall not issue a City license to such applicant.

It shall be the duty of the Licensing Officer to notify an applicant that his or her application has been denied by serving such person, either personally or by first class United States mail, with a letter setting forth the reason(s) for such denial. The notice, if served by mail, shall be deemed to have been served on the date of its deposit in the United States mail, postage prepaid, to the applicant's address of record. The notice shall also inform the applicant of his or her right to a hearing before the City Council at which time the applicant may appear, with a representative if so desired, and be heard on the matter. The applicant shall also be given notice that any request for a hearing before the City Council must be made in writing to the City Clerk within 10 calendar days after the date on which such notice is served on the applicant.

5.38.070 Appeal from denial.

An applicant whose application has been denied by the Licensing Officer shall have the right to appeal such decision to the City Council. The City Council shall hold a hearing thereon pursuant to the procedures set forth in Section 5.38.110.

5.38.080 Requirements.

(A) The permitted business location shall be secured by a third party monitored alarm system. The alarm system shall be of sufficient quality to thwart the bypassing of the alarm (E.G., wireless, hardened security of the wire system, etc.).

(B) The permitted business location shall be monitored by a video surveillance system.

(C) Any person licensed under this chapter shall obey all applicable City, State and Federal laws; and in addition, comply with the following requirements:

(1) The business shall be carried on only in the building designated in the City license;

(2) The City license or a copy thereof, certified by the issuing authority, shall be displayed on the premises where it can easily be seen.

5.38.090 Suspension and revocation.

Every City license issued under this chapter shall be subject to summary suspension and revocation by the Licensing Officer if he or she determines that:

(A) The City license holder has failed to meet any of the requirements specified under this chapter;

(B) The City license holder and/or any employee(s) has violated any of the conditions or provisions of this chapter;

(C) The City license holder and/or any employee(s) has violated any provision of Federal or State firearms sales laws;

(D) The City license holder's Federal firearms sales license has been revoked; or

(E) The City license holder has committed any act which could have resulted in the denial of issuance of a firearms license.

5.38.100 Notification of suspension or revocation.

It shall be the duty of the Licensing Officer or his or her designee to notify any City license holder charged with any violation or misconduct, as described above, by serving such person, either personally or by first class United States mail, with a letter setting forth the particular written standard or condition which has been violated. The letter shall inform such City license holder of the right to a hearing before the City Council, at which time the City license holder may appear with a representative if so desired and be heard in defense of the charges. The City license holder shall also be given notice that any request for a hearing before the City Council must be made in writing to the City Clerk

within 10 calendar days after the date on which notice is served on the City license holder. The suspension or revocation shall be effective on the date the notice is served on the City license holder. Such notice, if served by United States mail, shall be deemed to have been served on the date of its deposit in the United States mail, postage prepaid, to the City license holder's address of record.

5.38.110 Hearing on revocation or suspension.

(A) Any applicant or licensee who is aggrieved by any action taken in regard to a City license may request an appeal hearing before the City Council. Request for such hearing shall be in writing and filed with the City Clerk, and a copy filed with the Licensing Officer on or before 10 calendar days after the action appealed from was taken, and shall state the grounds upon which the aggrieved party claims there was improper denial, suspension or revocation of his or her license.

(B) Upon receipt of such request for hearing, the City Council shall set the matter for hearing not later than 20 calendar days thereafter unless the Council is not in session in which case the Council shall set the matter for hearing at the next available regular meeting date. The Council may also determine whether to stay the denial, suspension or revocation pending decision on the appeal. Written notice of the time and place of hearing on the matter shall be given by the City Clerk to the aggrieved party and to the Licensing Officer, and upon receipt of the notice of hearing the Licensing Officer shall forward to the City Council and provide to the appellant a report on this action with respect to the matter, attaching all relevant notices and any other materials relied upon by the Licensing Officer in making the decision.

(C) Upon hearing of the matter, the City Council may take such action or make such orders as the Council deems just and proper in the disposition of the matter.

5.38.120 Violations.

It shall be unlawful and a violation of this chapter for any person, corporation, partnership or other entity to operate a firearms business within the City of Scotts Valley without a valid City license issued pursuant to this chapter.

5.38.130 Penalties.

Any person or entity, whether as principal, agent, employee, or otherwise, violating or causing or permitting the violation of any of the provisions of this chapter, shall be guilty of an infraction for the first offense, or of a misdemeanor for any subsequent offense(s) occurring within the one year after the first offense. Upon conviction, the person convicted shall be punished in accordance with Chapter 4.04 of the Scotts Valley Municipal Code.

SECTION 2. SEVERABILITY. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction such portion shall be deemed a separate, distinct and independent provision of such Ordinance and shall not affect the validity of the remaining portions thereof.

SECTION 3. REPEALS CONFLICTING ORDINANCES. All other ordinances of the City of Scotts Valley or provisions of the Scotts Valley Municipal Code which are in conflict with this Ordinance are hereby repealed to the extent of such conflict.

SECTION 4. CEQA. The City Council finds and determines that the enactment of this Ordinance is statutorily exempt from environmental review pursuant to the State CEQA Guideline Section 15061(b)(3) because the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

SECTION 5. EFFECTIVE DATE. This Ordinance shall take effect thirty (30) days after the date of its adoption. Prior to the expiration of fifteen (15) days from the date of adoption, this Ordinance shall be published in at least three (3) public places.

This Ordinance was introduced on the 2nd day of September, 2015, and passed and adopted by the City Council of the City of Scotts Valley on the 16th day of September, 2015, by the following votes:

AYES: AGUILAR, JOHNSON, LIND
NOES: NONE
ABSENT: BUSTICHI, REED
ABSTAIN: NONE

APPROVED: _____
Donna Lind, Vice Mayor

ATTEST:

Tracy A. Ferrara, City Clerk

APPROVED AS TO FORM:

Kirsten Powell, City Attorney

**City of Scotts Valley
PLANNING COMMISSION
STAFF REPORT**

Date: November 9, 2017

**Applicant /
Property Owner:** Robert Kim

Architect: Daniel Silvernail Architects, Inc.

Applications: Use Permit U17-002 and Design Review DR17-003

Location: 4803 Scotts Valley Drive / APN 022-082-76

General Plan / Zoning: Service Commercial / C-S

Environmental Status: Exempt from environment review and qualifies for a Categorical Exemption from the California Environmental Quality Act under Section 15332, Class 32, In-Fill Development (urbanized area less than five acres in size).

Request: Consideration of Use Permit and Design Review applications to allow construction of a new 11,592-square foot, three-story mixed-use development on a 0.41-acre site in the C-S Service Commercial Zone. The project proposes ground floor retail, second floor commercial office space, and six residential apartment units on the third floor.

Staff Planner: Scott Harriman, Consulting Planner, (650) 587-7300 x66
sharriman@rgs.ca.gov

STAFF RECOMMENDATION

Staff recommends that the Planning Commission approve Use Permit U17-002 and Design Review DR17-003 by adopting the findings in the attached Resolution, subject to the attached Conditions of Approval in Exhibit A.

SITE AND PROJECT DESCRIPTIONS

The project proposes a three-story, 35-foot tall, 11,592-square foot, mixed-use development consisting of approximately 1,800-square feet of ground floor retail, 2,528-

square feet of commercial office space on the second floor and six residential apartment units on the third floor. The building is designed with a porte-cochere drive aisle with partially covered parking and an atrium-style open roof that provides light and air on the second and third floors. The project is situated on a previously developed, now vacant 0.41-acre parcel on Scotts Valley Drive in the C-S, Service Commercial Zone.

The 0.41-acre parcel was created in 2014 through a subdivision that allowed for eight two-story single-family homes on Siri Lane, a private street to the rear of the subject site. The site has a gentle slope of five-percent from the rear of the parcel downward toward the street frontage. The site is sparsely vegetated with four on-site trees, which would be removed. Other trees are located off-site in close proximity to the north and south property lines.

The site contains one existing driveway along the Scotts Valley Drive frontage, which would be relocated southerly approximately 60-feet as part of the proposed development. Access to the site through the driveway is limited to right-in and right-out due to the existing median on Scotts Valley Drive. The site is surrounded by existing land uses on all adjacent parcels; residential to the south and west, a commercial auto repair facility to the north, and Scotts Valley Drive to the east. All public utilities are available to the site.

The project proposes site grading such that the proposed building's first floor finished grade will be approximately five-feet lower than the adjacent residential site to west (rear); one-foot lower than the adjacent site to the south; and one to four feet lower than the auto repair facility to the north. These grade changes would be supported by architectural grade split-face block retaining walls and six and eight-foot high redwood fences along the southerly and northern property lines respectively.

The proposed three-story building is 35-feet in height with two elevator/stair towers and rooftop mechanical equipment. Pursuant to Section 17.46.050, towers and roof-top mechanical appurtenances are permitted to exceed the building height limit provided they cover not more than 10-percent of the ground area covered by the building and erected to a height not more than 25-feet above the height limit. In this case, the roof-top mechanical equipment is approximately three feet above and the two elevator/stair towers rise approximately 7.5-feet above the 35-foot height limit, well below the 25-foot allowable height limit. The roof-mounted mechanical equipment and towers total less than 10-percent of the 8,300-square foot ground area covered by the building.

Exterior siding materials on the building include coursed fieldstone on the retail commercial ground floor and cement plaster finish on the second and third floors. Architectural details throughout the building include wood and metal deck railings, anodized aluminum windows for each level; commercial storefront windows on first and second floors and operable vinyl casement windows on the residential third floor. An elevator tower, clad in fieldstone, is proposed at the north elevation. The applicant is proposing to utilize this elevator tower as the location for a public art feature, which is shown as an "eye" that functions as a clock.

The project proposes 19 full-size parking stalls, two of which are handicap accessible. The existing driveway that serves the site will be relocated to accommodate on-site

vehicle circulation. The new driveway and drive aisle forms a “hammer-head” turn-around that allows service vehicles the ability to turn around on-site and exit onto Scotts Valley Drive in a forward direction. The relocated driveway requires the project to relocate a number of existing pad-mounted utility cabinets. The area below the driveway surface will be used for the required stormwater retention and filtration system.

The site plan includes perimeter landscaping, front and rear yard landscaping including an open space lawn area of approximately 708-square feet. Landscape irrigation would be served with recycled water. Project plans include a stormwater control plan that provides retention and filtration of stormwater. Paved accessible walkways are provided around the site with two pedestrian sidewalks to the public sidewalk. Bicycle parking is also provided near a fully enclosed trash and recycling enclosure at the rear of the site. The applicant has reported that they have confirmed with the local trash hauler that adequate over-head clearance is provided to accommodate access to trash enclosure for pick-up.

The project requires a Conditional Use Permit for multi-family dwellings located above the ground level commercial use, Architectural and Site Design Review, Environmental Review and Sign Review. The applicant is also requesting Planning Commission consideration of reduced (shared) parking for the mixed-use project pursuant to Scotts Valley Municipal Code (SVMC) Section 17.20.045, Development Standards for Mixed-Use Projects.

DISCUSSION AND ANALYSIS

Staff has reviewed the proposed project for compliance with the City’s regulations and requirements. The project is subject to C-S, Service Commercial zoning development standards, a Use Permit, and Design Review. An analysis of the project and applicable code provisions for the Planning Commission’s consideration is provided below.

Use Permit for Multi-Family Dwellings: In the C-S, Service Commercial zoning district, multi-family dwellings located above the ground-level commercial use is a conditional use which requires use permit approval by the Planning Commission. The use permit process evaluates if the proposed use is consistent with the objectives of the zoning district and if the use will have a negative impact on adjacent uses. This section evaluates the project’s compliance with the C-S zoning district regulations.

Zoning Compliance: The following table describes the projects compliance with the C-S zoning standards.

C-S, Service Commercial Development Standards			
Standard	Required	Provided	Compliance
Bldg. Coverage	45%	42%	Yes
Setback - Front	20-feet	30.75-feet	Yes
- Rear	0-feet	20-feet	Yes
- Side	0-feet	15’ left/ 0’ right	Yes
Residential Side	10-feet	10-feet	Yes
Height	35-feet	35-feet	Yes
Height exception	Additional 25-feet for towers, roof-top mech. equipment, etc.	7.5-feet for tower, 3-feet for mech. equipment	Yes

Fence	6-foot adjacent to "R"	6-foot redwood fence	Yes
Landscape Area	Min 10%	23%	Yes
Front Landscape	Min 10-feet	Average 10-feet	See landscape discussion below
Trash Disposal	Adequate/Screened/Accessible	Adequate/Screened/Accessible	Yes

As shown in the table above, the project is consistent with C-S Service Commercial zoning standards with the possible exception of the front landscape depth requirement, which is discussed in the Design Review landscape section below.

Mixed-Use Development Standards: Section 17.20.045 of the C-S zoning district regulations include development standards for mixed-use projects designed specifically to insure an appropriate accommodations between commercial and residential uses on the same or adjacent parcels. Standards for mixed-use projects include a residential density range, shared parking, private and community outdoor space, location of truck docks (not applicable in this case) and setbacks for residential uses. The Planning Commission has discretion in review of shared (reduced) parking and provision of private and common useable open space areas.

The table below provides an overview of project's compliance with the C-S zone mixed-use development standards.

Mixed-Use Development Standards in C-S Zone			
Standard	Required	Provided	Compliance
Residential Density	15-20 units/acre	6 units (15 units/acre)	Yes
Parking	Per zoning: 31 spaces Shared parking may be permitted by PC if viable	19 spaces Shared parking proposed	Subject to PC determination. See analysis below.
Private outdoor space	100-sq ft of private outdoor area per unit. PC may allow common open space in lieu of private space for all units	708-sq ft of ground level lawn common space plus four private balconies averaging 120 square feet each.	Subject to PC determination. See analysis below.
Truck loading dock location	N/A	N/A	N/A
Residential setbacks:			
Front	10-feet	30.5-feet	Yes
Rear	15-feet	20-feet	Yes
Left Side	10-feet	15-feet	Yes
Right Side	10-feet	10-feet	Yes

The following analysis is provided to assist the Planning Commission in the evaluation of the project's proposed shared parking and private outdoor space.

Traffic Analysis and Shared Parking: A transportation and parking impact analysis dated August 1, 2017 was prepared by J. Daniel Takacs, CA TE 1549, a California registered Traffic Engineer, which evaluates potential impacts to the City's transportation network and to assess the proposed shared parking plan. The report states that the project is estimated to generate 12 net new trips during the AM peak

hour and 15 net new trips during the PM peak hour, and concludes that the project would not have a significant impact to the city's traffic operations.

The parking requirement for each of the three proposed uses calculated independently is 31 spaces as shown in the table below.

Individual Use Parking Space Requirement			
	Standard	Floor area	Required
Retail	1 space/250sf	1878sf	7.5
Office	1 space/250sf	2528sf	10.1
Residential	2/unit + 1guest/5units	6 units	13
Total			30.6 (31)

Shared Parking: Pursuant to Section 17.20.045(B), the Planning Commission may reduce parking standards in cases where shared parking is feasible and viable. In this case, the proposed mixed-use project provides 19 full-size parking stalls in a shared parking arrangement based on the peak parking demand for the combined uses. Analysis of the parking demand for the project is included in the traffic report (Transportation Study, Exhibit 10A and 10B) and includes weekday and weekend parking demand, for retail, office, and residential, hourly from 6AM to 12 midnight.

The parking demand study concludes that the project's weekday shared parking demand is estimated to be 19 parking spaces and the weekend shared parking demand is estimated to be 12 parking spaces. With 19 parking spaces provided on the project site, the estimated shared parking demand of 19 spaces will equal the parking supply. The report states that, ideally, it is desirable for the parking supply to exceed the peak parking demand by 5 to 10 percent (1 to 2 additional spaces) to provide a buffer over the estimated parking demand, and recommends that the owner of the project limit residential units to one vehicle per unit.

In review of the proposed mixed-use shared parking plan, the parking demand study, and street parking in the surrounding area, any potential burden of a parking shortfall on the project site would fall on tenants of the proposed development. As the residential units are rental (not for-sale units), the property owner could limit residential parking in rental leases. Residents of rental units with parking restrictions tend to be self-selecting and are therefore less impacted by parking limitations. Street parking is not permitted on Scotts Valley Drive, however there is street parking on Carbonero Drive, which is often heavily used during daytime hours, although lesser so during evening and early morning hours when residential parking demand is highest.

Transportation alternatives are available to the site. Santa Cruz Metro currently operates Bus Route 35A on Scotts Valley Drive, providing weekday and weekend service between Santa Cruz Metro Transit Center in the Boulder Creek area. Route 35A bus stops are located on Scotts Valley Drive at Civic Center Drive, which is about 1,050 feet south of the project site, and Dunslee Way, which is about 600 feet north of the project site. Service headways are one-half hour on weekdays and one hour on weekends. The project also includes bicycle parking on site.

Based on the above analysis, the Planning Commission may find that the shared parking for the proposed mixed-use development is feasible and viable and authorize the requested parking reduction.

Private outdoor space: Pursuant to Section 17.20.045(C), each dwelling shall have private, usable outdoor space, i.e. decks, balconies, yards, or patios of one hundred square feet per residential unit. The Planning Commission may determine that the required private outdoor space is not appropriate in a particular building design and allow the required outdoor space to be common open space for all residential units.

In this case, the project includes six residential apartment units: four two-bedroom units and two one-bedroom units. The four two-bedroom units each have private outdoor deck space. The sizes of the private decks for units 1, 2, 4 and 5 are: 90, 160, 114, and 117-square feet, respectively. Three of the four decks comply with the 100-square foot size requirement. The two one-bedroom units do not have private open space. The project does provide a rear-yard common landscaped area that includes a lawn area approximately 59-feet long by 12-feet wide, with an area of 708-square feet. This residential common open space area would be available to all tenants of the building and exceeds the 100-square foot per unit standard, albeit not private. In addition, the atrium open-roof design on the second and third levels provides a unique opportunity for an outdoor environment within the building's interior. The Planning Commission may determine that the project's 708-square foot lawn area and unique open roof atrium design provides an appropriate level of useable outdoor space accessible to all of the building's tenants, and includes private decks for four of the proposed six residential units.

Design Review for New Structures: Architectural and Site Plan Design Review is required by the Planning Commission for all (new) structures and signage in the C-S zoning district. The following section describes the project's architectural details and compliance with the required design review criteria.

Site Plan: The proposed mixed-use building is located centrally on the lot and complies with all required commercial and residential setbacks. The site plan incorporates landscaping throughout the site, adds 11 new trees, provides a trash and recycling enclosure, 19 parking stalls, and special paving details, and is designed to accommodate storm water treatment and retention. The building's open-roof interior atrium and ground level courtyard design, and landscaped site plan work together to create an interesting indoor and outdoor experience.

Architecture; mass, colors, proportions, details: The building's architectural massing and details could be described as horizontal in nature. The design de-emphasizes height through the use of long continuous features such as horizontal arbors and deck railing that run the entire length of the building, an articulated flat roof design, and the building materials and color pattern, which includes a different color on each of the three levels.

The project proposes a durable ground floor material of stacked (coursed) fieldstone for the commercial façade that provides visual "weight" to anchor the building. The second and third floors are clad in cement plaster with a medium earth-tone color on the second

level and a lighter color on the third floor. Anodized aluminum window systems are used throughout the building with storefront windows on the ground floor, multiple-light windows for the second level office space, and operable casement windows on the residential third level. The window sizes are scaled for their application, with larger storefront windows on the ground level, getting progressively smaller on the second and third levels, creating a hierarchy of design.

Architectural details include decorative trellises, glass skylights, decks with wood and metal railings, fascia bands, and roof overhangs that provide shade, add visual depth, and “cap” the building design. Roof-mounted equipment is located toward the center of the roof and behind sound-attenuating mechanical screening. An elevator/stair tower is proposed on the north façade, clad with stacked fieldstone to match the base material. Windows are situated on the front and rear tower elevations to allow natural light into the interior space. The elevator tower is also the location for the project’s public art contribution, which is shown as a clock in the shape of an eye.

Lighting: The project proposes exterior lighting to include a pole light at the front driveway entrance, low bollard lighting around the rear yard landscaped area, and wall fixtures on the front building façade. Conditions of approval require any pole lights to be a maximum of 12-feet in height and all light sources to be down-directed and shielded to prevent glare onto adjacent properties. Conditions of approval also require that lighting in the porte-cochere be recessed in the ceiling with no exposed light sources or electrical conduit. All exterior light fixtures are required to be architectural grade to complement and integrate into the building design.

Signage: Pursuant to the city’s sign ordinance, Section 17.56.180, an integrated sign program may be prepared for developments with three or more tenant spaces. The applicant is proposing an integrated sign program to accommodate a variety commercial tenant spaces on the ground and second levels. One square foot of sign area is permitted for each linear foot of storefront. The primary street-facing ground level storefront is approximately 57-feet in length, which would allow individual tenant signs totaling 57-square feet. The building is designed with three storefront colonnades, which could accommodate sign area for three tenants of approximately 19.5-square feet each; or individual tenant signs measuring 2-feet x 9.5-feet. The sign program, included as Exhibit B in the resolution, allows each primary street-facing ground floor tenant, or one tenant leasing the entire first floor, to have one storefront identification sign.

A fourth front-facing tenant sign, to accommodate a secondary retail tenant with interior courtyard frontage within the building, may be permitted. The fourth tenant sign could be located between the street-facing colonnades over the covered parking area. This colonnade sign band could accommodate a secondary tenant sign of similar size and design as the three primary tenants. The secondary sign colonnade in the covered parking area would provide appropriate way finding to the entrance of the secondary retail area. No commercial signage would be permitted over the driveway colonnade.

Signage for the second floor office space would be accomplished through a pedestrian level tenant directory sign at the main courtyard entrance. Street-facing window signs for the second level tenants are also proposed. Window signage is permitted on second floor spaces, however use of neon is discouraged. Staff recommends that second level

window sign be non-illuminated and designed to fit within an individual windowpane, so that a sign is not interrupted by window mullions.

Center Identification: The project proposes a 6'-3" tall freestanding sign along the site's frontage. One freestanding monument sign may be permitted to identify the center, pursuant to the sign ordinance, Section 17.56.180. The maximum allowable sign area for the freestanding sign is 40-square feet for each acre of land. In this case, the 0.41-acre site would be permitted a maximum freestanding sign area of 16.4-square feet. The project proposes a freestanding sign face measuring 6-feet by 2.5-feet or 15-square feet, in compliance with the maximum allowable area. The minimum setback for freestanding signs is five-feet. As shown, the freestanding sign does not meet the setback requirement, however the applicant is aware of the setback standard and is preparing an alternative location that meets the setback for Planning Commission consideration.

Landscaping and Irrigation: The project proposes irrigated landscaping throughout the site and a variety of ground covers, and low and medium height bushes. A common open space lawn area is proposed at the rear of the site. A total of 11 new trees are proposed including six 24-inch box trees and five 15-gallon trees. The irrigation system will utilize recycled water.

In review of the landscape plan, staff notes that sufficient numbers of plants are proposed although some of the plantings near the street may not be sufficiently hardy for their street front location and may be susceptible to freezing. Conditions of approval included in the resolution recommend the landscape architect provide alternative plant selections in the front landscape area. Staff also suggests placement of landscape boulders in strategic locations to enhance and provide variety to the landscape environment.

Front landscape dimension: As previously mentioned on the zoning compliance section above, Section 17.20.040(K) of the C-S zoning district states that not less than 10 feet of a required yard adjoining a street shall be landscaped and permanently maintained. The project provides a 10-foot landscape strip across the property frontage. However, approximately six-feet of the ten-foot wide landscape strip is within the public right-of-way, which is not the project site's required yard. Four-feet of the 10-foot landscape strip adjoining the street is within the project site's required front yard. However, the proposed building is setback over 30-feet from the front property line which provides additional front yard and architectural foreground landscaping, including a 25-foot wide and 30-foot deep landscaped area along the northern property frontage. The project proposes three new 24-inch box trees within the 30-foot front setback, spaced across the sites and in front of the building to provide additional front yard landscape enhancement. Staff believes there may be room for two or three additional trees adjacent to the public sidewalk that would provide additional public benefit along the property frontage.

Expanding the front yard landscape width adjacent to the front sidewalk to achieve a 10-foot wide planter width would impact the vehicle turn-around and likely eliminate two parking spaces. Staff believes that the 30-foot building setback with front yard and architectural foreground landscaping as proposed, enhanced further with two or three

additional street trees, provides an appropriate balance of landscape and hardscape and in total, meets or exceeds the minimum 10-foot width front landscape requirement.

Trees: An arborist report was prepared for the proposed development which evaluates 16 trees associated with the proposed development; four on-site and 12 immediately adjacent trees with canopies that over-hang the project site. The project proposes to remove the four on-site trees, two of which (#21 and #30) meet the City's "protected" criteria. Tree #21, a Valley Oak, is identified as having "fair" health and "poor" structure. Tree #30, a Coast Redwood, is identified as having "good" health and "poor" structure with a high failure potential. To compensate for the loss of these two protected trees the arborist report recommends six 24-inch box trees and two 15-gallon replacement trees, and a maintenance and monitoring program as a condition of project approval. In addition to the eight required replacement trees, the project landscape plans includes three additional 15-gallon trees for a total of 11 trees to be planted throughout the site. Proposed replacement trees are European Hornbeam (five 24-inch box), Chinese Pistache (one 24-inch box) and African Sumac (five 15-gallon).

The remaining 12 trees that will be potentially impacted by the proposed construction are located on adjacent properties to the north and south. Preconstruction root-pruning and canopy clearance pruning, under the direction of the project arborist, is recommended. The arborist report recommends a simple direct cable to support weakly attached stems of tree #18 on the adjacent property to the north. Any work performed off-site by the applicant, such as recommended for tree #18, can only be performed with the permission of the property owner. The arborist report includes the appraised value of trees to be preserved and protected as part of the proposed development plan. Conditions of project approval require compliance with the arborist report, planting replacement trees, and bonding of protected trees.

Parking and paved areas: A discussion of the shared on-site parking is included in the use permit section. From a design perspective, the parking lot is composed of a combination of pervious pavers, concrete and stamped concrete. Overall the paved areas throughout the project site are appropriately sized and detailed for the scale of the development.

Vehicle Circulation: Ingress and egress to the site occurs through a conventional two-way circulation pattern. Parking stalls are designed with vehicle overhangs to allow for wider walkways, rather than concrete wheel stops that are not durable and can be a tripping hazard in parking areas. A hammerhead turn-around is provided to enable service vehicles the ability to turn around on-site and exit onto Scotts Valley Drive in a forward direction. A service vehicle turning template is provided on civil engineering plan sheet, C2.1, to demonstrate the vehicle turning movement.

Fence Details: The project is proposing to maintain the existing 8-foot tall solid wood and lattice fence along the rear (west) property line due it's relative new age, good condition, and unique design. The applicant is proposing a new 8-foot tall solid wood fence, pursuant to Section 17.46.110(F), along the shared property line with the auto repair facility to the north. Along the southern property line, which is shared with a number of residential units, the applicant is proposing to install a new 6-foot tall good neighbor solid wood fence. Conditions of approval require that all fences be designed

and constructed with over-lapping fence boards with no air gaps to reduce noise levels on adjacent properties. The applicant has expressed a willingness and desire to work with all adjacent property owners along shared property lines to ensure that all new and existing fences are permanently maintained.

Environmental Determination: The project is exempt from the California Environmental Quality Act (CEQA) pursuant to Categorical Exemption 15332, In-Fill Development Projects.

Class 32 consists of projects characterized as in-fill development that: are consistent with the applicable general plan and zoning designations and regulations; are within city limits on a project site of no more than five acres substantially surrounded by urban uses; the project site has no value as habitat for endangered, rare or threatened species; approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality; the site can be adequately served by all required utilities and public services.

In this case, the project site is consistent with the C-S, Service Commercial General Plan and Zoning designations, is within the city limits on a 0.41-acre site surrounded by developed urban uses. The site was previously developed, and has no value as habitat for endangered, rare or threatened species. Approval of the proposed mixed-use project would not result in any significant effects relating to traffic, noise, air or water quality. Further, the site is adequately served by all required utilities and public services. The project is therefore exempt from CEQA.

PUBLIC NOTICE & COMMENT

A public notice was posted on the site and mailed to surrounding property owners within 300 feet pursuant to State law. One comment letter has been received (Attachment 7).

FINDINGS AND CONCLUSION

Based on this analysis and the attached Conditions of Approval in Exhibit A, staff believes that the required findings can be made, as shown in the attached Resolution. Other reviewing City Departments and public agencies have reviewed the proposed use and plans and have recommended approval. Staff recommends that the Planning Commission approve Use Permit U17-002 and Design Review DR17-003, subject to the attached Resolution and Conditions of Approval in Exhibits A and B.

ATTACHMENTS

PAGE

Resolution to Approve Use Permit U17-002 & Design Review DR17-003
(Action Item)

- Exhibit A – Conditions of Approval (Attached)
- Exhibit B – Planned Sign Program (Attached)
- 1. Location Map 12
- 2. Project Plans (Attached)
- 3. Transportation and Parking Technical Report prepared by: J. Daniel Takacs, TE dated August 1, 2017 (Attached)

4. Acoustical Engineering Study prepared by: magic sound dated February 27, 2017 (Attached)
5. Geotechnical Investigation prepared by: Dees and Associates, Inc. dated February 2017 (Attached)
6. Tree Resource Evaluation prepared by: James P. Allen and Associated revised dated October 20, 2017 (Attached)
7. Comment letter received from Richard W. Smith dated October 23, 2017 (Attached)

* *Please note that the project plans are provided in the Planning Commission packets. However, the project plans and file are available for public review in the Planning Department Monday-Thursday 8AM-12PM, or by appointment, at City Hall, One Civic Center Drive, Scotts Valley. Please call the Planning Department at (831) 440-5630 if you have any questions.*

RESOLUTION NO.
A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY
OF SCOTTS VALLEY APPROVING USE PERMIT U17-002 AND
DESIGN REVIEW DR17-003 TO ALLOW CONSTRUCTION OF A NEW
11,592-SQUARE FOOT, THREE-STORY MIXED-USE DEVELOPMENT
IN THE C-S, SERVICE COMMERCIAL ZONING DISTRICT AT 4803
SCOTTS VALLEY DRIVE / APN 022-082-76

WHEREAS, the Planning Department of the City of Scotts Valley has received Use Permit and Design Review applications to allow the construction of a new three-story mixed-use development in the Service Commercial zone, filed by Robert Kim, applicant and owner, at 4803 Scots Valley Drive / APN 022-082-76.

WHEREAS, the application was reviewed for completeness and is determined to be a “project” as defined by the California Environmental Quality Act (CEQA);

WHEREAS, the project is Categorically Exempt from further review under the California Environmental Quality Act under Section 15332, Class 32, In-Fill Development (project site in urbanized area of less than five acres);

WHEREAS, the project was reviewed by the Planning Commission at a special meeting on Thursday, November 9, 2017; and,

NOW THEREFORE, the Planning Commission of the City of Scotts Valley hereby resolves as follows:

SECTION 1: The environmental determination represents the independent judgment of the City.

SECTION 2: The CEQA categorical exemption is hereby approved.

SECTION 3: The Planning Commission of the City of Scotts Valley does hereby specifically make the following Use Permit findings, as further clarified in the staff report dated November 9, 2017:

- 1. *The location of the new three-story mixed-use building is in accordance with the objectives of the zoning ordinance and the purposes of the zoning district in which the site is located.*** The subject property is located in the City’s Service Commercial (C-S) zoning district. The proposed three-story mixed-use development is consistent with provisions of C-S zone, which contains specific development standards to accommodate mixed-use developments. The project provides ground floor retail, second floor office space, and six residential apartment units on the third level. The project is proposed on a currently vacant and under-utilized site along this commercial corridor in Scotts Valley. Therefore, the project is in accordance with the objectives of the Service Commercial zoning district.
- 2. *The establishment, maintenance, or operation of the new three-story mixed-use***

building will not, under any circumstances of the particular case, be detrimental to the health, safety, peace, morals, comfort, and general welfare of persons residing or working in the neighborhood of the proposed use or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the city. The proposed mixed-use development is proposed on a currently vacant and under-utilized site prominently located on Scotts Valley Drive. The building provides retail and office space, adding to the City's employment and tax base, and provides six residential apartment units. The project will therefore not be detrimental to the health, safety or welfare of the City.

SECTION 4: The Planning Commission of the City of Scotts Valley does hereby specifically make the applicable Design Review finding, as further clarified in the staff report dated November 9, 2017:

1. ***The siting of any structure on the property as compared to the siting of other structures in the immediate neighborhood.*** The proposed mixed-use building is located centrally on the lot, setback approximately 30-feet from the front property line, exceeding the front setback requirements, and is in compliance with required rear and side yard setbacks for the commercial and residential uses. While there are no other mixed-use buildings on immediately adjacent lots, the project's site plan is similar to other new and existing commercial and residential buildings in the vicinity in that the project maintains an appropriate front setback, contains surface parking, landscape treatment throughout the site, protects existing neighboring trees and proposes 11 new 15-gallon and 24-inch box trees. The project is therefore consistent with other structures in the immediate area.

2. ***Materials, colors, proportion, mass and detail. All structures shall be in good proportion, have simplicity of mass and detail and be compatible in appearance with surrounding structures. There shall be an appropriate use of materials; colors shall be appropriate within the context of use and should blend with surrounding structures.*** The building provides articulation, visual interest and details at each level including decorative trellises, glass skylights, balconies with wood and metal railings, fascia bands, and roof overhangs that provide shade, add visual depth and "caps" the building design. Project materials include coursed (stacked) fieldstone on the ground floor retail façade and cement plaster finish on the second and third levels. Exterior materials are durable and provide visual weight to "anchor" building with earth-tone colors that get lighter on the second and third levels. Roof-mounted equipment is located toward the center of the roof to reduce its visual presence and placed behind sound-attenuating mechanical screening. A stairwell and elevator tower on the northern façade would be clad in matching coursed fieldstone and a window to add natural light to the interior space. The tower adds design interest, incorporates a vertical element (similar to a chimney) and visually connects the commercial and residential uses. The elevator tower is also the location for the project's public art contribution. Overall the building design incorporates simple and well-conceived and executed details, which provide interest and add to the architectural composition.

3. ***The size, location, design, color, number, lighting and materials of all signs and outdoor advertising structures. No sign shall be approved in excess of the maximum limits set by this title, but the size or number of signs in any area subject to design control may be reduced below this maximum number or limit.***
 Tenant and center identification sign criteria proposed for this mixed-use project are consistent in size and number, and have been designed to integrate into building and site features. Individual tenant signs would be placed on an integrated architectural sign band on the ground floor retail storefront. Conditions of approval include a requirement for staff review of individual tenant signs as part of building permits for tenant occupancy.
4. ***Landscaping and Irrigation. Landscaping and irrigation plans shall be required on the site. Landscaping shall be in keeping with the character or design of the building. Existing trees shall be preserved wherever possible.*** The project proposes irrigated landscaping throughout the site and a variety of ground covers, and low and medium height bushes. A common open space lawn area is proposed at the rear of the site. The irrigation system will utilize recycled water. A total of 11 new trees are proposed including six 24-inch box trees and five 15-gallon trees. Conditions of approval require compliance with the project arborist report, which specifies tree preservation bonding, to insure preservation of existing protected trees. The proposed landscape and irrigation plan has been designed to enhance the building and hardscape improvements.
5. ***The size, location and arrangement of on-site parking and paved areas.***
 The project provides 19 on-site full-sized parking stalls to serve the mixed-use development. A traffic and parking study, prepared by a California registered traffic engineer, estimates the peak demand for the mixed-use building to be 19 stalls during weekday, late morning and early afternoon, hours. The report recommends the building owner limit residential parking to one vehicle per unit in the rental agreement as a way to minimize potential parking overage. On-site paving has been designed to incorporate paving details such as stamped concrete and pervious pavers to enhance the appearance of the site and accommodate storm water treatment.
6. ***Ingress, Egress and Internal Traffic Circulation. All the above factors shall be related to the setting or established character of the neighborhood or surrounding area.*** The project relocates the existing driveway to accommodate service vehicle access, circulation and on-site turn-around to allow vehicles to exit the site onto Scotts Valley Drive in the forward direction. Ingress and egress remains right-in and right-out due to the existing median island along the Scotts Valley Drive frontage. The project's vehicle circulation is therefore consistent with the establish character of the neighborhood and surrounding area.
7. ***Height and access to sunlight, setbacks, landscaping and use of materials for articulation and visual relief for fences and walls over eight feet tall or fences over three feet tall in front yards when across from Hwy. 17.*** The project proposes to maintain the existing eight-foot high fence adjacent to the residential units to the west, and construct new six and eight-foot height solid wood fences along the shared property lines to the south and north, respectively.

8. ***Arbors in front yards, over 20 square feet in roof area or between eight and 10 feet in height: the design compatibility with the main structure and structures in the neighborhood, the mass and scale of the arbor, line of sight visibility for pedestrians and motorists in addition to other applicable standards of this section.*** The project proposes architectural arbors above the first and second levels of the building. The arbors have been designed as an architectural feature to provide visual interest and shade within the scale of the building. The arbors would be affixed to the building setback approximately 30-feet from the street and would not create any line of sight impacts to pedestrians or motorists.
9. ***Required Findings. The planning commission shall determine from data submitted whether the proposed building, structure or other improvement will meet the design standards prescribed in this section and in this title. The application may be disapproved, may be approved as submitted or may be conditionally approved. The approval shall be noted by an endorsement of the planning department on the submitted plans as approved.*** The project details are well conceived, thoughtful and appropriately executed for the scale of the site and the proposed mixed-use. The project is consistent with the C-S, Service Commercial zoning district and design review guidelines for commercial buildings. The project provides an appropriate and code-compliant balance of landscaped open space and paved surfaces. The building design incorporates sound attenuating features and materials to ensure that interior and exterior spaces are compliant with noise limits for sensitive noise receptors. The project is situated on a currently vacant and under-utilized site along an important commercial corridor in Scotts Valley and provides additional retail and office space as well as six residential apartment units

SECTION 5: After careful consideration of the application and related materials, plans, maps, facts, exhibits, staff report, testimony and other evidence submitted in this matter, and incorporated herein by this reference, the Planning Commission of the City of Scotts Valley does hereby approve Use Permit U17-002 and Design Review DR17-003 to allow a three-story, mixed-use develop at 4803 Scotts Valley Drive / APN 022-082-76, subject to the Conditions of Approval, set forth in the attached Exhibit A which is attached hereto and incorporated herein by this reference.

THE ABOVE AND FOREGOING RESOLUTION was duly adopted and passed by the Planning Commission of the City of Scotts Valley at a regularly scheduled meeting held on the 9th day of November, 2017, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

Derek Timm
Planning Commission Chair

Taylor Bateman
Acting Community Development Director

Exhibit A

Conditions of Approval (#1 - #68)

Legal

1. The developer has agreed to and shall defend, indemnify and hold harmless the City of Scotts Valley, its officers, agents and employees from any claim, action or proceeding against the City or its officers, agents or employees to attach, set aside, void or annul any action of the City in connection with approvals under the California Environmental Quality Act or with respect to approval of the project, which action is brought within the time period(s) prescribed by law. The City shall promptly notify the developer of any such claim, action or proceeding and shall fully cooperate in defense.
2. The developer/applicant shall sign the Conditions of Approval agreeing to the Conditions of Approval prior to issuance of any grading/building permits, transfer of title, or within 30 days of approval of these planning permits, whichever occurs first.
3. The developer shall obtain all required demolition, grading, improvement plans, and building permits and pay all appropriate required fees before starting any grading/earth disturbance on the property.

Planning Department

4. The approved planning permits include a Use Permit and Design Review to build a new three-story mixed-use building composed of approximately 1,900 square feet of ground floor retail, 2,530 square feet of second floor office, six residential apartment units on the third floor, and related property improvements on a 0.41-acre site, as shown in the plans prepared by Daniel Silvernail Architects, Inc., C2G / Civil Consulting Group, Inc., Gregory Lewis Landscape Architect stamped approved, which are on file in the Planning Department.
5. All site improvements shall be in conformance with the plans stamped approved, unless otherwise conditioned in this Exhibit to the satisfaction of the Community Development Director (CDD) and City.
6. Any future changes to the approved plans that the developer and/or other reviewing agencies initiate and/or propose, shall require prior review and approval by the CDD/City and CDD confirmation regarding the level of environmental review and planning permits. As determined by the CDD, minor changes may be approved by the CDD while major changes may require review and approval by the Planning Commission and/or City Council, paid by the developer.

Grading

7. All recommendations in the geotechnical report prepared by project geotechnical engineer, Dees & Associates, Inc., dated February 2017, are incorporated as conditions of project approval.
8. The limits of grading shall be clearly marked on the site prior to the issuance of a grading or building permit.
9. The location of all soil to be exported shall be reviewed and approved by the Building Department prior to issuance of a grading or building permit.

Noise

10. All recommendations in the Acoustic Engineering Study, prepared February 27, 2017, are incorporated as conditions of project approval.
11. Roof-mounted mechanical equipment screening shall be designed with sound attenuating features to reduce noise levels on neighboring properties.

Trees

12. All recommendations in the Arborist Report dated May 14, 2017, revised October 2017, are incorporated as conditions of project approval.
13. No tree removal shall occur until grading/building permit issuance.
14. The project developer shall place a surety bond in an amount equal to the value of the preserved trees as shown in the project Arborist Report. The surety bond shall be deposited with the city prior to issuance of a grading/building permit for the project. The monetary value shall be reviewed and approved by the CDD. If damage occurs to the preserved trees during development and/or construction, funds will be drawn from the deposited amount. Funds remaining in the account will be returned to the developer upon final inspection of the project.
15. Prior to the issuance of any grading or building permits, the project arborist shall inspect tree protection fencing and the completion of pre-construction treatments.
16. The project arborist shall routinely inspect the development site through the term of the project.

Landscaping

17. The landscape architect shall provide alternative street front landscape selections for CDD review and approval as part of the building permit review process.

18. The landscaping improvements shall be permanently maintained and irrigated.
19. The landscape plan shall incorporate natural features, such as boulders, to enhance the landscape area.

Lighting

20. The final exterior lighting plan shall comply with regional dark sky policies and shall be reviewed and approved by the CDD prior to issuance of building permit of vertical construction.
21. Any pole lights installed within the project site shall use shielded light fixtures with pole heights not to exceed 12 feet, consistent with City policies and design guidelines. Exterior light levels are to be at the lowest level and carefully controlled for security, aesthetics, safety and identification without interfering with nearby land uses.
22. All exterior building lighting, including overhead lighting in the porte-cochere, shall be designed to integrate into the building architecture with shielded and recessed light sources with final light fixture approval prior to the issuance of any building or grading permit.
23. All exterior lighting shall be the minimum necessary for security and all lighting shall be down directed with the light source not directly visible from adjacent properties. Where deemed necessary by the CDD light cutoffs/shields shall be installed.

Signs

24. All commercial signage shall comply with the Planned Sign Program as provided in Exhibit B.

Affordable Housing

25. Prior to the issuance of any building or grading permit, the developer shall pay the affordable housing in-lieu fee in effect at the time of permit issuance.

Building Department

26. The developer shall obtain any required grading and/or building permit(s) and pay applicable fees.
27. Winter grading shall require prior review and approval by the City.
28. The developer shall pay all applicable City development impact fees before grading and/or building permit issuance.

29. The developer shall pay school impact fees to the Scotts Valley Unified School District before building permit issuance.
30. All trades of electrical, plumbing and mechanical will be issued under one building permit for said project (General Contractor permittee).
31. All buildings shall be designed to comply with the current codes in effect at the time of building permit issuance.
32. The building permit plans must comply with the current California Building Code (CBC) for water-conserving fixtures and fittings and with the CA Energy Commission Building Energy Efficiency Standards, which includes energy-saving fixtures and appliances to be used throughout the building.
33. All structures shall comply with the most current California Energy Commission Standards (Title 24).
34. Provide an EV charging station.
35. All new construction shall comply with the City's current Green Building Guidelines, which requires various low-impact-development and resource efficient techniques, to the satisfaction of the CDD.
36. Structural calculations shall be submitted and wet-signed by the Engineer of record.
37. Provide names of Special Inspectors with certifications as required.
38. A soils report by a qualified geologic engineer shall be submitted with the application for any building permits.
39. All new utilities shall be installed underground.
40. The developer shall comply with the City's standard erosion control measures. The plans submitted for a building permit must include best management practices (e.g. erosion control practices and procedures) during construction, which include complying with Regional Air Quality Control Board emissions for construction equipment.
41. Site drainage erosion control and foundation plans must be reviewed and approved by a soils engineer.
42. The developer shall submit a plan review letter from the project Geotechnical Engineer confirming that the construction documents comply with the project geotechnical engineer's recommendations.
43. To ensure that City requirements are met, the developer shall specify to the Building Official the off-site disposal location of any exported soil material at a

pre-construction meeting or before grading permit issuance. If the disposal site is located outside the City, the site shall be a legal facility such as a licensed landfill or permitted fill site.

44. Developer shall submit a plan showing temporary (during construction) and permanent erosion control measures will need to be submitted to the Regional Water Quality Control Board (RWQCB), the agency that administers NPDES, and the City Building Department for review and approval.

City Public Works Department- Engineering Division

45. Engineered Improvement Plans shall be submitted for all on site and off site work and will be approved by the Public Works Director/City Engineer. On-site and off-site (encroachment) civil engineering permits must be issued by the City prior to commencing any work. Improvement Plans shall include any necessary grading, drainage, masonry retaining walls, driveway, utilities, utility pole relocation, frontage improvement and/or repair of sidewalk, curb and gutter or similar facilities required satisfying tentative map conditions to the satisfaction of the Public Works Director/City Engineer. All improvements shall conform to the design standards contained in text and illustration in the "City of Scotts Valley Standard Details", latest revision adopted by the City Council.
46. The project shall connect to the City's recycled water system.
47. Pursuant to City Council action on March 3, 2010, the Applicant shall modify the Traffic Impact Study to address the Mount Hermon Road/Scotts Valley Drive and Mount Hermon Road /La Madrona Drive intersections to determine the additional peak hour trips through the intersections. Specifically AM and PM peak hour trips for Mount Hermon Road /Scotts Valley Drive and PM only peak hour trips for Mount Hermon Road /La Madrona Drive. The study will also determine if the additional trips will degrade the Level of Service (LOS) of the intersections. The findings of the study will determine the amount owed for the Mount Hermon Road traffic mitigations fair share contribution. The Applicant shall conclude this study and pay any associated fees prior to the issuance of a Building or Grading permit.
48. Applicant shall relocate driveway approach and replace curb ramp with standard sidewalk, curb and gutter. Applicant shall construct street improvements for the full parcel frontage in accordance with the City of Scotts Valley Standard Details, latest revision, adopted by the City Council.
49. The project shall connect to the sanitary sewer system and existing septic systems, if any, shall be properly abandoned.
50. Engineered improvement plans for all work, signed and prepared under the direction of a registered civil engineer, shall be approved by the Public Works Director/City Engineer prior to commencing work.

51. All work in the public right-of-way will require an encroachment permit application made to the satisfaction of the Public Works Director/City Engineer. The civil on-site work, as plan reviewed by the Public Works Department, will require an on-site civil engineering permit and inspection..
52. All public improvements shall be guaranteed by written Agreement with the city, Faithful Performance Bond, and Labor and Material Bond, to the satisfaction of the Public Works Director/City Engineer.
53. Pre-Construction Meeting: In order to ensure that project details are communicated to the various parties responsible for constructing the project, prior to any disturbance on the property, with the exception of installation of temporary construction fencing demarcating the disturbance envelope, tree protection fencing, and silt fencing, the developer shall convene a pre-construction meeting on the site. The following parties shall attend: the developer, the grading contractor supervisor, the project architect, the project arborist, the project civil engineer, City of Scotts Valley Planning staff, City Engineer and Building Inspector. The temporary construction fencing demarcating the disturbance envelope, tree protection fencing, and silt fencing will be inspected at that time.
54. All signing and striping shall be approved and completed as required by the Public Works Department, and shall be in conformance with current editions of Transportation and Traffic Engineering Handbook, by the Institute of Transportation Engineers, and the State Department of Transportation "Standard Specifications".
55. Applicant shall construct storm drain facilities in conformance with data and analysis in the adopted City of Scotts Valley Storm Drain Master Plan, December 1989 and in accordance with the city's SWMP Ordinance No. 184.1.
56. Stormwater Management Plan:
A registered civil engineer shall provide storm (hydrologic and hydraulic) calculations for appropriate storm drain facilities to control on-site drainage and mitigate off-site impacts. The design shall follow the criteria contained in the City of Scotts Valley Standard Details and the data and analysis contained in the latest adopted City of Scotts Valley Storm Drainage Master Plan. Development shall not increase the rate of flow (cubic feet per second) or velocity (feet per second) of site run-off water to any off-site drainage areas beyond the measured or calculated pre-project rate and velocity. **See the Stormwater Technical Guide on the Scotts Valley City website for requirements and formatting under Public Works.**
57. Impervious area must be shown on cover sheet.

58. Applicant shall pay the cost to accomplish the utility design and construction to underground the telephone, electric power, and television cables in each project contained easement, private or public road frontage. This undergrounding of utilities to remove utility poles comes in addition to the state required undergrounding of transmission for the project and any new service connections.
59. The applicant shall repair any damage caused to the City streets [or the private roadway] by applicant or its contractors, consultants, and/or employees prior to issuance of a certificate of occupancy. A videotape log, DVD format, clearly showing the existing condition of [the applicable street] to the project site shall be presented to the Department of Public Works prior to the start of construction. Applicant is advised that, absent clear video evidence to the contrary, road damage must be repaired to the satisfaction of the City prior to issuance of a certificate of occupancy. Damage assessment will be at the sole discretion of the City.

City Public Works Department- Parks & Recreation Division

60. The developer shall comply with City Municipal Code Chapter 16.35, Dedication of Land for Park and Recreational Purposes.

City Public Works Department - Wastewater Division

61. Every sewer lateral crossing a curb line shall be marked with an "S" stamped in the face of the curb.

Scott Valley Fire Protection District

62. All development must comply with the California Fire Code as amended by the Scott Valley Fire Protection District.
63. Provide a rooftop access in the clock tower stairwell or via a utility on the third floor for access to any rooftop equipment or utilities.

Scott Valley Water District (SVWD)

64. The existing 5/8" meter serving the property must be abandoned and a credit will be applied to the properties account for a future meter purchase.
65. Plans submitted for building permit shall show the location of the existing 5/8" meter to be abandoned.
66. Every potable water meter will require a backflow device SVWD Detail 8, behind the meter.
67. Plans submitted for building permit shall include the following SVWD plan details: Detail 1-Service connections; Detail 2-Meter box installation; Detail 5-Gate valve

two-inch service connection; Detail 9-Fire service installation; Detail 11-Gate value installation; Detail 12-Value box lid markings; and Detail 13-Value box installation.

68. All recycled water systems must be designed according to the SVWD Rules and Regulations and must conform to the [Recycled Water Irrigation Systems Standard Notes and Details](#).

Signature of Robert Kim, Property Owner/Developer

Date

EXHIBIT B

Bay Mountain Center Planned Sign Program

General

1. All required building permits shall be obtained and the applicant shall pay all appropriate fees prior to construction or installation of any signage on the property.
2. All tenant identification signs shall be approved by the property owner in writing prior to issuance of a building permit, and consistent with the adopted sign program.

Center Identification Sign

3. One freestanding monument center identification sign shall be constructed and placed on the property generally as shown on plans approved by the Planning Commission.
4. The center identification shall include the street address and may include the name of the center. Individual tenant signs are not permitted on the center identification sign.
5. A wall-mounted pedestrian oriented tenant directory sign may be permitted near the entrance doors to the interior courtyard.

Tenant Identification Signs

6. Ground floor tenant signs are permitted on the Scotts Valley Drive frontage, and shall be located on the architectural sign bands between the storefront colonnades.
7. Individual tenant signs on the sign band may be illuminated and no larger than 2-feet high by 9.5-feet in length or 19.5-square feet maximum, centered on a colonnade sign band.
8. Each primary street-facing ground floor tenant, or one tenant leasing the entire first floor, may have one storefront identification sign. Repetitive signage is not permitted.
9. Ground floor tenant signs would ideally be placed on the colonnade sign band nearest the tenant's primary entry door.
10. Ground floor tenant signs may be internally illuminated channel letters or push-through routed letters with non-illuminated (opaque) background.

11. Signage for interior ground floor tenants, without street facing facades, may be placed on the front-facing architectural sign band located in the fourth street-facing colonnade under the porte-cochere. The size and design of such signs shall be consistent with the primary tenant signs. Depending on the number of interior tenants, a maximum of two interior tenant signs may be placed on the front-facing sign band, provided the signs are consistent in height and equally share the allowable sign length. For example, one sign on this band, may be 2-feet high by 9.5-feet in length, or two signs may be 2-feet high by 4.75-feet in length.
12. No commercial signage is permitted on the driveway colonnade.
13. All electrical raceways, conduits, and transformers serving the illuminated signs shall be concealed from view.
14. Second floor tenants, facing Scotts Valley Drive, may have one non-illuminated window sign, no larger than twenty-five percent of the window area, and designed to fit within one window pane, so the sign text is not interrupted by a window mullion.

Location Map



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4803 Scotts Valley Drive

J. Daniel Takacs, TE
150 Cherry Lane
Campbell, CA 95008
408-314-0625
DanTakacsTE@att.net

ATTACHMENT 3

August 1, 2017

Robert Kim
114 Lauren Circle
Scotts Valley, CA 95066

RE: 4803 Scotts Valley Drive Mixed Use Project, Scotts Valley, California

Dear Mr. Kim,

This letter provides a transportation impact analysis for the proposed mixed-use project located at 4803 Scotts Valley Drive in Scotts Valley, California. The proposed mixed-use project would consist of 6 residential apartments, 3,716 gross square feet of commercial office and 2,237 gross square feet of commercial retail space and would be accessed from Scotts Valley Drive, immediately south of Carbonero Way. Exhibit 1 shows the location of the project with respect to the local road network and Exhibit 2 shows the project site plan.

The volume of trips that the project would generate is relatively low and not at levels that would create significant impacts to the local street network. Based upon the existing traffic conditions on Scotts Valley Drive and the results of recently completed transportation studies for other projects in the area, traffic operations at the following intersections were analyzed for this study:

1. Scotts Valley Drive/Project Driveway
2. Scotts Valley Drive/Carbonero Way
3. Scotts Valley Drive/Victor Square

While the Scotts Valley Drive/Victor Square intersection is not in the immediate vicinity of the project, previously prepared transportation impact studies evaluated the intersection for possible signalization in the future. The proposed project will add traffic to the Scotts Valley Drive/Victor Square intersection. Therefore, it was included in this study.

Traffic operations at the study intersections are evaluated for the following conditions:

1. Existing Conditions
2. Existing Plus Project
3. Background Conditions (existing plus traffic from approved developments)
4. Background Plus Project Conditions
5. Cumulative Conditions
6. Cumulative Plus Project Conditions

In addition to the intersection impact analyses, corner site distance at the project driveway intersection with Scotts Valley Drive and parking are evaluated.

Existing Conditions

Road Network

The project is located in the southwest corner of the Scotts Valley Drive/Carbonero Way intersection.

Scotts Valley Drive is a 4-lane divided arterial in the vicinity of the project and **Carbonero Way** is a 2-lane collector. Exhibit 3 shows an aerial photograph of the Scotts Valley Drive/Carbonero Way intersection and the location of the project site.

Class II bike lanes are provided on both sides of Scotts Valley Drive at the project site. The project frontage is currently improved with curb, gutter and sidewalk. The Scotts Valley Drive/Carbonero Way intersection signal system includes crosswalks and pedestrian countdown signals across the north and east intersection legs.

The Scotts Valley Drive/Carbonero Way intersection is a “T” intersection with Carbonero Way as the east leg of the intersection and Scotts Valley Drive as the north and south legs of the intersection. There is no intersecting driveway or street on the west side of the intersection. Two through lanes are provided on Scotts Valley Drive in the northbound and southbound directions through the Carbonero Way intersection and left turn channelization is provided on the northbound and southbound intersection approaches. North and south of Carbonero Way, a two-way left turn lane is provided in the Scotts Valley Drive median. However, a median channelization island is located on Scotts Valley Drive along the project frontage that limits turning movements at the project driveway to right turns in and right turns out.

Transit Services

Santa Cruz Metro currently operates Bus Route 35A on Scotts Valley Drive. Route 35A provides weekday and weekend service between Santa Cruz Metro Transit Center and the Boulder Creek area. Route 35A bus stops are located on Scotts Valley Drive at Civic Center Drive, which is about 1,050 feet south of the project site, and Dunslee Way, which is about 600 feet north of the project site. Service headways are one-half hour on weekdays and one hour on weekends. Exhibit 4 shows the Santa Cruz Metro route map for Route 35A.

Existing Intersection Volumes

AM and PM peak period intersection turning movement counts were conducted at the Scotts Valley Drive/Carbonero Way intersection on Wednesday, February 1, 2017. The AM and PM peak hour intersection volumes recorded on the survey date at the Scotts Valley Drive/Carbonero Way intersection are shown on Exhibit 5.

Scotts Valley Drive/Victor Square intersection peak hour volumes documented in the transportation impact report for the Dunslee Way mixed-use project were utilized for this study.¹ The Scotts Valley Drive/Victor Square intersection peak hour volumes from the Dunslee Way mixed-use traffic study were increased to reflect 2017 conditions. The 2017 AM peak hour peak hour peak hour traffic volumes collected at the Scotts Valley Drive/Carbonero Way intersection are 2 percent higher than the AM peak hour volumes at the same intersection documented in the Dunslee Way mixed-use project traffic report. The 2017 PM peak hour peak hour peak hour traffic volumes collected at the Scotts Valley Drive/Carbonero Way intersection are 1 percent higher than the PM peak hour volumes at the same

¹ Traffic Impact Analysis for Proposed Development at Dunslee Way and Scotts Valley Drive, TJKM, April 2015.

intersection documented in the Dunslee Way mixed-use project traffic report. The volumes documented in the Dunslee Way mixed-use traffic study were increased 2 percent to reflect 2017 conditions.

Traffic Operation Evaluation Methodologies and LOS Standards

Intersection traffic operations were evaluated based on the Level of Service (LOS) concept. Intersection operations were evaluated using the Synchro analysis software. LOS is a quantitative description of an intersection and roadway's operation, ranging from LOS A to LOS F. Level of service A represents free flow, non-congested traffic conditions. Level of service F represents highly congested traffic conditions with unacceptable delay to motorists on the road segments and at intersections. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes.

For signalized intersections, traffic operations are evaluated based on the overall average control delay in seconds per vehicle. The average delay is then correlated to a level of service.

For one and two-way stop controlled intersections the delay in seconds per vehicle at the worst movement or approach is used to evaluate operations. The delay at the worst approach is then correlated to a level of service. LOS for each side street is based on the distribution of gaps in the major traffic stream and driver judgment in selecting gaps. Appendix A provides additional information regarding levels of service for signalized and unsignalized intersections.

Existing Intersection Operations

Existing AM and PM peak period intersection levels of service are shown on Exhibit 6. Intersection level of service calculation worksheets for the existing condition are contained in Appendices C (Scotts Valley Drive/Carbonero Way) and D (Scotts Valley Drive/Victor Square). Peak hour traffic signal warrant worksheets are provided in Appendix E.

The Scotts Valley Drive/Carbonero Way and Scotts Valley Drive/Victor Square intersections currently operate at LOS A overall during the AM and PM peak hours. The westbound stop-controlled Victor Square approach to Scotts Valley Drive operates at LOS D during the AM peak hour and LOS F during the PM peak hour. The Scotts Valley Drive/Victor Square intersection does not meet the peak hour volume traffic signalization warrants under existing conditions.

Existing Plus Project Conditions

The Existing Plus Project Condition evaluates traffic operations with the trips generated by the project added to existing traffic volumes. In addition, corner sight distance at the intersection of the project driveway and Scotts Valley Drive and parking are also analyzed in this section of the report.

Project Description

The proposed project proposes the construction of a three-story building on the currently vacant project site with the following land uses:

1. Story 1: 2,237 gross square feet of commercial retail space
2. Story 1: 3,716 gross square feet of commercial office space
3. Story 3: 6 residential apartments

The project will be accessed via one driveway to Scotts Valley Drive.

Project Trip Generation

The ITE trip generation rates and trip generation estimates for the proposed project are presented on Exhibit 7. Trip generation rates published by the Institute of Transportation Engineers, 9th Edition were utilized to estimate the volume of trips that would be generated by the project with the exception of the AM peak hour trip generation rate for the commercial retail use. The AM trip generation rate for the commercial retail use is based on data published by the San Diego Council of Governments. The ITE AM peak hour trip generation rate for the Specialty Retail land use is 6.84 trips per 1,000 square feet, which exceeds the ITE AM peak hour trip generation rate for Shopping Centers (ITE Land Use Code 820), which is 0.96 trips per 1,000 square feet, and the trip generation rate for General Office (ITE Land Use Code 701), which is 1.56 trips per 1,000 square feet. The relatively high AM peak hour trip generation rate for the Specialty Retail land use that is published by ITE suggests that the trip generation database utilized to develop the AM peak hour trip generation rate includes developments that include restaurant or food services that generate relatively high volumes of traffic during the AM commute period. The proposed project will not include restaurant or food service uses. Therefore, the data from the San Diego Council of Governments was used for this analysis.

The project would generate an estimated 180 trips per day, with 12 trips generated during the AM peak hour (7 inbound & 5 outbound) and 16 vehicle trips during the PM peak hour (7 inbound & 9 outbound).

Not all trips generated by the first-floor commercial retail use would be new trips added to the road network. Studies have shown that a portion of trips generated by commercial retail uses are captured from existing traffic on adjacent streets or diverted from traffic on nearby streets. For this analysis, a pass-by capture rate of 15 percent was utilized to estimate the number of trips that would be captured from the traffic on Scotts Valley Drive. After applying the 15 percent pass-by capture adjustment, the daily net trip generation for the project is estimated to be 165 trips, with 12 net new trips generated during the AM peak hour and 15 net new trips generated during the PM peak hour.

Project Trip Distribution and Assignment

The trip distribution pattern utilized for the Scotts Valley Drive/Dunslee Way mixed-use project was used for this study. The trip distribution assumptions are as follows:

1. To/From north via Scotts Valley Drive north of Victor Square – 45 percent
2. To/From south via Scotts Valley Drive south of project site – 40 percent
3. To/From east via Victor Square – 5 percent
4. To/From east via El Pueblo Road – 5 percent
5. To/From east via Carbonero Way – 5 percent

The project trip assignment at the Scotts Valley Drive/Carbonero Way intersection and at the project driveway is shown on Exhibit 8. Exhibit 8 shows the assignment of the net new external trips and the trip assignment for the pass-by captured trips. Project trips arriving from the south will make a u-turn from the Scotts Valley left turn lane at Carbonero Way to access the project site (3 trips during the AM peak hour and 2 trips during the PM peak hour). Project trips destined to the north via Scotts Valley Drive will make a u-turn from the Scotts Valley Drive median two-way left turn lane or from the left turn lane on southbound Scotts Valley Drive at Civic Center Drive (3 trips during the AM peak hour and 5 trips during the PM peak hour). The project trips on Scotts Valley Drive north of Carbonero Way (AM: 3 southbound and 2 northbound trips; PM: 3 southbound and 4 northbound trips) continue on and through the Scotts Valley Drive/Victor Square intersection.

Existing Plus Project Intersection Operations

The project trip assignment was combined with the existing traffic volumes to achieve Existing Plus Project AM and PM peak hour traffic volumes. The results are shown on Exhibit 9.

Exhibit 6 shows the Existing Plus Project intersection levels of service. Intersection level of service calculation worksheets for the Existing Plus Project Condition are contained in Appendices B (Scotts Valley Drive/Project Driveway), C (Scotts Valley Drive/Carbonero Way) and D (Scotts Valley Drive/Victor Square). Peak hour traffic signal warrant worksheets are provided in Appendix E.

With the project trips added to the road network, the Scotts Valley Drive/Carbonero Way and Scotts Valley Drive/Victor Square intersections operate at LOS A overall during the AM and PM peak hours, unchanged from Existing Conditions.

The westbound stop-controlled Victor Square approach to Scotts Valley Drive operates at LOS D during the AM peak hour and LOS F during the PM peak hour, unchanged from Existing Conditions. The Scotts Valley Drive/Victor Square intersection does not meet the peak hour volume traffic signalization warrants under Existing Plus Project conditions.

Per City of Scotts Valley standards, a project-generated increase in traffic is considered to have a significant impact at a signalized intersection if it meets either of the following criteria:

1. Intersection operations degrade from acceptable conditions (LOS C or better) under no Project Conditions to unacceptable conditions (i.e., LOS D, E or F) under plus Project Conditions for any study scenario; or
2. An increase of one percent in the critical volume-to-capacity ratio between no Project and plus Project Conditions under any study scenario for intersections already operating at unacceptable conditions (i.e., LOS D, E or F) under Existing Conditions.

For unsignalized intersections, a project is considered to have a significant impact if the intersection meets the peak hour signal warrant per the California MUTCD.

Based on the results of the Existing and Existing Plus Project intersection analyses, the project would not have a significant impact to traffic operations at the study intersections.

Traffic Operations at Project Driveway

The project will be accessed from one driveway on Scotts Valley Drive. Inbound and outbound movements at the project driveway would be limited to right turns in and right turns out because the Scotts Valley Drive median at the project driveway includes a raised median island.

The Scotts Valley Drive/Project Driveway intersection would operate at LOS A during the AM and PM peak hours, with the project driveway approach to Scotts Valley Drive operating at LOS B during both peak hours.

Driveway Corner Sight Distance – Typically, corner sight distance requirements are not applied to urban driveways. However, the area adjacent to the project driveway should be clear of any obstructions to ensure clear lines of sight are provided between motorists exiting the project driveway and motorists approaching the driveway on the intersecting street.

Based on a design speed of 40 miles per hour, the stopping sight distance for Scotts Valley Drive is 300 feet. This sight distance is met under existing conditions. To meet this requirement with the project, vegetation and/or signs should not be located north of the project driveway such that the line of sight between a motorist on southbound Scotts Valley Drive and a motorist exiting the project site is blocked. Any trees or plantings located north of the project driveway should be maintained/trimmed to ensure that adequate sight lines are maintained between the driveway and motorists approaching the driveway from the north. The project landscape planting plan, which is included in Appendix F, indicates that the frontage of the site, adjacent to the sidewalk will be planted with ground covers. This will ensure that a clear line of sight is provided looking to the north from the project driveway.

Parking

Nineteen marked parking spaces will be provided on-site. The parking spaces would be shared between the residential, retail and office uses of the project. Because the peak parking demand for each project use would occur at different times during the day, a shared parking analysis was prepared to evaluate the parking supply. The results of the weekday parking analysis are shown on Exhibit 10A and the results of the weekend parking analysis are shown on Exhibit 10B.

Parking generation rates for the three project uses were obtained from the ITE publication *Parking Generation*, 4th Edition, 2010. Time-of-day factors were obtained from the Urban Land Institute (ULI) publication *Shared Parking*, 2nd Edition, 2005.

The project's weekday shared parking demand is estimated to be 19 parking spaces and the weekend shared parking demand is estimated to be 12 parking spaces. With 19 parking spaces provided on the project site, the estimated peak shared parking demand of 19 spaces will equal the parking supply. Ideally, it is desirable for the parking supply to exceed the peak parking demand by 5 to 10 percent to provide a buffer over the estimated parking demand. The buffer helps to offset adverse impacts that can occur when few or no parking spaces are available. Because the peak parking demand estimated on a shared basis equals the parking supply, it is recommended that the residential units be limited to one vehicle per unit. This would reduce the parking demand for the project and reduce the potential for the on-site parking spaces to be fully occupied.

Recommendation: Limit vehicle ownership for the residential occupants to one vehicle per unit.

On-Site Circulation

The project parking area will be accessed directly from the driveway via a 26-foot wide drive aisle extending westerly from the driveway. The east-west drive aisle will provide access to 16 parking spaces. Three parking spaces will be provided parallel to Scotts Valley drive on the north portion of the site, immediately east of the project building.

A refuse storage facility will be located at the westerly end of the east-west drive aisle. Refuse trucks will have direct access to the storage facility and the bins located inside the facility from the parking lot drive aisle. Based on input from GreenWaste, the current solid waste provider for Scotts Valley, vertical clearance of over 14 feet should be provided through the parking lot. Refuse trucks currently operating by GreenWaste in Scotts Valley are 13.5 feet in height and GreenWaste staff have indicated that a height over 14 feet would be acceptable. A vertical clearance of 15 feet will be provide through the parking lot drive aisle under the second floor of the project building.

The distance between face of the storage facility and the building should be of adequate length to serve the space requirements of the dumping action of the refuse bin into the truck. The project site plan indicates that a horizontal distance of 14.5 feet will be provided between the refuse storage facility and the building. GreenWaste staff have indicated that this distance is adequate for their trucks. However, architectural drawings of the project building indicate that ornamental lattice would extend from the second floor of the building into the overhead clear space above the refuse truck when parked at the storage facility. It is recommended that the lattice overhang be reduced in length as necessary where it overhangs the drive aisle in front of the refuse storage facility and additionally laterally as necessary to provide the required overhead clearance for dumping operations. Appendix F contains a schematic design of the south elevations that shows the lattice overhang.

Recommendation: Eliminate or reduce in size the lattice overhang from the second floor on the west face of the project building over the driveway aisle in front of the refuse storage facility and additionally laterally north and south of the drive aisle as necessary to provide the necessary overhead clearance for refuse truck dumping operations.

To exit the facility, trucks will back out, using the area next to the three parking spaces in front of the project building as a turn around. A graphic showing a turning template when exiting the site is provided in Appendix F.

Background Conditions

The Background Condition analyzes traffic conditions with trips generated by approved but not yet built development added to existing traffic volumes.

Background Condition Traffic Volumes

The list of approved, but not built projects is shown on Exhibit 11. The list of approved projects was obtained from “City of Scotts Valley – Cumulative Trip Generation List – July 26, 2017.

ITE trip generation rates were used to estimate the volume of trips that would be generated by the approved projects. The approved projects would generate 12,158 trips per day, with 573 trips generated during the AM peak hour and 1,076 trips generated during the PM peak hour.

The AM and PM peak hour trips generated by the approved projects were assigned to the road network and combined with the existing traffic volumes to derive the Background Condition AM and PM peak hour volumes. The Background Condition peak hour traffic volumes are shown on Exhibit 12.

Background Condition Intersection Operations

Background Condition AM and PM peak period intersection levels of service are shown on Exhibit 6. Intersection level of service calculation worksheets for the Background Condition are contained in Appendices C (Scotts Valley Drive/Carbonero Way) and D (Scotts Valley Drive/Victor Square). Peak hour traffic signal warrant worksheets are provided in Appendix E.

The Scotts Valley Drive/Carbonero Way and Scotts Valley Drive/Victor Square intersections would operate at LOS A overall during the AM and PM peak hours under Background Conditions. The westbound stop-controlled Victor Square approach to Scotts Valley Drive would operate at LOS E during the AM peak hour and LOS F during the PM peak hour. The Scotts Valley Drive/Victor Square

intersection would not meet the peak hour volume traffic signalization warrants under Background Conditions.

Background Plus Project Conditions

The Background Plus Project Condition analyzes traffic conditions with trips generated by the project combined with Background Condition traffic volumes.

Background Plus Project Condition Traffic Volumes

The project trip assignment was combined with the Background traffic volumes to achieve Background Plus Project AM and PM peak hour traffic volumes. The results are shown on Exhibit 13.

Background Plus Project Intersection Operations

Exhibit 6 shows the Background Plus Project intersection levels of service. Intersection level of service calculation worksheets for the Background Plus Project Condition are contained in Appendices B (Scotts Valley Drive/Project Driveway), C (Scotts Valley Drive/Carbonero Way) and D (Scotts Valley Drive/Victor Square). Peak hour traffic signal warrant worksheets are provided in Appendix E.

With the project trips added to the Background Condition traffic volumes, the Scotts Valley Drive/Carbonero Way and Scotts Valley Drive/Victor Square intersections operate at LOS A overall during the AM and PM peak hours, unchanged from Background Conditions.

The westbound stop-controlled Victor Square approach to Scotts Valley Drive operates at LOS E during the AM peak hour and LOS F during the PM peak hour, unchanged from Background Conditions. The Scotts Valley Drive/Victor Square intersection would not meet the peak hour volume traffic signalization warrants under Background Plus Project conditions.

The Scotts Valley Drive/Project Driveway intersection would operate at LOS A during the AM and PM peak hours, with the project driveway approach to Scotts Valley Drive operating at LOS B during both peak hours.

Based upon the analyses of Background and Background Plus Project Conditions, the project would not have a significant impact to traffic operations at the study intersections.

Cumulative Conditions

The Cumulative Condition analyzes traffic conditions based on year 2037 traffic volume forecasts without the proposed project developed.

Cumulative Condition Traffic Volumes

The cumulative traffic volumes were estimated by applying a projected growth rate of 1 percent over 20 years to the existing AM and PM peak hour traffic volumes. The Cumulative Condition peak hour traffic volumes are shown on Exhibit 14.

Cumulative Condition Intersection Operations

Cumulative Condition AM and PM peak period intersection levels of service are shown on Exhibit 6. Intersection level of service calculation worksheets for the Cumulative Condition are contained in Appendices C (Scotts Valley Drive/Carbonero Way) and D (Scotts Valley Drive/Victor Square). Peak hour traffic signal warrant worksheets are provided in Appendix E.

Under Cumulative Conditions, the Scotts Valley Drive/Carbonero Way intersection would operate at LOS A during both peak hours and Scotts Valley Drive/Victor Square intersection would operate at LOS A overall during the AM peak hour and LOS B overall during the PM peak hours. The westbound stop-controlled Victor Square approach to Scotts Valley Drive would operate at LOS F during the AM and PM peak hour. The Scotts Valley Drive/Victor Square intersection would not meet the peak hour volume traffic signalization warrants under Cumulative Conditions.

Cumulative Plus Project Conditions

The Cumulative Plus Project Condition analyzes traffic conditions with trips generated by the project combined with Cumulative Condition traffic volumes.

Cumulative Plus Project Condition Traffic Volumes

The project trip assignment was combined with the Cumulative traffic volumes to achieve Cumulative Plus Project AM and PM peak hour traffic volumes. The results are shown on Exhibit 15.

Cumulative Plus Project Intersection Operations

Exhibit 6 shows the Cumulative Plus Project intersection levels of service. Intersection level of service calculation worksheets for the Cumulative Plus Project Condition are contained in Appendices B (Scotts Valley Drive/Project Driveway), C (Scotts Valley Drive/Carbonero Way) and D (Scotts Valley Drive/Victor Square). Peak hour traffic signal warrant worksheets are provided in Appendix E.

With the project trips added to the Cumulative Condition traffic volumes, the Scotts Valley Drive/Carbonero Way intersection would operate at LOS A during both peak hours and Scotts Valley Drive/Victor Square intersection would operate at LOS A overall during the AM peak hour and LOS B overall during the PM peak hour. These levels of service are unchanged from the Cumulative Condition results.

The westbound stop-controlled Victor Square approach to Scotts Valley Drive would operate at LOS F during the AM and PM peak hours, unchanged from Cumulative Conditions. The Scotts Valley Drive/Victor Square intersection would not meet the peak hour volume traffic signalization warrants under Cumulative Plus Project Conditions.

The Scotts Valley Drive/Project Driveway intersection would operate at LOS A during the AM and PM peak hours, with the project driveway approach to Scotts Valley Drive operating at LOS B during both peak hours.

Based upon the analyses of Cumulative and Cumulative Plus Project Conditions, the project would not have a significant impact to traffic operations at the study intersections.

Summary

The estimated trip generation for the project is relatively low (12 vehicle trips during the AM peak hour and 16 vehicle trips during the PM peak hour). Given existing traffic conditions on the local road network as well as projected background and cumulative traffic conditions, the proposed project would not significantly impact traffic operations at the study intersections.

Access to the site will be provided via one driveway to Scotts Valley Drive. Turning movements at the project driveway will be limited to right turns in and right turns out because of the median island on Scotts Valley Drive along the project frontage. Access will be satisfactory for the project.

It is recommended that a clear line of sight looking north from the project driveway equal to at least the stopping sight distance for Scotts Valley Drive (300 feet) be provided. Landscaping on the north side of the driveway should be designed to provide clear sight lines between the driveway and motorists approaching the driveway from the north. The project planting plan indicates that ground cover will be planted along the project frontage, adjacent to the sidewalk ensuring the sight lines are not obstructed.

On-site circulation for project generated vehicles including service vehicles will be adequate with the following qualification:

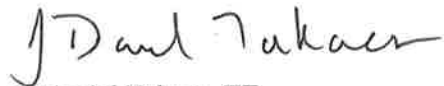
Recommendation: Eliminate or reduce in size the lattice overhang from the second floor on the west face of the project building over the driveway aisle in front of the refuse storage facility and additionally laterally north and south of the drive aisle as necessary to provide the necessary overhead clearance for refuse truck dumping operations.

The project's weekday shared parking demand is estimated to be 19 parking spaces and the weekend shared parking demand is estimated to be 12 parking spaces. The estimated peak parking demand will equal the parking supply on the project site. Because the peak parking demand estimated on a shared basis equals the parking supply, it is recommended that the residential units be limited to one vehicle per unit. This would reduce the parking demand for the project and reduce the potential for the on-site parking spaces to be fully occupied.

Recommendation: Limit vehicle ownership for the residential occupants to one vehicle per unit.

If you have any questions regarding this analysis or need additional information, please do not hesitate to contact me at your convenience.

Respectfully submitted,



J. Daniel Takacs, TE
CA TE 1549

attachments

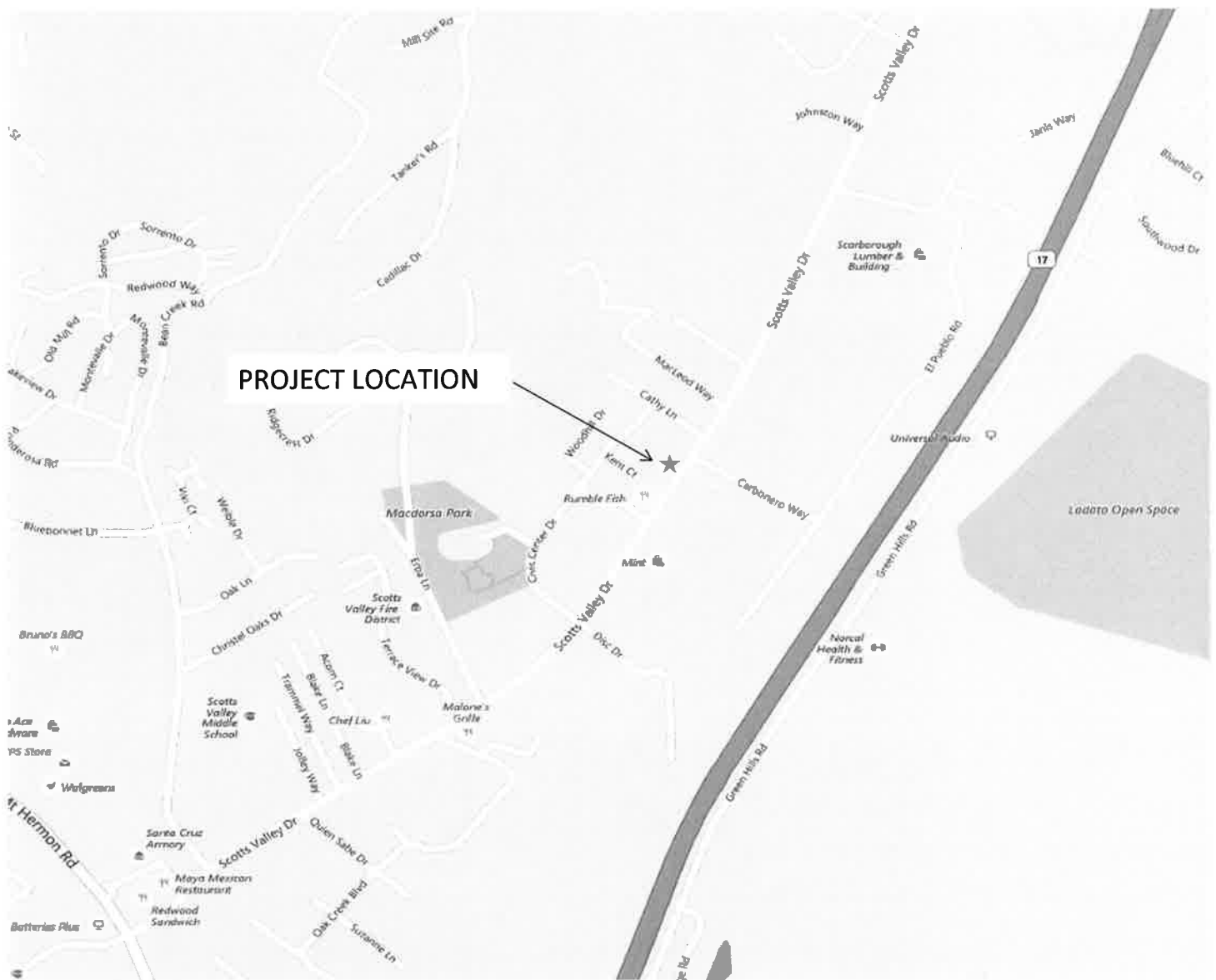


EXHIBIT 1
PROJECT LOCATION



EXHIBIT 3
SCOTTS VALLEY/CARBONERO WAY INTERSECTION

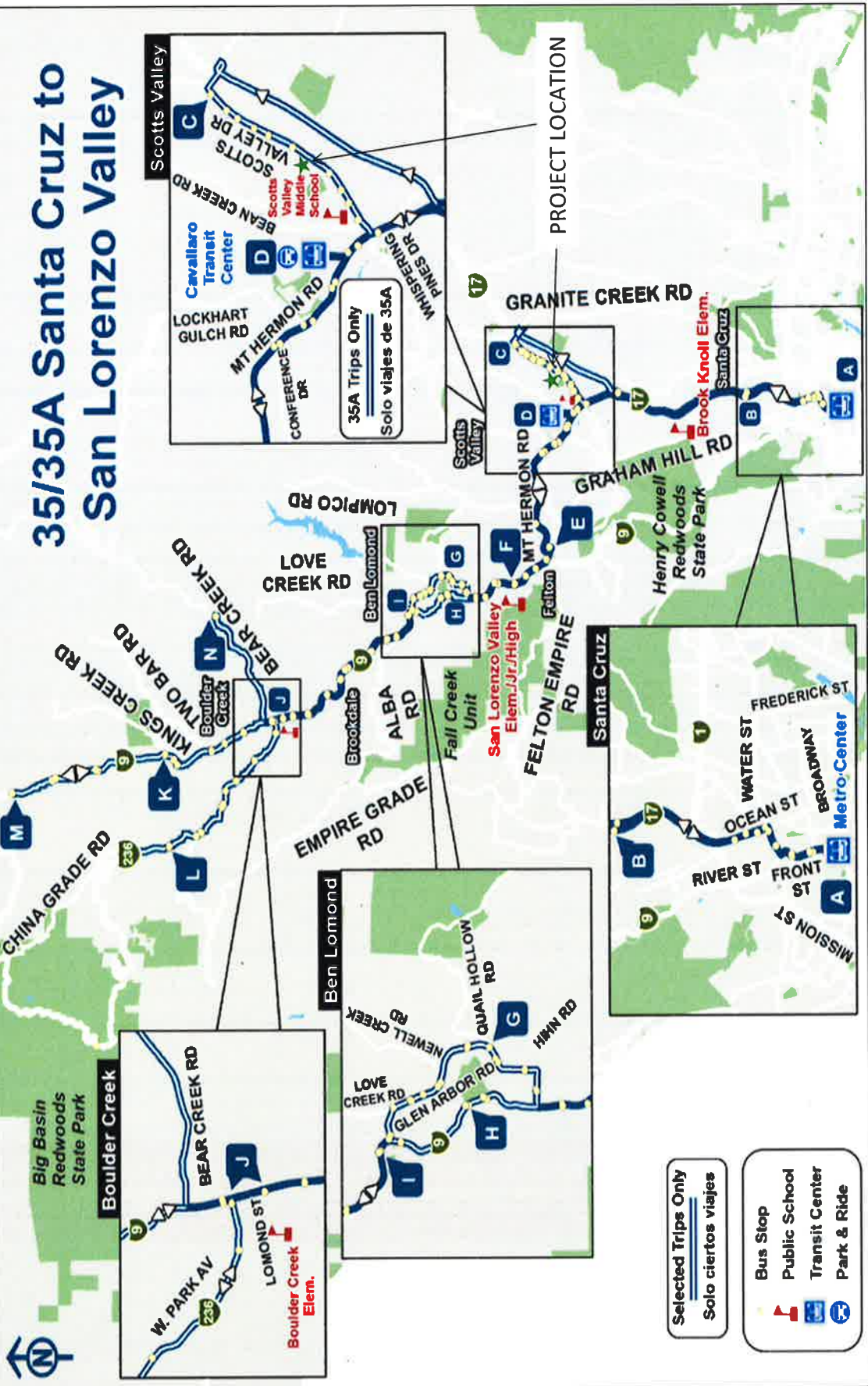


scmttd.com
(831)425-8600
Receive Route Alerts via email or text
message when schedules are impacted.

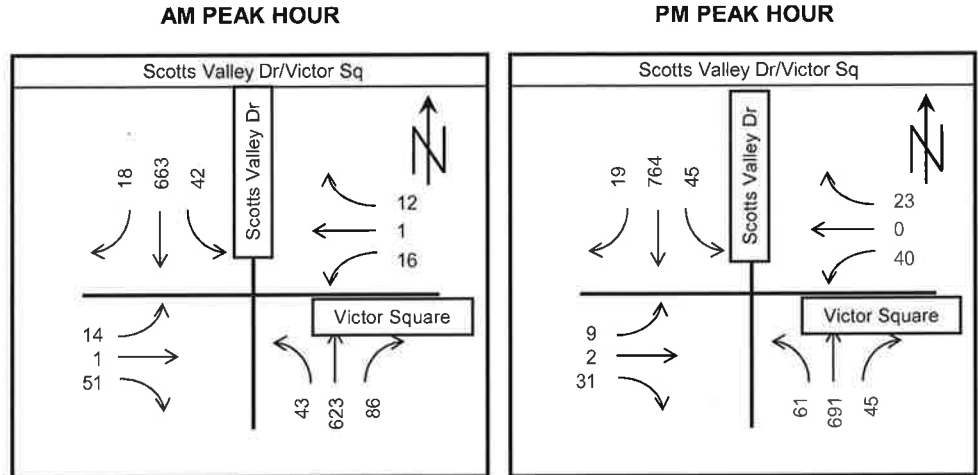


scmttd.com/es/suscribe
Reciba Alertas de Ruta via email o mensaje de
texto cuando los horarios se ven afectados.

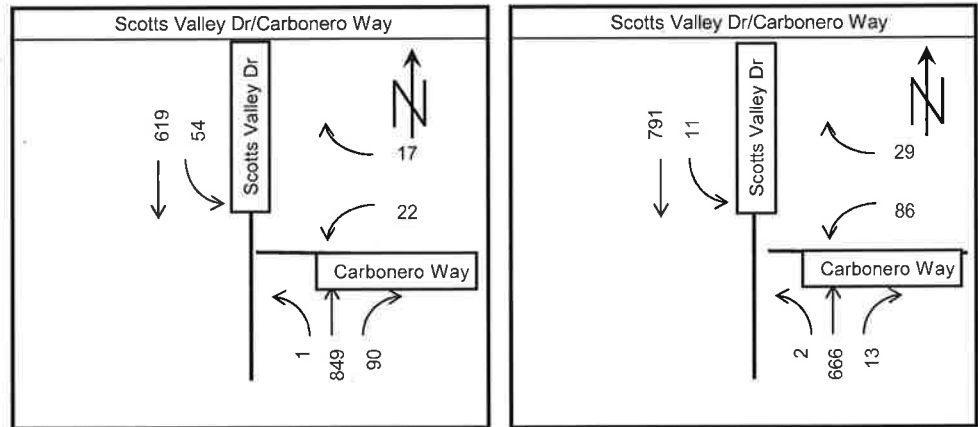
Scotts Valley / SLV Service
Effective / Vigente: Dec. 15, 2016



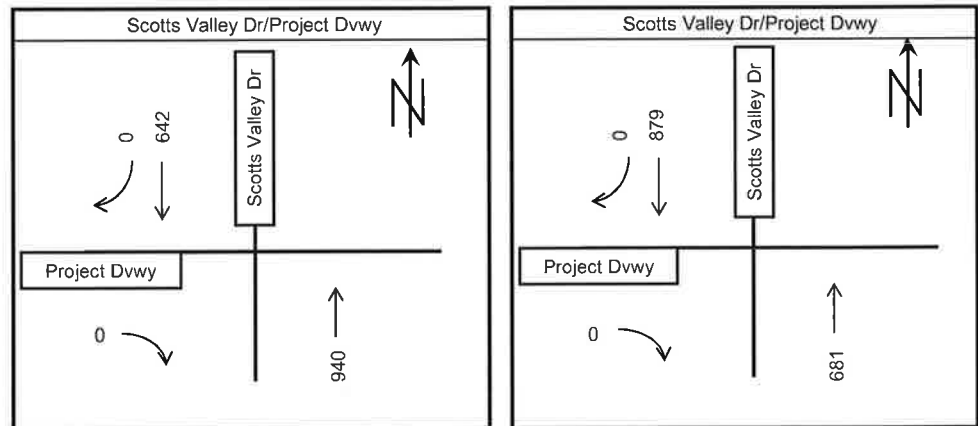
**SCOTTS VALLEY DRIVE /
VICTOR SQUARE**



**SCOTTS VALLEY DRIVE /
CARBONERO WAY**



**SCOTTS VALLEY DRIVE /
PROJECT DRIVEWAY**



**EXHIBIT 5
EXISTING
AM AND PM PEAK HOUR
TRAFFIC VOLUMES**

N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control		Existing Conditions			Existing Plus Project Conditions			Background Conditions			Background Plus Project Conditions			Cumulative Conditions			Cumulative Plus Project Conditions		
					AM Pk Hr		PM Pk Hr	AM Pk Hr		PM Pk Hr	AM Pk Hr		PM Pk Hr	AM Pk Hr		PM Pk Hr	AM Pk Hr		PM Pk Hr	AM Pk Hr		PM Pk Hr
					LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
1	Scotts Valley Drive	NB 2-T SB 1-T, 1-T/R EB 1-L/R	One-Way Stop Control	Overall Minor Approach	-	-	-	-	A 0.0 B 10.6	A 0.1 B 11.9	-	-	-	A 0.0 B 11.1	A 0.1 B 12.9	-	-	-	-	A 0.0 B 11.3	A 0.1 B 13.0	
2	Scotts Valley Drive	Carbonero Way	Signal		A 6.4	A 7.1	A		A 6.5	A 7.1	A 6.4	A 6.9	A 6.5	A 7.0	A 7.2	A 7.2	A 7.2	A 7.2	A 7.2	A 7.3		
3	Scotts Valley Drive	Victor Square	Two-Way Stop Control	Overall Minor Approach	A 1.9 D 33.6	A 3.9 F 73.2	A		A 1.9 D 33.8	A 3.9 F 75.6	A 2.1 E 48.2	A 8.4 F 234.9	A 2.1 E 48.7	A 8.4 F 234.9	A 2.8 F 62.4	B 12.7 F 300.4	A 2.8 F 63.3	B 12.6 F 300.4	A 2.8 F 63.3	B 12.6 F 300.4		

NOTES:

1. L, T, R = Left, Through, Right.
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound.
3. Analysis performed using 2010 *Highway Capacity Manual* Methodologies.
4. LOS standard for City intersections is LOS C.

**EXHIBIT 6
INTERSECTION
LEVELS OF SERVICE**

TRIP GENERATION RATES								
	Units	DAILY TRIPS	AM PEAK HOUR			PM PEAK HOUR		
			Inbound	Outbound	Trip Rate	Inbound	Outbound	Trip Rate
Residential - Apartments	Per Unit	6.65	20%	80%	0.51	65%	35%	0.62
Office	per 1,000 SF	11.03	88%	12%	1.56	17%	83%	1.49
Specialty Retail	per 1,000 SF	44.32	48%	52%	1.33	44%	56%	2.71
PROJECT TRIP GENERATION								
	Size	DAILY TRIPS	AM PEAK HOUR			PM PEAK HOUR		
			Inbound	Outbound	Trips	Inbound	Outbound	Trips
Residential - Apartments	6 units	40	1	2	3	3	1	4
Office	3,716 sf	41	5	1	6	1	5	6
Specialty Retail	2,237 sf	99	1	2	3	3	3	6
SUBTOTAL GROSS TRIPS		180	7	5	12	7	9	16
Pass-By Trips (Daily:15%, AM:15%, PM:15%)		15	0	0	0	1	0	1
TOTAL NET NEW EXTERNAL TRIPS		165	7	5	12	6	9	15

Notes:

1. Trip generation rates from ITE Trip Generation, 9th Edition, 2012., except AM peak hour rates. AM peak hour rates based on applying the percentage of daily trips occurring during the AM peak hour (3%) documented in (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region to the ITE Specialty Retail daily trip generation rate. $(44.32 \times 3\%)$

**EXHIBIT 7
PROJECT
TRIP GENERATION**

**EXTERNAL
PROJECT
TRIPS**

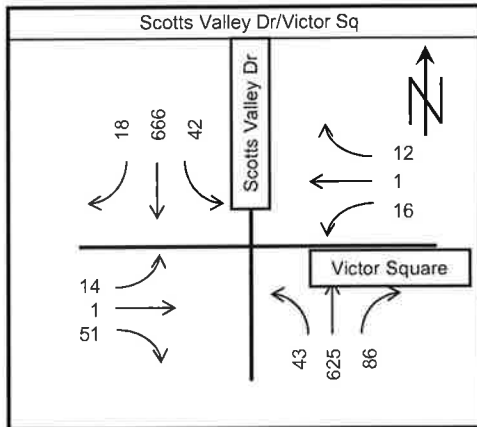
AM PEAK HOUR	PM PEAK HOUR
PROJECT SITE In= 7 Out= 5	PROJECT SITE In= 6 Out= 9
PROJECT SITE In= 0 Out= 0	PROJECT SITE In= 1 Out= 0
PROJECT SITE In= 7 Out= 5	PROJECT SITE In= 7 Out= 9

**PASS-BY
TRIPS**

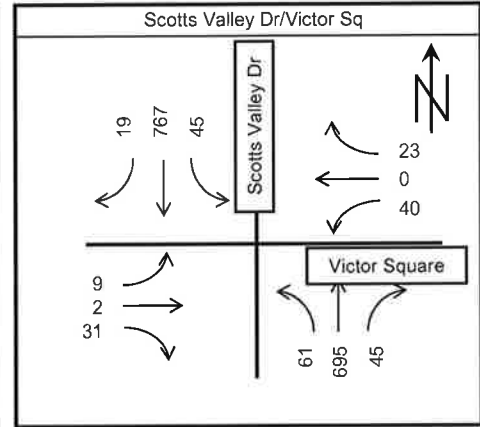
TOTAL

**SCOTTS VALLEY DRIVE /
VICTOR SQUARE**

AM PEAK HOUR

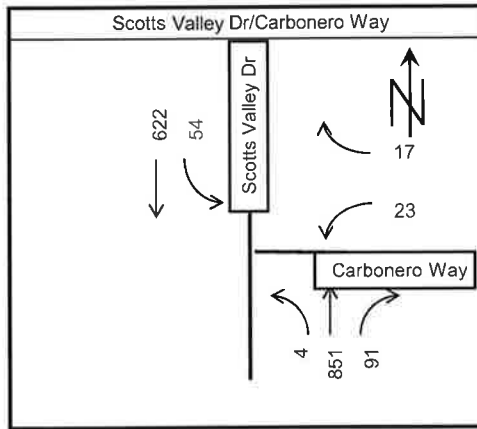


PM PEAK HOUR

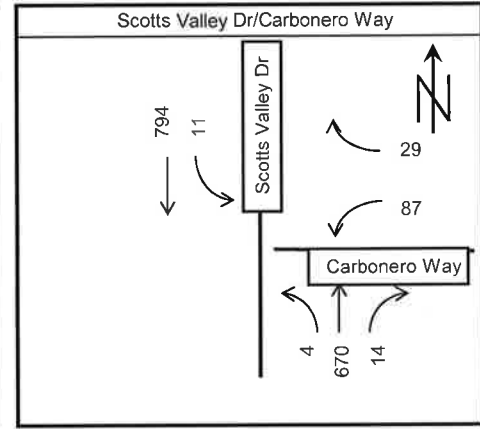


**SCOTTS VALLEY DRIVE /
CARONERO WAY**

Scotts Valley Dr/Carbonero Way

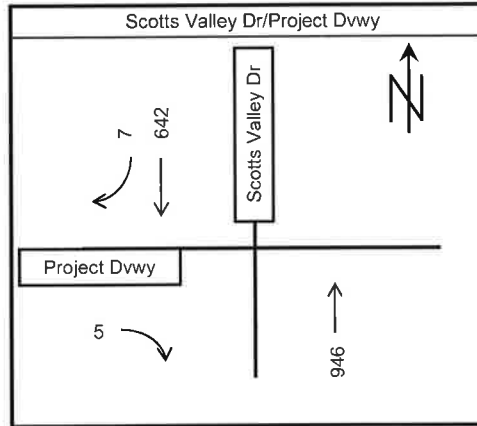


Scotts Valley Dr/Carbonero Way

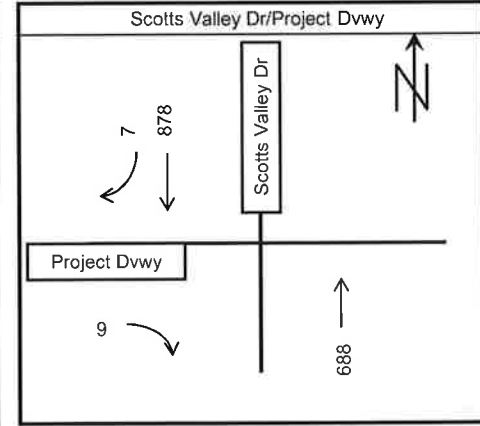


**SCOTTS VALLEY DRIVE /
PROJECT DRIVEWAY**

Scotts Valley Dr/Project Dvwy



Scotts Valley Dr/Project Dvwy



**EXHIBIT 9
EXISTING PLUS PROJECT
AM AND PM PEAK HOUR
TRAFFIC VOLUMES**

Time of Day	Office 2,518 SF 2.84 per 1,000 SF Peak Park: 8		Retail 1,800 SF 2.55 per 1,000 SF Peak Park: 5		Residential 6 units 1.23 per unit Peak Park: 8		TOTAL
	Spaces Per 1,000 SF	Project Parking Demand	Spaces Per 1,000 SF	Project Parking Demand	Spaces Per 1,000 SF	Project Parking Demand	
6:00	3%	0	1%	0	100%	8	8
7:00	30%	2	5%	0	90%	7	9
8:00	75%	6	15%	1	85%	7	14
9:00	95%	8	35%	2	80%	6	16
10:00	100%	8	65%	3	75%	6	17
11:00	100%	8	85%	4	70%	6	18
12:00	90%	7	95%	5	65%	5	17
13:00	90%	7	100%	5	70%	6	18
14:00	100%	8	95%	5	70%	6	19
15:00	100%	8	90%	5	70%	6	19
16:00	90%	7	90%	5	75%	6	18
17:00	50%	4	95%	5	85%	7	16
18:00	25%	2	95%	5	90%	7	14
19:00	10%	1	95%	5	97%	8	14
20:00	7%	1	80%	4	98%	8	13
21:00	3%	0	50%	3	99%	8	11
22:00	1%	0	30%	2	100%	8	10
23:00	0%	0	10%	1	100%	8	9
24:00	0%	0	0%	0	100%	8	8

Source: Table 2-5 Recommended Time of Day Factors for Weekdays,
ULI Shared Parking, 2nd Edition, 2005.

Time of Day	Office		Retail		Residential		TOTAL
	2,518 SF		1,800 SF		6 units		
	0.50 per 1,000 SF		2.87 per 1,000 SF		1.03 per unit		
	Peak Park: 2		Peak Park: 6		Peak Park: 7		
	Spaces Per 1,000 SF	Project Parking Demand	Spaces Per 1,000 SF	Project Parking Demand	Spaces Per 1,000 SF	Project Parking Demand	
6:00	0%	0	1%	0	100%	7	7
7:00	20%	0	5%	0	100%	7	7
8:00	60%	1	10%	1	90%	6	8
9:00	80%	2	30%	2	85%	6	10
10:00	90%	2	50%	3	80%	6	11
11:00	100%	2	65%	4	75%	5	11
12:00	90%	2	80%	5	70%	5	12
13:00	80%	2	90%	5	65%	5	12
14:00	60%	1	100%	6	70%	5	12
15:00	40%	1	100%	6	70%	5	12
16:00	20%	0	95%	6	70%	5	11
17:00	10%	0	90%	5	75%	5	10
18:00	5%	0	80%	5	85%	6	11
19:00	0%	0	75%	5	90%	6	11
20:00	0%	0	65%	4	97%	7	11
21:00	0%	0	50%	3	98%	7	10
22:00	0%	0	35%	2	99%	7	9
23:00	0%	0	15%	1	100%	7	8
24:00	0%	0	0%	0	100%	7	7

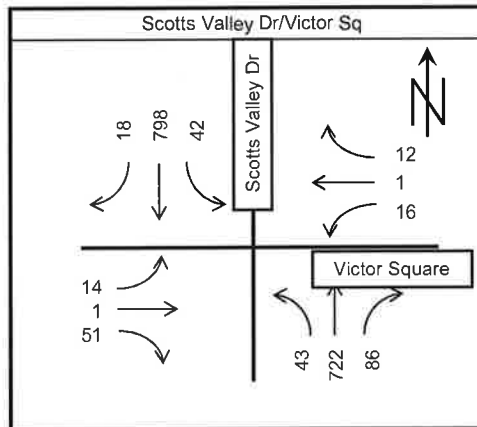
Source: Table 2-6 Recommended Time of Day Factors for Weekends,
ULI Shared Parking, 2nd Edition, 2005.

City ID	Project	Land Use	ITE Code	Size	Daily	AM Peak Hour			PM Peak Hour			Total
						In	Out	Total	In	Out	Total	
A1	Lundy Lane - Pinnacle View	230	Condo/TH Residential	20 units	116	2	7	9	7	3	10	
A2	300 Polo Ranch Rd - The Grove	230	Condo/TH Residential	50 units	291	4	18	22	17	9	26	
A3	400 Polo Ranch Rd - Polo Ranch	210	SFD Residential	40 units	381	8	22	30	25	15	40	
A4	11 Ridgecrest Drive - Ridgecrest PUD	210	SFD Residential	1 unit	10	0	1	1	1	0	1	
A5	4300 Scotts Valley Dr - Tansy	230	Condo/TH Residential	5 units	29	0	2	2	2	1	3	
A5.a	4656 Scotts Valley Dr - Anderson Pacific	710	Gnl Office Bldg	3,000 SF	33	4	1	5	1	3	4	
A6	4656 SVD - Lexington Hotel	310	Hotel	119 Rooms	1,061	46	34	80	41	42	83	
A7	Silverwood Dr - Monte Fiore	210	SFD Residential	3 units	29	1	1	2	2	1	3	
A8	Timber Ridge Land - Timber Ridge	210	SFD Residential	4 units	38	1	2	3	3	1	4	
B1	12 Blake Lane	230	Condo/TH Residential	3 units	17	0	1	1	1	1	2	
B2	2923 Granite Creek Rd - Granite Creek Estates	210	SFD Residential	2 units	19	1	1	2	1	1	2	
B3	Granite Creek Rd - Granite Creek Estates	210	SFD Residential	1 units	10	0	1	1	1	0	1	
B4	Meadow Way	210	SFD Residential	4 units	38	1	2	3	3	1	4	
B5	Mt. Hermon Rd - Town Center	820	Shopping Ctr	100,000 SF	6,791	97	59	156	288	311	599	
B5	Mt. Hermon Rd - Town Center	220	MF Residential	254 units	1,689	26	104	130	102	55	157	
B6	125 N. Navarra	210	SFD Residential	1 unit	10	0	1	1	1	0	1	
B7	26 Polo Heights Rd - Polo Heights	210	SFD Residential	4 units	38	1	2	3	3	1	4	
B8	200 Polo Ranch Rd - Marriott	310	Hotel	120 Rooms	1,070	46	34	80	41	43	84	
B9	Ridgecrest Drive - Ridgecrest PUD	210	SFD Residential	2 units	19	1	1	2	1	1	2	
B11	SVD - Dunslee Way	230	Condo/TH Residential	25 units	145	2	9	11	9	4	13	
B11	SVD - Dunslee Way	710	Gnl Office Bldg	5,000 SF	55	7	1	8	1	6	7	
B12	Scotts Valley Dr/Bean Cree - The Terrace	230	Condo/TH Residential	19 units	110	1	7	8	7	3	10	
B12.a	4303A SVD - Polo Ranch BMRs	230	Condo/TH Residential	6 units	35	1	2	3	2	1	3	
B12.b	5311 SVD - Yoso Spa	918	Spa/Wellness Ctr	2,009 SF	29	2	0	2	1	2	3	
B13	Silverwood Dr - Monte Fiore	210	SFD Residential	4 units	38	1	2	3	3	1	4	
B13.a	600/601 Lassen Park Dr - Monte Fiore	210	SFD Residential	2 units	19	1	1	2	1	1	2	
B14	Timber Ridge lane - Timber Ridge	210	SFD Residential	4 units	38	1	2	3	3	1	4	
TOTAL					12,158	255	318	573	568	508	1,076	

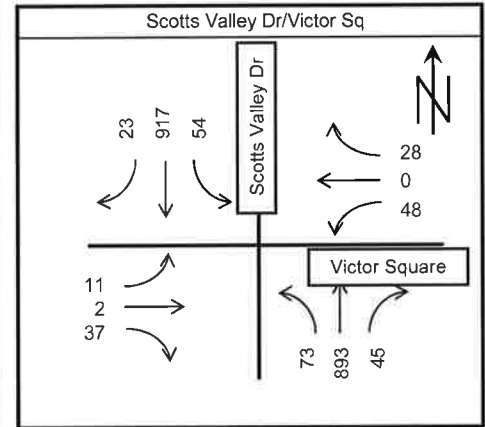
EXHIBIT 11
APPROVED PROJECTS
TRIP GENERATION

**SCOTTS VALLEY DRIVE /
VICTOR SQUARE**

AM PEAK HOUR

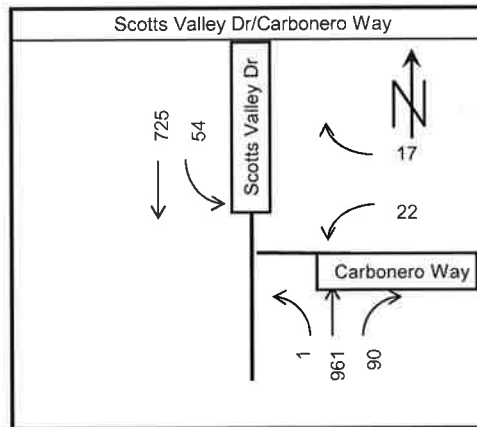


PM PEAK HOUR

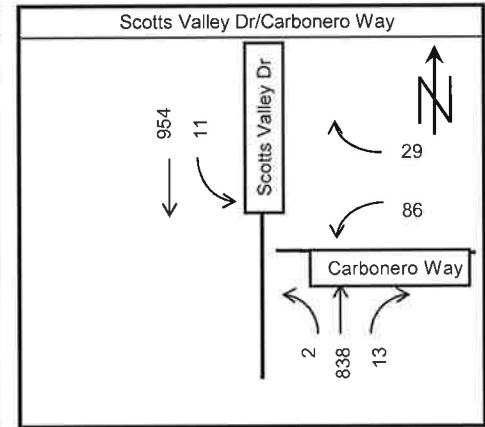


**SCOTTS VALLEY DRIVE /
CARBONERO WAY**

AM PEAK HOUR

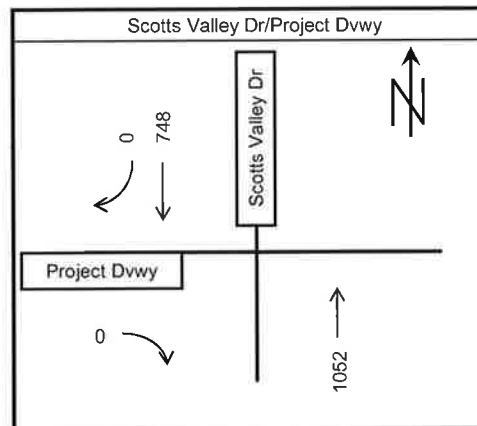


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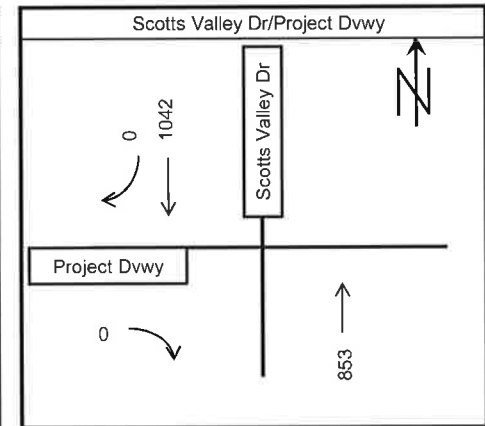


**SCOTTS VALLEY DRIVE /
PROJECT DRIVEWAY**

AM PEAK HOUR

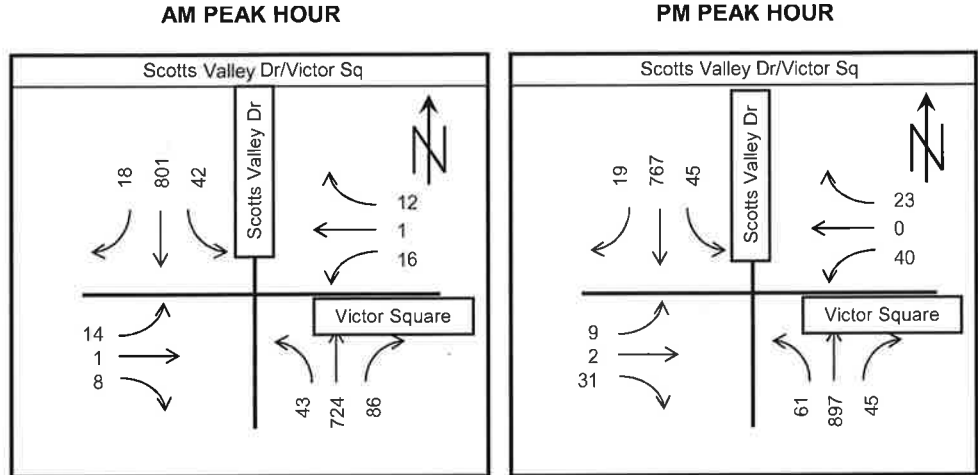


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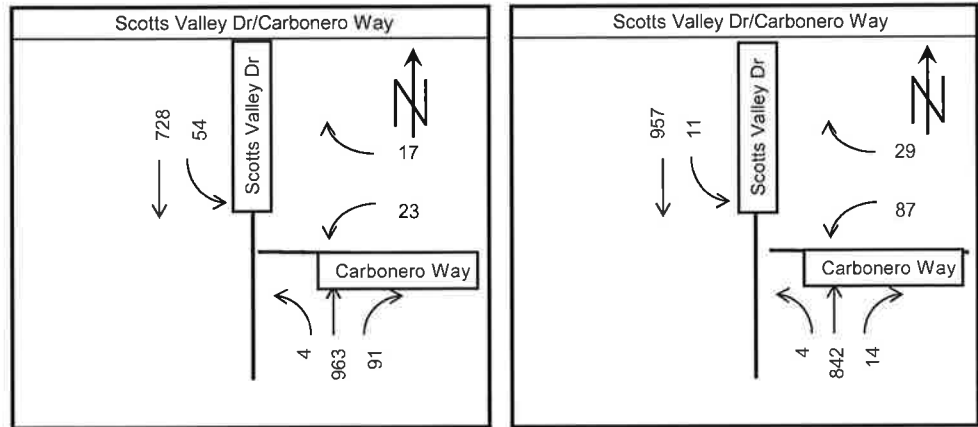


**EXHIBIT 12
BACKGROUND
AM AND PM PEAK HOUR
TRAFFIC VOLUMES**

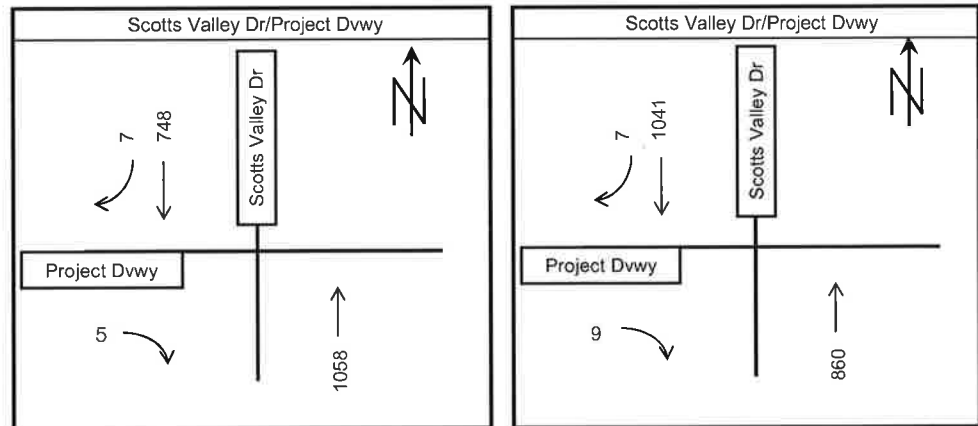
**SCOTTS VALLEY DRIVE /
VICTOR SQUARE**



**SCOTTS VALLEY DRIVE /
CARBONERO WAY**



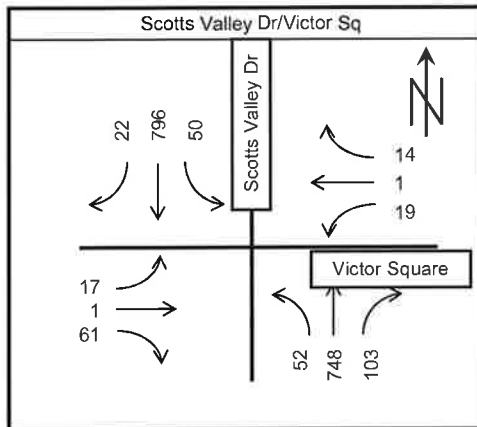
**SCOTTS VALLEY DRIVE /
PROJECT DRIVEWAY**



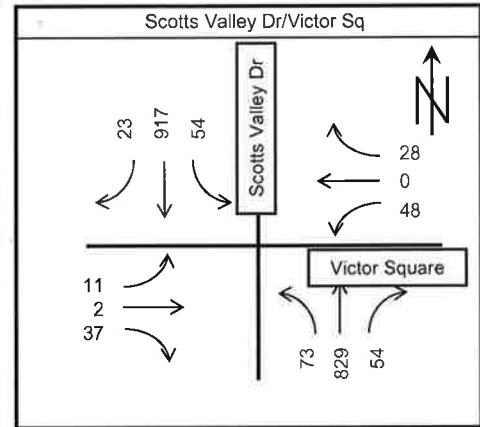
**EXHIBIT 13
BACKGROUND PLUS PROJECT
AM AND PM PEAK HOUR
TRAFFIC VOLUMES**

**SCOTTS VALLEY DRIVE /
VICTOR SQUARE**

AM PEAK HOUR

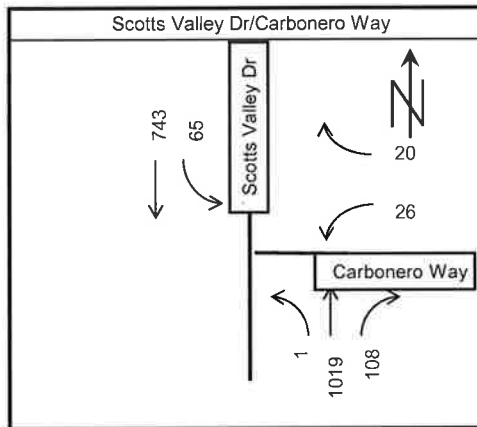


PM PEAK HOUR

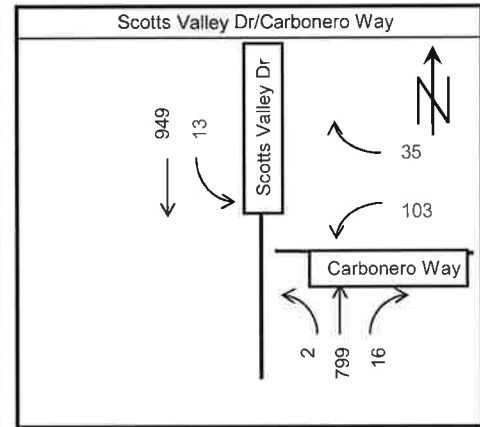


**SCOTTS VALLEY DRIVE /
CARBONERO WAY**

Scotts Valley Dr/Carbonero Way

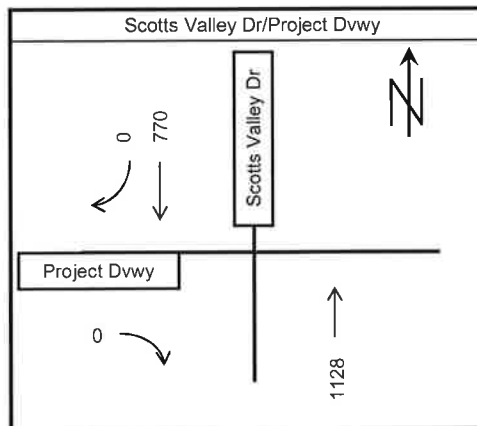


Scotts Valley Dr/Carbonero Way

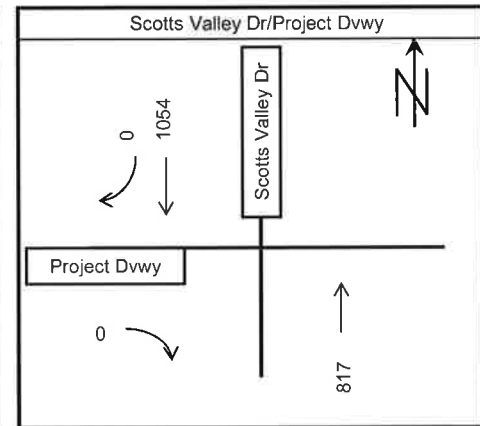


**SCOTTS VALLEY DRIVE /
PROJECT DRIVEWAY**

Scotts Valley Dr/Project Dvwy

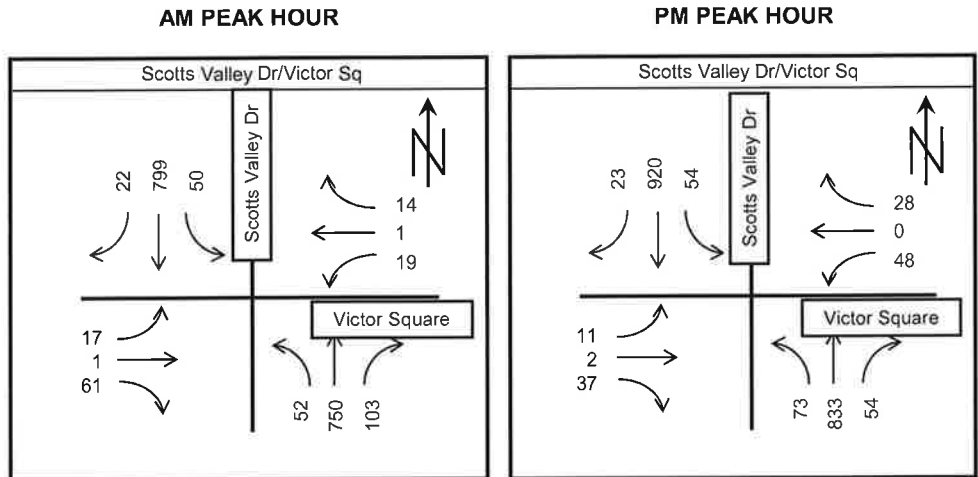


Scotts Valley Dr/Project Dvwy

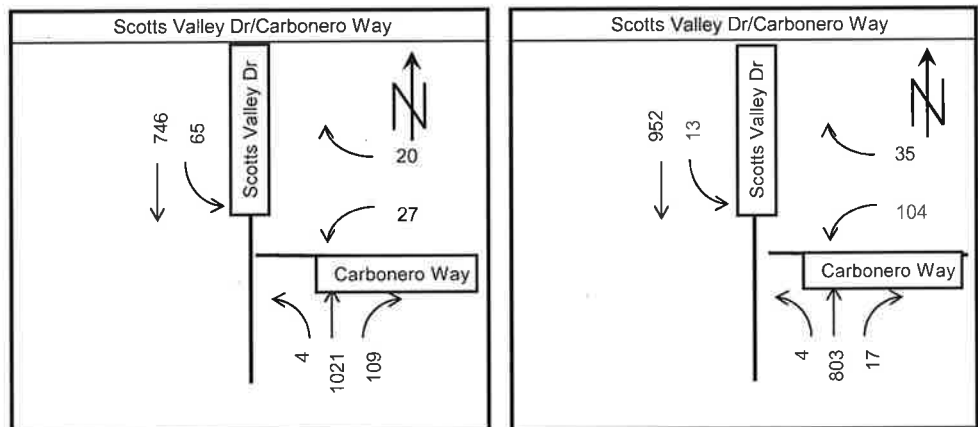


**EXHIBIT 14
CUMULATIVE
AM AND PM PEAK HOUR
TRAFFIC VOLUMES**

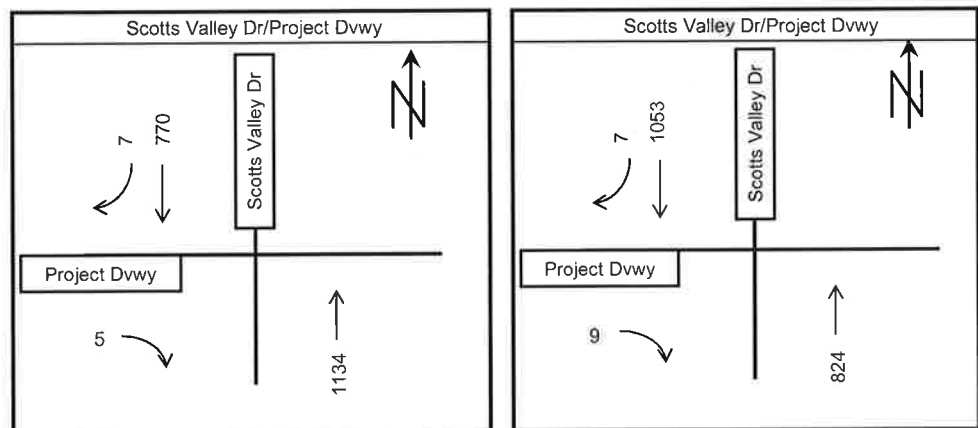
**SCOTTS VALLEY DRIVE /
VICTOR SQUARE**



**SCOTTS VALLEY DRIVE /
CARBONERO WAY**



**SCOTTS VALLEY DRIVE /
PROJECT DRIVEWAY**



**EXHIBIT 15
CUMULATIVE PLUS PROJECT
AM AND PM PEAK HOUR
TRAFFIC VOLUMES**

APPENDIX A

LEVEL OF SERVICE DESCRIPTIONS

APPENDIX A-1

LEVEL OF SERVICE (LOS) DESCRIPTION SIGNALIZED INTERSECTIONS

Signalized intersection level of service is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control as well as provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle in seconds during a specified time period, typically the weekday AM peak hour and PM peak hour. Control delay is a complex measure based on many variables, including signal phasing and signal coordination between signalized intersections, signal cycle length and traffic volumes with respect to intersection capacity.

LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Control Delay (seconds / vehicle)	Description
A	<10	Free flow: very low operating delay with short signal cycle lengths and/or good progression between signalized intersections.
B	>10 – 20 >	Stable flow: slight delays. Low delay with relatively short signal cycles and/or good progression between signals.
C	>20 - 35	Stable flow: Acceptable delays. Average delays with longer signal cycle lengths and fair progression between signalized intersections.
D	>35 - 55	Approaching unstable flow: tolerable delay, occasionally wait through more than one signal cycle before clearing the intersection.
E	>55 - 80	Unstable flow: Intolerable delay. High delay with poor progression and/or long signal cycle lengths. Waits through more than one signal cycle may be frequent.
F	>80	Forced flow: Congested and queues fail to clear. Over saturated operations on one or more approaches, poor signal progression and/or very long signal cycles.

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

APPENDIX A-2

LEVEL OF SERVICE (LOS) DESCRIPTION UNSIGNALIZED INTERSECTIONS WITH TWO-WAY STOP CONTROL (TWSC)

Two-way stop controlled intersection level of service is defined in terms of average control delay for each minor street movement or shared movement as well as major street left turns. Three legged “T” intersections with one stop sign on the stem of the intersection are referred to as one-way stop controlled intersections.

LEVEL OF SERVICE (LOS) CRITERIA FOR TWSC INTERSECTIONS

Level of Service	Control Delay (seconds / vehicle)	Description
A	0 - 10	Vehicle queuing is rare.
B	>10 - 15 >	Occasional vehicle queuing.
C	>15 - 25	Frequent vehicle queuing.
D	>25 - 35	Frequent vehicle queuing.
E	>35 - 50	Significant vehicle queuing.
F	>50	Volume to capacity ratio approaches or exceeds 1.0 with very long vehicle queues.

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

APPENDIX B

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS
Scotts Valley Drive/Project Driveway

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	5	0	946	642	7
Future Vol, veh/h	0	5	0	946	642	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	0	1028	698	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	353	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	643	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	643	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	10.6		0		0	
HCM LOS	B					

Minor Lane/Major Mvmt	NB	EBLn1	SBT	SBR
Capacity (veh/h)	-	643	-	-
HCM Lane V/C Ratio	-	0.008	-	-
HCM Control Delay (s)	-	10.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

HCM 2010 TWSC
1: Project Driveway & Scotts Valley Dr

Existing Plus Project PM

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		↑↑	↑↑	
Traffic Vol, veh/h	0	9	0	688	878	0
Future Vol, veh/h	0	9	0	688	878	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	0	748	954	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	477	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	534	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	534	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NB	EBLn1	SBT	SBR
Capacity (veh/h)	-	534	-	-
HCM Lane V/C Ratio	-	0.018	-	-
HCM Control Delay (s)	-	11.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

HCM 2010 TWSC
1: Project Driveway & Scotts Valley Dr

Background Plus Project AM

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	5	0	1058	748	7
Future Vol, veh/h	0	5	0	1058	748	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	0	1150	813	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	410	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	591	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	591	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NB	EB	Ln1	SBT	SBR
Capacity (veh/h)	-	591	-	-	-
HCM Lane V/C Ratio	-	0.009	-	-	-
HCM Control Delay (s)	-	11.1	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0	-	-	-

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	9	0	860	1041	7
Future Vol, veh/h	0	9	0	860	1041	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	0	935	1132	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	570	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	465	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	465	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NB	EBLn1	SBT	SBR
Capacity (veh/h)	-	465	-	-
HCM Lane V/C Ratio	-	0.021	-	-
HCM Control Delay (s)	-	12.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

HCM 2010 TWSC
1: Project Driveway & Scotts Valley Dr

Cumulative Plus Project AM

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	5	0	1134	770	7
Future Vol, veh/h	0	5	0	1134	770	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	0	1233	837	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	422	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	580	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	580	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NB	EBLn1	SBT	SBR
Capacity (veh/h)	-	580	-	-
HCM Lane V/C Ratio	-	0.009	-	-
HCM Control Delay (s)	-	11.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

1: Project Driveway & Scotts Valley Dr

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		↑↑	↑↑	
Traffic Vol, veh/h	0	9	0	824	1053	7
Future Vol, veh/h	0	9	0	824	1053	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	0	896	1145	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	576	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	460	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	460	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NB	EBLn1	SBT	SBR
Capacity (veh/h)	-	460	-	-
HCM Lane V/C Ratio	-	0.021	-	-
HCM Control Delay (s)	-	13	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

APPENDIX C

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS
Scotts Valley Drive/Carbonero Way

HCM 2010 Signalized Intersection Summary

2: Scotts Valley Dr & Carbonero

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	22	0	17	1	849	90	54	619	0
Future Volume (veh/h)	0	0	0	22	0	17	1	849	90	54	619	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				24	0	18	1	923	98	59	673	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				85	0	76	5	1647	175	110	2020	0
Arrive On Green				0.05	0.00	0.05	0.00	0.51	0.51	0.06	0.57	0.00
Sat Flow, veh/h				1774	0	1583	1774	3229	343	1774	3632	0
Grp Volume(v), veh/h				24	0	18	1	506	515	59	673	0
Grp Sat Flow(s), veh/h/ln				1774	0	1583	1774	1770	1802	1774	1770	0
Q Serve(g_s), s				0.5	0.0	0.4	0.0	7.0	7.0	1.1	3.6	0.0
Cycle Q Clear(g_c), s				0.5	0.0	0.4	0.0	7.0	7.0	1.1	3.6	0.0
Prop In Lane				1.00		1.00	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h				85	0	76	5	903	919	110	2020	0
V/C Ratio(X)				0.28	0.00	0.24	0.20	0.56	0.56	0.54	0.33	0.00
Avail Cap(c_a), veh/h				899	0	802	250	1146	1167	275	2341	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				16.3	0.0	16.3	17.7	6.0	6.0	16.2	4.0	0.0
Incr Delay (d2), s/veh				1.8	0.0	1.6	18.5	0.5	0.5	4.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.2	0.0	3.5	3.6	0.7	1.7	0.0
LnGrp Delay(d),s/veh				18.1	0.0	17.9	36.2	6.5	6.5	20.2	4.1	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					42			1022			732	
Approach Delay, s/veh					18.0			6.5			5.4	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.7	22.6			4.5	24.8		6.2				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	5.5	23.0			5.0	23.5		18.0				
Max Q Clear Time (g_c+I1)3s		9.0			2.0	5.6		2.5				
Green Ext Time (p_c), s	0.0	9.2			0.0	10.9		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				6.4								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	86	0	29	2	666	13	11	791	0
Future Volume (veh/h)	0	0	0	86	0	29	2	666	13	11	791	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				93	0	32	2	724	14	12	860	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				187	0	167	6	1607	31	28	1648	0
Arrive On Green				0.11	0.00	0.11	0.00	0.45	0.45	0.02	0.47	0.00
Sat Flow, veh/h				1774	0	1583	1774	3552	69	1774	3632	0
Grp Volume(v), veh/h				93	0	32	2	361	377	12	860	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1851	1774	1770	0
Q Serve(g_s), s				1.6	0.0	0.6	0.0	4.4	4.4	0.2	5.4	0.0
Cycle Q Clear(g_c), s				1.6	0.0	0.6	0.0	4.4	4.4	0.2	5.4	0.0
Prop In Lane				1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h				187	0	167	6	801	838	28	1648	0
V/C Ratio(X)				0.50	0.00	0.19	0.36	0.45	0.45	0.43	0.52	0.00
Avail Cap(c_a), veh/h				1008	0	900	280	1034	1081	280	2068	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				13.4	0.0	12.9	15.8	6.0	6.0	15.4	6.0	0.0
Incr Delay (d2), s/veh				2.0	0.0	0.6	34.4	0.4	0.4	10.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.9	0.0	0.3	0.1	2.2	2.3	0.2	2.7	0.0
LnGrp Delay(d),s/veh				15.4	0.0	13.5	50.2	6.4	6.3	25.4	6.2	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					125			740			872	
Approach Delay, s/veh					14.9			6.5			6.5	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	5.0	18.8			4.6	19.2		7.8				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	5.0	18.5			5.0	18.5		18.0				
Max Q Clear Time (g_c+I1)2s		6.4			2.0	7.4		3.6				
Green Ext Time (p_c), s	0.0	7.8			0.0	7.3		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.1								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Existing Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	23	0	17	4	851	91	54	622	0
Future Volume (veh/h)	0	0	0	23	0	17	4	851	91	54	622	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				25	0	18	4	925	99	59	676	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				86	0	77	10	1646	176	110	2006	0
Arrive On Green				0.05	0.00	0.05	0.01	0.51	0.51	0.06	0.57	0.00
Sat Flow, veh/h				1774	0	1583	1774	3226	345	1774	3632	0
Grp Volume(v), veh/h				25	0	18	4	507	517	59	676	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1802	1774	1770	0
Q Serve(g_s), s				0.5	0.0	0.4	0.1	7.0	7.0	1.1	3.6	0.0
Cycle Q Clear(g_c), s				0.5	0.0	0.4	0.1	7.0	7.0	1.1	3.6	0.0
Prop In Lane				1.00		1.00	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h				86	0	77	10	903	919	110	2006	0
V/C Ratio(X)				0.29	0.00	0.23	0.41	0.56	0.56	0.54	0.34	0.00
Avail Cap(c_a), veh/h				897	0	800	254	1143	1163	274	2325	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				16.3	0.0	16.3	17.7	6.0	6.0	16.2	4.1	0.0
Incr Delay (d2), s/veh				1.8	0.0	1.5	25.9	0.6	0.5	4.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.2	0.1	3.5	3.6	0.7	1.7	0.0
LnGrp Delay(d),s/veh				18.2	0.0	17.8	43.5	6.5	6.5	20.2	4.2	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					43			1028			735	
Approach Delay, s/veh					18.0			6.7			5.5	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.7	22.7			4.7	24.7		6.2				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	55	23.0			5.1	23.4		18.0				
Max Q Clear Time (g_c+I1)3s		9.0			2.1	5.6		2.5				
Green Ext Time (p_c), s	0.0	9.2			0.0	10.8		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				6.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Existing Plus Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	87	0	29	2	670	14	11	794	0
Future Volume (veh/h)	0	0	0	87	0	29	2	670	14	11	794	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				95	0	32	2	728	15	12	863	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				188	0	168	6	1606	33	28	1649	0
Arrive On Green				0.11	0.00	0.11	0.00	0.45	0.45	0.02	0.47	0.00
Sat Flow, veh/h				1774	0	1583	1774	3546	73	1774	3632	0
Grp Volume(v), veh/h				95	0	32	2	363	380	12	863	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1850	1774	1770	0
Q Serve(g_s), s				1.6	0.0	0.6	0.0	4.5	4.5	0.2	5.5	0.0
Cycle Q Clear(g_c), s				1.6	0.0	0.6	0.0	4.5	4.5	0.2	5.5	0.0
Prop In Lane				1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h				188	0	168	6	801	838	28	1649	0
V/C Ratio(X)				0.50	0.00	0.19	0.36	0.45	0.45	0.43	0.52	0.00
Avail Cap(c_a), veh/h				1006	0	898	279	1031	1078	279	2062	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				13.4	0.0	12.9	15.8	6.0	6.0	15.5	6.0	0.0
Incr Delay (d2), s/veh				2.1	0.0	0.5	34.6	0.4	0.4	10.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.9	0.0	0.3	0.1	2.2	2.3	0.2	2.7	0.0
LnGrp Delay(d),s/veh				15.5	0.0	13.5	50.4	6.4	6.4	25.5	6.2	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					127			745			875	
Approach Delay, s/veh					15.0			6.5			6.5	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	5.0	18.9			4.6	19.3		7.9				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	5.0	18.5			5.0	18.5		18.0				
Max Q Clear Time (g_c+I1)2s		6.5			2.0	7.5		3.6				
Green Ext Time (p_c), s	0.0	7.8			0.0	7.3		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.1								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary 2: Scotts Valley Dr & Carbonero

Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	22	0	17	1	961	90	54	725	0
Future Volume (veh/h)	0	0	0	22	0	17	1	961	90	54	725	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				24	0	18	1	1045	98	59	788	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				84	0	75	5	1739	163	109	2093	0
Arrive On Green				0.05	0.00	0.05	0.00	0.53	0.53	0.06	0.59	0.00
Sat Flow, veh/h				1774	0	1583	1774	3272	307	1774	3632	0
Grp Volume(v), veh/h				24	0	18	1	565	578	59	788	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1809	1774	1770	0
Q Serve(g_s), s				0.5	0.0	0.4	0.0	8.2	8.3	1.2	4.4	0.0
Cycle Q Clear(g_c), s				0.5	0.0	0.4	0.0	8.2	8.3	1.2	4.4	0.0
Prop In Lane				1.00		1.00	1.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h				84	0	75	5	941	961	109	2093	0
V/C Ratio(X)				0.29	0.00	0.24	0.21	0.60	0.60	0.54	0.38	0.00
Avail Cap(c_a), veh/h				851	0	760	241	1104	1128	241	2208	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				17.3	0.0	17.2	18.7	6.0	6.0	17.1	4.0	0.0
Incr Delay (d2), s/veh				1.9	0.0	1.6	20.8	0.7	0.7	4.2	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.2	0.0	4.1	4.2	0.7	2.1	0.0
LnGrp Delay(d),s/veh				19.1	0.0	18.9	39.5	6.7	6.7	21.3	4.1	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					42			1144			847	
Approach Delay, s/veh					19.0			6.7			5.3	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.8	24.4			4.6	26.7		6.3				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	51	23.4			5.1	23.4		18.0				
Max Q Clear Time (g_c+I1)3s	10.3				2.0	6.4		2.5				
Green Ext Time (p_c), s	0.0	9.7			0.0	11.8		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				6.4								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	86	0	29	2	838	13	11	954	0
Future Volume (veh/h)	0	0	0	86	0	29	2	838	13	11	954	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				93	0	32	2	911	14	12	1037	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				174	0	155	5	1855	29	28	1886	0
Arrive On Green				0.10	0.00	0.10	0.00	0.52	0.52	0.02	0.53	0.00
Sat Flow, veh/h				1774	0	1583	1774	3568	55	1774	3632	0
Grp Volume(v), veh/h				93	0	32	2	452	473	12	1037	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1853	1774	1770	0
Q Serve(g_s), s				1.8	0.0	0.7	0.0	6.1	6.1	0.2	7.1	0.0
Cycle Q Clear(g_c), s				1.8	0.0	0.7	0.0	6.1	6.1	0.2	7.1	0.0
Prop In Lane				1.00		1.00	1.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h				174	0	155	5	920	964	28	1886	0
V/C Ratio(X)				0.54	0.00	0.21	0.41	0.49	0.49	0.43	0.55	0.00
Avail Cap(c_a), veh/h				867	0	773	241	1128	1182	241	2257	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				15.8	0.0	15.3	18.3	5.7	5.7	18.0	5.7	0.0
Incr Delay (d2), s/veh				2.5	0.0	0.7	47.1	0.4	0.4	10.2	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.0	0.0	0.3	0.1	3.0	3.1	0.2	3.5	0.0
LnGrp Delay(d),s/veh				18.4	0.0	16.0	65.4	6.1	6.1	28.2	5.9	0.0
LnGrp LOS				B		B	E	A	A	C	A	
Approach Vol, veh/h					125			927			1049	
Approach Delay, s/veh					17.8			6.2			6.2	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	5.1	23.7			4.6	24.1		8.1				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	5.0	23.5			5.0	23.5		18.0				
Max Q Clear Time (g_c+1),s	2.2	8.1			2.0	9.1		3.8				
Green Ext Time (p_c), s	0.0	11.1			0.0	10.5		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay					6.9							
HCM 2010 LOS					A							

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Background Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	23	0	17	4	963	91	54	728	0
Future Volume (veh/h)	0	0	0	23	0	17	4	963	91	54	728	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				25	0	18	4	1047	99	59	791	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				85	0	76	10	1738	164	109	2079	0
Arrive On Green				0.05	0.00	0.05	0.01	0.53	0.53	0.06	0.59	0.00
Sat Flow, veh/h				1774	0	1583	1774	3269	309	1774	3632	0
Grp Volume(v), veh/h				25	0	18	4	567	579	59	791	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1808	1774	1770	0
Q Serve(g_s), s				0.5	0.0	0.4	0.1	8.3	8.3	1.2	4.5	0.0
Cycle Q Clear(g_c), s				0.5	0.0	0.4	0.1	8.3	8.3	1.2	4.5	0.0
Prop In Lane				1.00		1.00	1.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h				85	0	76	10	941	961	109	2079	0
V/C Ratio(X)				0.29	0.00	0.24	0.41	0.60	0.60	0.54	0.38	0.00
Avail Cap(c_a), veh/h				850	0	758	241	1102	1126	241	2203	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				17.3	0.0	17.2	18.6	6.1	6.1	17.1	4.1	0.0
Incr Delay (d2), s/veh				1.9	0.0	1.6	26.0	0.7	0.7	4.2	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.2	0.1	4.1	4.2	0.7	2.1	0.0
LnGrp Delay(d),s/veh				19.1	0.0	18.8	44.6	6.8	6.7	21.3	4.2	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					43			1150			850	
Approach Delay, s/veh					19.0			6.9			5.4	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.8	24.5			4.7	26.6		6.3				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	5.1	23.4			5.1	23.4		18.0				
Max Q Clear Time (g_c+l1),s	3.2	10.3			2.1	6.5		2.5				
Green Ext Time (p_c), s	0.0	9.7			0.0	11.8		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				6.5								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Background Plus Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	87	0	29	4	842	14	11	957	0
Future Volume (veh/h)	0	0	0	87	0	29	4	842	14	11	957	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				95	0	32	4	915	15	12	1040	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				175	0	156	10	1858	30	28	1882	0
Arrive On Green				0.10	0.00	0.10	0.01	0.52	0.52	0.02	0.53	0.00
Sat Flow, veh/h				1774	0	1583	1774	3564	58	1774	3632	0
Grp Volume(v), veh/h				95	0	32	4	454	476	12	1040	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1852	1774	1770	0
Q Serve(g_s), s				1.9	0.0	0.7	0.1	6.1	6.1	0.2	7.2	0.0
Cycle Q Clear(g_c), s				1.9	0.0	0.7	0.1	6.1	6.1	0.2	7.2	0.0
Prop In Lane				1.00		1.00	1.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h				175	0	156	10	923	966	28	1882	0
V/C Ratio(X)				0.54	0.00	0.21	0.41	0.49	0.49	0.43	0.55	0.00
Avail Cap(c_a), veh/h				862	0	769	239	1123	1175	239	2245	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				15.9	0.0	15.4	18.4	5.7	5.7	18.1	5.8	0.0
Incr Delay (d2), s/veh				2.6	0.0	0.6	25.9	0.4	0.4	10.2	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.1	0.0	0.3	0.1	3.0	3.1	0.2	3.5	0.0
LnGrp Delay(d),s/veh				18.5	0.0	16.0	44.3	6.1	6.1	28.3	6.0	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					127			934			1052	
Approach Delay, s/veh					17.9			6.3			6.3	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	5.1	23.8			4.7	24.2		8.1				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	50	23.5			5.0	23.5		18.0				
Max Q Clear Time (g_c+l1)2s	8.1				2.1	9.2		3.9				
Green Ext Time (p_c), s	0.0	11.1			0.0	10.5		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.0								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Cumulative AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	26	0	20	1	1019	108	65	743	0
Future Volume (veh/h)	0	0	0	26	0	20	1	1019	108	65	743	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				28	0	22	1	1108	117	71	808	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				95	0	85	5	1719	181	122	2121	0
Arrive On Green				0.05	0.00	0.05	0.00	0.53	0.53	0.07	0.60	0.00
Sat Flow, veh/h				1774	0	1583	1774	3231	341	1774	3632	0
Grp Volume(v), veh/h				28	0	22	1	606	619	71	808	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1803	1774	1770	0
Q Serve(g_s), s				0.6	0.0	0.5	0.0	9.5	9.6	1.5	4.6	0.0
Cycle Q Clear(g_c), s				0.6	0.0	0.5	0.0	9.5	9.6	1.5	4.6	0.0
Prop In Lane				1.00		1.00	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h				95	0	85	5	941	959	122	2121	0
V/C Ratio(X)				0.29	0.00	0.26	0.22	0.64	0.65	0.58	0.38	0.00
Avail Cap(c_a), veh/h				818	0	730	232	1060	1080	232	2121	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				17.8	0.0	17.7	19.5	6.5	6.5	17.6	4.1	0.0
Incr Delay (d2), s/veh				1.7	0.0	1.6	22.7	1.1	1.1	4.3	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.3	0.0	4.8	4.9	0.9	2.3	0.0
LnGrp Delay(d),s/veh				19.5	0.0	19.3	42.2	7.6	7.6	22.0	4.2	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					50			1226			879	
Approach Delay, s/veh					19.4			7.7			5.6	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	7.2	25.3			4.6	27.9		6.6				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	51	23.4			5.1	23.4		18.0				
Max Q Clear Time (g_c+l1),s	35	11.6			2.0	6.6		2.6				
Green Ext Time (p_c), s	0.0	9.2			0.0	12.2		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				7.1								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Cumulative PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	103	0	35	2	799	16	13	949	0
Future Volume (veh/h)	0	0	0	103	0	35	2	799	16	13	949	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				112	0	38	2	868	17	14	1032	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				188	0	168	5	1814	36	32	1863	0
Arrive On Green				0.11	0.00	0.11	0.00	0.51	0.51	0.02	0.53	0.00
Sat Flow, veh/h				1774	0	1583	1774	3551	70	1774	3632	0
Grp Volume(v), veh/h				112	0	38	2	433	452	14	1032	0
Grp Sat Flow(s), veh/h/ln				1774	0	1583	1774	1770	1850	1774	1770	0
Q Serve(g_s), s				2.2	0.0	0.8	0.0	5.9	5.9	0.3	7.2	0.0
Cycle Q Clear(g_c), s				2.2	0.0	0.8	0.0	5.9	5.9	0.3	7.2	0.0
Prop In Lane				1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h				188	0	168	5	904	946	32	1863	0
V/C Ratio(X)				0.59	0.00	0.23	0.41	0.48	0.48	0.44	0.55	0.00
Avail Cap(c_a), veh/h				863	0	770	240	1123	1175	240	2247	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				15.8	0.0	15.2	18.4	5.9	5.9	18.0	5.9	0.0
Incr Delay (d2), s/veh				3.0	0.0	0.7	47.1	0.4	0.4	9.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.4	0.1	2.9	3.0	0.2	3.5	0.0
LnGrp Delay(d),s/veh				18.8	0.0	15.8	65.5	6.3	6.2	27.0	6.1	0.0
LnGrp LOS				B		B	E	A	A	C	A	
Approach Vol, veh/h					150			887			1046	
Approach Delay, s/veh					18.0			6.4			6.4	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	5.2	23.4			4.6	24.0		8.4				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	5.0	23.5			5.0	23.5		18.0				
Max Q Clear Time (g_c+I1)2s	7.9				2.0	9.2		4.2				
Green Ext Time (p_c), s	0.0	11.0			0.0	10.3		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.2								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
2: Scotts Valley Dr & Carbonero

Cumulative Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	27	0	20	4	1021	109	65	746	0
Future Volume (veh/h)	0	0	0	27	0	20	4	1021	109	65	746	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				29	0	22	4	1110	118	71	811	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				96	0	86	10	1718	182	122	2107	0
Arrive On Green				0.05	0.00	0.05	0.01	0.53	0.53	0.07	0.60	0.00
Sat Flow, veh/h				1774	0	1583	1774	3229	343	1774	3632	0
Grp Volume(v), veh/h				29	0	22	4	608	620	71	811	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1802	1774	1770	0
Q Serve(g_s), s				0.6	0.0	0.5	0.1	9.6	9.6	1.5	4.7	0.0
Cycle Q Clear(g_c), s				0.6	0.0	0.5	0.1	9.6	9.6	1.5	4.7	0.0
Prop In Lane				1.00		1.00	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h				96	0	86	10	942	959	122	2107	0
V/C Ratio(X)				0.30	0.00	0.26	0.41	0.65	0.65	0.58	0.38	0.00
Avail Cap(c_a), veh/h				816	0	728	231	1058	1077	231	2116	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				17.8	0.0	17.7	19.4	6.5	6.5	17.7	4.2	0.0
Incr Delay (d2), s/veh				1.7	0.0	1.5	26.0	1.2	1.1	4.4	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.3	0.1	4.9	5.0	0.9	2.3	0.0
LnGrp Delay(d),s/veh				19.5	0.0	19.3	45.4	7.7	7.7	22.0	4.3	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					51			1232			882	
Approach Delay, s/veh					19.4			7.8			5.7	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	7.2	25.3			4.7	27.8		6.6				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	51	23.4			5.1	23.4		18.0				
Max Q Clear Time (g_c+I1),s	5	11.6			2.1	6.7		2.6				
Green Ext Time (p_c), s	0.0	9.2			0.0	12.2		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay					7.2							
HCM 2010 LOS					A							

HCM 2010 Signalized Intersection Summary 2: Scotts Valley Dr & Carbonero

Cumulative Plus Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	104	0	35	4	803	17	13	952	0
Future Volume (veh/h)	0	0	0	104	0	35	4	803	17	13	952	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				113	0	38	4	873	18	14	1035	0
Adj No. of Lanes				1	0	1	1	2	0	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	2	2	2	2	2	0
Cap, veh/h				188	0	168	10	1819	38	32	1860	0
Arrive On Green				0.11	0.00	0.11	0.01	0.51	0.51	0.02	0.53	0.00
Sat Flow, veh/h				1774	0	1583	1774	3546	73	1774	3632	0
Grp Volume(v), veh/h				113	0	38	4	436	455	14	1035	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	1850	1774	1770	0
Q Serve(g_s), s				2.3	0.0	0.8	0.1	5.9	5.9	0.3	7.3	0.0
Cycle Q Clear(g_c), s				2.3	0.0	0.8	0.1	5.9	5.9	0.3	7.3	0.0
Prop In Lane				1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h				188	0	168	10	908	949	32	1860	0
V/C Ratio(X)				0.60	0.00	0.23	0.41	0.48	0.48	0.44	0.56	0.00
Avail Cap(c_a), veh/h				858	0	766	238	1118	1168	238	2235	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				15.9	0.0	15.2	18.4	5.9	5.9	18.1	5.9	0.0
Incr Delay (d2), s/veh				3.0	0.0	0.7	25.9	0.4	0.4	9.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.4	0.1	2.9	3.0	0.2	3.5	0.0
LnGrp Delay(d),s/veh				18.9	0.0	15.9	44.4	6.2	6.2	27.1	6.2	0.0
LnGrp LOS				B		B	D	A	A	C	A	
Approach Vol, veh/h					151			895			1049	
Approach Delay, s/veh					18.2			6.4			6.5	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	5.2	23.6			4.7	24.1		8.5				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5		4.5				
Max Green Setting (Gmax),s	50	23.5			5.0	23.5		18.0				
Max Q Clear Time (g_c+I1)2s		7.9			2.1	9.3		4.3				
Green Ext Time (p_c), s	0.0	11.0			0.0	10.3		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.3								
HCM 2010 LOS				A								

APPENDIX D

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS
Scotts Valley Drive/Victor Square

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Existing AM

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↙	↖	↗	↙	↖	↗
Traffic Vol, veh/h	14	1	51	16	1	12	43	623	86	42	663	18
Future Vol, veh/h	14	1	51	16	1	12	43	623	86	42	663	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1	55	17	1	13	47	677	93	46	721	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1255	1686	370	1269	1649	385	740	0	0	771	0	0
Stage 1	822	822	-	817	817	-	-	-	-	-	-	-
Stage 2	433	864	-	452	832	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	128	93	627	125	98	613	862	-	-	840	-	-
Stage 1	334	386	-	337	388	-	-	-	-	-	-	-
Stage 2	571	369	-	557	382	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	114	83	627	104	88	613	862	-	-	840	-	-
Mov Cap-2 Maneuver	114	83	-	104	88	-	-	-	-	-	-	-
Stage 1	316	365	-	319	367	-	-	-	-	-	-	-
Stage 2	527	349	-	479	361	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	33.6	0.5	0.6
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	862	-	-	111	627	157	840	-	-
HCM Lane V/C Ratio	0.054	-	-	0.147	0.088	0.201	0.054	-	-
HCM Control Delay (s)	9.4	-	-	42.9	11.3	33.6	9.5	-	-
HCM Lane LOS	A	-	-	E	B	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.3	0.7	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Existing PM

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	9	2	31	40	0	23	61	691	45	45	764	19
Future Vol, veh/h	9	2	31	40	0	23	61	691	45	45	764	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	2	34	43	0	25	66	751	49	49	830	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1447	1872	426	1422	1857	400	851	0	0	800	0	0
Stage 1	939	939	-	908	908	-	-	-	-	-	-	-
Stage 2	508	933	-	514	949	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	92	71	577	96	73	600	783	-	-	819	-	-
Stage 1	284	341	-	296	352	-	-	-	-	-	-	-
Stage 2	516	343	-	511	337	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	61	577	79	63	600	783	-	-	819	-	-
Mov Cap-2 Maneuver	79	61	-	79	63	-	-	-	-	-	-	-
Stage 1	260	321	-	271	322	-	-	-	-	-	-	-
Stage 2	453	314	-	449	317	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.8	73.2	0.8	0.5
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	783	-	-	75	577	116	819	-	-
HCM Lane V/C Ratio	0.085	-	-	0.159	0.058	0.59	0.06	-	-
HCM Control Delay (s)	10	-	-	61.9	11.6	73.2	9.7	-	-
HCM Lane LOS	B	-	-	F	B	F	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0.2	2.9	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Existing Plus Project AM

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Vol, veh/h	14	1	51	16	1	12	43	625	86	42	666	18
Future Vol, veh/h	14	1	51	16	1	12	43	625	86	42	666	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1	55	17	1	13	47	679	93	46	724	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1259	1691	372	1274	1655	386	743	0	0	773	0	0
Stage 1	825	825	-	820	820	-	-	-	-	-	-	-
Stage 2	434	866	-	454	835	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	127	92	625	124	97	612	860	-	-	838	-	-
Stage 1	333	385	-	335	387	-	-	-	-	-	-	-
Stage 2	570	369	-	555	381	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	113	82	625	103	87	612	860	-	-	838	-	-
Mov Cap-2 Maneuver	113	82	-	103	87	-	-	-	-	-	-	-
Stage 1	315	364	-	317	366	-	-	-	-	-	-	-
Stage 2	526	349	-	477	360	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	33.8	0.5	0.6
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	860	-	-	110	625	156	838	-	-
HCM Lane V/C Ratio	0.054	-	-	0.148	0.089	0.202	0.054	-	-
HCM Control Delay (s)	9.4	-	-	43.3	11.3	33.8	9.5	-	-
HCM Lane LOS	A	-	-	E	B	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.3	0.7	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Existing Plus Project PM

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	9	2	31	40	0	23	61	695	45	45	767	19
Future Vol, veh/h	9	2	31	40	0	23	61	695	45	45	767	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	2	34	43	0	25	66	755	49	49	834	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1452	1879	427	1428	1864	402	854	0	0	804	0	0
Stage 1	942	942	-	912	912	-	-	-	-	-	-	-
Stage 2	510	937	-	516	952	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	92	71	576	95	72	598	781	-	-	816	-	-
Stage 1	283	340	-	295	351	-	-	-	-	-	-	-
Stage 2	514	342	-	510	336	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	61	576	78	62	598	781	-	-	816	-	-
Mov Cap-2 Maneuver	79	61	-	78	62	-	-	-	-	-	-	-
Stage 1	259	320	-	270	321	-	-	-	-	-	-	-
Stage 2	451	313	-	448	316	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.8	75.6	0.8	0.5
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	781	-	-	75	576	114	816	-	-
HCM Lane V/C Ratio	0.085	-	-	0.159	0.058	0.601	0.06	-	-
HCM Control Delay (s)	10	-	-	61.9	11.6	75.6	9.7	-	-
HCM Lane LOS	B	-	-	F	B	F	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0.2	3	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Background AM

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↖	↕	↗	↖	↕	↗
Traffic Vol, veh/h	14	1	51	16	1	12	43	722	86	42	798	18
Future Vol, veh/h	14	1	51	16	1	12	43	722	86	42	798	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1	55	17	1	13	47	785	93	46	867	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1454	1940	443	1451	1903	439	887	0	0	878	0	0
Stage 1	968	968	-	925	925	-	-	-	-	-	-	-
Stage 2	486	972	-	526	978	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	91	65	562	92	68	566	759	-	-	765	-	-
Stage 1	273	330	-	290	346	-	-	-	-	-	-	-
Stage 2	531	329	-	503	327	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	80	57	562	74	60	566	759	-	-	765	-	-
Mov Cap-2 Maneuver	80	57	-	74	60	-	-	-	-	-	-	-
Stage 1	256	310	-	272	325	-	-	-	-	-	-	-
Stage 2	485	309	-	425	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.7	48.2	0.5	0.5
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn	EBLn	WBLn	SBL	SBT	SBR
Capacity (veh/h)	759	-	-	78	562	114	765	-	-
HCM Lane V/C Ratio	0.062	-	-	0.209	0.099	0.277	0.06	-	-
HCM Control Delay (s)	10.1	-	-	63	12.1	48.2	10	-	-
HCM Lane LOS	B	-	-	F	B	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.3	1	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Background PM

Intersection

Int Delay, s/veh 8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↖	↗		↖	↗	
Traffic Vol, veh/h	9	2	31	40	0	23	61	893	45	45	940	19
Future Vol, veh/h	9	2	31	40	0	23	61	893	45	45	940	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	2	34	43	0	25	66	971	49	49	1022	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1748	2282	521	1738	2268	510	1042	0	0	1020	0	0
Stage 1	1130	1130	-	1128	1128	-	-	-	-	-	-	-
Stage 2	618	1152	-	610	1140	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	55	39	500	56	40	509	663	-	-	676	-	-
Stage 1	217	277	-	218	278	-	-	-	-	-	-	-
Stage 2	443	270	-	448	274	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	46	33	500	~ 43	33	509	663	-	-	676	-	-
Mov Cap-2 Maneuver	46	33	-	~ 43	33	-	-	-	-	-	-	-
Stage 1	195	257	-	196	250	-	-	-	-	-	-	-
Stage 2	379	243	-	384	254	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.4	234.9	0.7	0.5
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	663	-	-	43	500	65	676	-	-
HCM Lane V/C Ratio	0.1	-	-	0.278	0.067	1.054	0.072	-	-
HCM Control Delay (s)	11	-	-	118.3	12.7	234.9	10.7	-	-
HCM Lane LOS	B	-	-	F	B	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.9	0.2	5.3	0.2	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	14	1	51	16	1	12	43	724	86	42	801	18
Future Vol, veh/h	14	1	51	16	1	12	43	724	86	42	801	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1	55	17	1	13	47	787	93	46	871	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1459	1946	445	1454	1909	440	890	0	0	880	0	0
Stage 1	972	972	-	927	927	-	-	-	-	-	-	-
Stage 2	487	974	-	527	982	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	90	64	561	91	68	565	757	-	-	764	-	-
Stage 1	271	329	-	289	345	-	-	-	-	-	-	-
Stage 2	531	328	-	502	325	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	79	56	561	73	60	565	757	-	-	764	-	-
Mov Cap-2 Maneuver	79	56	-	73	60	-	-	-	-	-	-	-
Stage 1	254	309	-	271	324	-	-	-	-	-	-	-
Stage 2	485	308	-	424	305	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.9	48.7	0.5	0.5
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	757	-	-	77	561	113	764	-	-
HCM Lane V/C Ratio	0.062	-	-	0.212	0.099	0.279	0.06	-	-
HCM Control Delay (s)	10.1	-	-	63.9	12.1	48.7	10	-	-
HCM Lane LOS	B	-	-	F	B	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.3	1.1	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Background Plus Project PM

Intersection

Int Delay, s/veh 8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Vol, veh/h	9	2	31	40	0	23	61	897	45	45	940	19
Future Vol, veh/h	9	2	31	40	0	23	61	897	45	45	940	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	2	34	43	0	25	66	975	49	49	1022	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1750	2287	521	1742	2272	512	1042	0	0	1024	0	0
Stage 1	1130	1130	-	1132	1132	-	-	-	-	-	-	-
Stage 2	620	1157	-	610	1140	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	55	39	500	55	40	507	663	-	-	674	-	-
Stage 1	217	277	-	216	276	-	-	-	-	-	-	-
Stage 2	442	269	-	448	274	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	33	500	~ 43	33	507	663	-	-	674	-	-
Mov Cap-2 Maneuver	46	33	-	~ 43	33	-	-	-	-	-	-	-
Stage 1	195	257	-	194	249	-	-	-	-	-	-	-
Stage 2	378	242	-	384	254	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.4	234.9	0.7	0.5
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn	EBLn1	WBLn	SBL	SBT	SBR
Capacity (veh/h)	663	-	-	43	500	65	674	-	-
HCM Lane V/C Ratio	0.1	-	-	0.278	0.067	1.054	0.073	-	-
HCM Control Delay (s)	11	-	-	118.3	12.7	234.9	10.8	-	-
HCM Lane LOS	B	-	-	F	B	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.9	0.2	5.3	0.2	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Cumulative AM

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↖	↕	↗	↖	↕	↗
Traffic Vol, veh/h	17	1	61	19	1	14	52	748	103	50	796	22
Future Vol, veh/h	17	1	61	19	1	14	52	748	103	50	796	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	1	66	21	1	15	57	813	112	54	865	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1506	2024	445	1524	1980	462	889	0	0	925	0	0
Stage 1	986	986	-	982	982	-	-	-	-	-	-	-
Stage 2	520	1038	-	542	998	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	83	57	561	81	61	547	758	-	-	734	-	-
Stage 1	266	324	-	267	325	-	-	-	-	-	-	-
Stage 2	507	306	-	492	320	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	71	49	561	63	52	547	758	-	-	734	-	-
Mov Cap-2 Maneuver	71	49	-	63	52	-	-	-	-	-	-	-
Stage 1	246	300	-	247	301	-	-	-	-	-	-	-
Stage 2	454	283	-	400	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27	62.4	0.6	0.6
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	758	-	-	69	561	98	734	-	-
HCM Lane V/C Ratio	0.075	-	-	0.284	0.118	0.377	0.074	-	-
HCM Control Delay (s)	10.1	-	-	76.6	12.3	62.4	10.3	-	-
HCM Lane LOS	B	-	-	F	B	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1	0.4	1.5	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Cumulative PM

Intersection

Int Delay, s/veh 12.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕		↗	↕	
Traffic Vol, veh/h	11	2	37	48	0	28	73	829	54	54	917	23
Future Vol, veh/h	11	2	37	48	0	28	73	829	54	54	917	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	2	40	52	0	30	79	901	59	59	997	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1736	2245	511	1706	2228	480	1022	0	0	960	0	0
Stage 1	1127	1127	-	1089	1089	-	-	-	-	-	-	-
Stage 2	609	1118	-	617	1139	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	41	508	59	42	532	675	-	-	712	-	-
Stage 1	218	278	-	230	290	-	-	-	-	-	-	-
Stage 2	449	281	-	444	274	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	33	508	~ 44	34	532	675	-	-	712	-	-
Mov Cap-2 Maneuver	45	33	-	~ 44	34	-	-	-	-	-	-	-
Stage 1	192	255	-	203	256	-	-	-	-	-	-	-
Stage 2	374	248	-	372	251	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42	\$ 300.4	0.8	0.6
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn	EBLn	WBLn	SBL	SBT	SBR
Capacity (veh/h)	675	-	-	43	508	66	712	-	-
HCM Lane V/C Ratio	0.118	-	-	0.329	0.079	1.252	0.082	-	-
HCM Control Delay (s)	11	-	-	125.3	12.3	\$ 300.4	10.5	-	-
HCM Lane LOS	B	-	-	F	B	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1.1	0.3	6.7	0.3	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Cumulative Plus Project AM

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	17	1	61	19	1	14	52	750	103	50	799	22
Future Vol, veh/h	17	1	61	19	1	14	52	750	103	50	799	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	1	66	21	1	15	57	815	112	54	868	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1510	2029	446	1527	1985	464	892	0	0	927	0	0
Stage 1	989	989	-	984	984	-	-	-	-	-	-	-
Stage 2	521	1040	-	543	1001	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	83	57	560	80	61	545	756	-	-	733	-	-
Stage 1	265	323	-	267	325	-	-	-	-	-	-	-
Stage 2	507	306	-	492	319	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	71	49	560	62	52	545	756	-	-	733	-	-
Mov Cap-2 Maneuver	71	49	-	62	52	-	-	-	-	-	-	-
Stage 1	245	299	-	247	300	-	-	-	-	-	-	-
Stage 2	454	283	-	400	295	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27	63.3	0.6	0.6
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	756	-	-	69	560	97	733	-	-
HCM Lane V/C Ratio	0.075	-	-	0.284	0.118	0.381	0.074	-	-
HCM Control Delay (s)	10.1	-	-	76.6	12.3	63.3	10.3	-	-
HCM Lane LOS	B	-	-	F	B	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1	0.4	1.5	0.2	-	-

HCM 2010 TWSC
3: Scotts Valley Dr & Victor Square

Cumulative Plus Project PM

Intersection

Int Delay, s/veh 12.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕		↗	↕	
Traffic Vol, veh/h	11	2	37	48	0	28	73	833	54	54	920	23
Future Vol, veh/h	11	2	37	48	0	28	73	833	54	54	920	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	2	40	52	0	30	79	905	59	59	1000	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1741	2253	513	1711	2235	482	1025	0	0	964	0	0
Stage 1	1130	1130	-	1093	1093	-	-	-	-	-	-	-
Stage 2	611	1123	-	618	1142	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	41	506	59	42	530	673	-	-	710	-	-
Stage 1	217	277	-	229	288	-	-	-	-	-	-	-
Stage 2	448	279	-	443	273	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	33	506	~ 44	34	530	673	-	-	710	-	-
Mov Cap-2 Maneuver	45	33	-	~ 44	34	-	-	-	-	-	-	-
Stage 1	192	254	-	202	254	-	-	-	-	-	-	-
Stage 2	373	246	-	371	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42	\$ 300.4	0.8	0.6
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	673	-	-	43	506	66	710	-	-
HCM Lane V/C Ratio	0.118	-	-	0.329	0.079	1.252	0.083	-	-
HCM Control Delay (s)	11.1	-	-	125.3	12.3	\$ 300.4	10.5	-	-
HCM Lane LOS	B	-	-	F	B	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1.1	0.3	6.7	0.3	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

APPENDIX E

TRAFFIC SIGNAL WARRANT WORKSHEETS

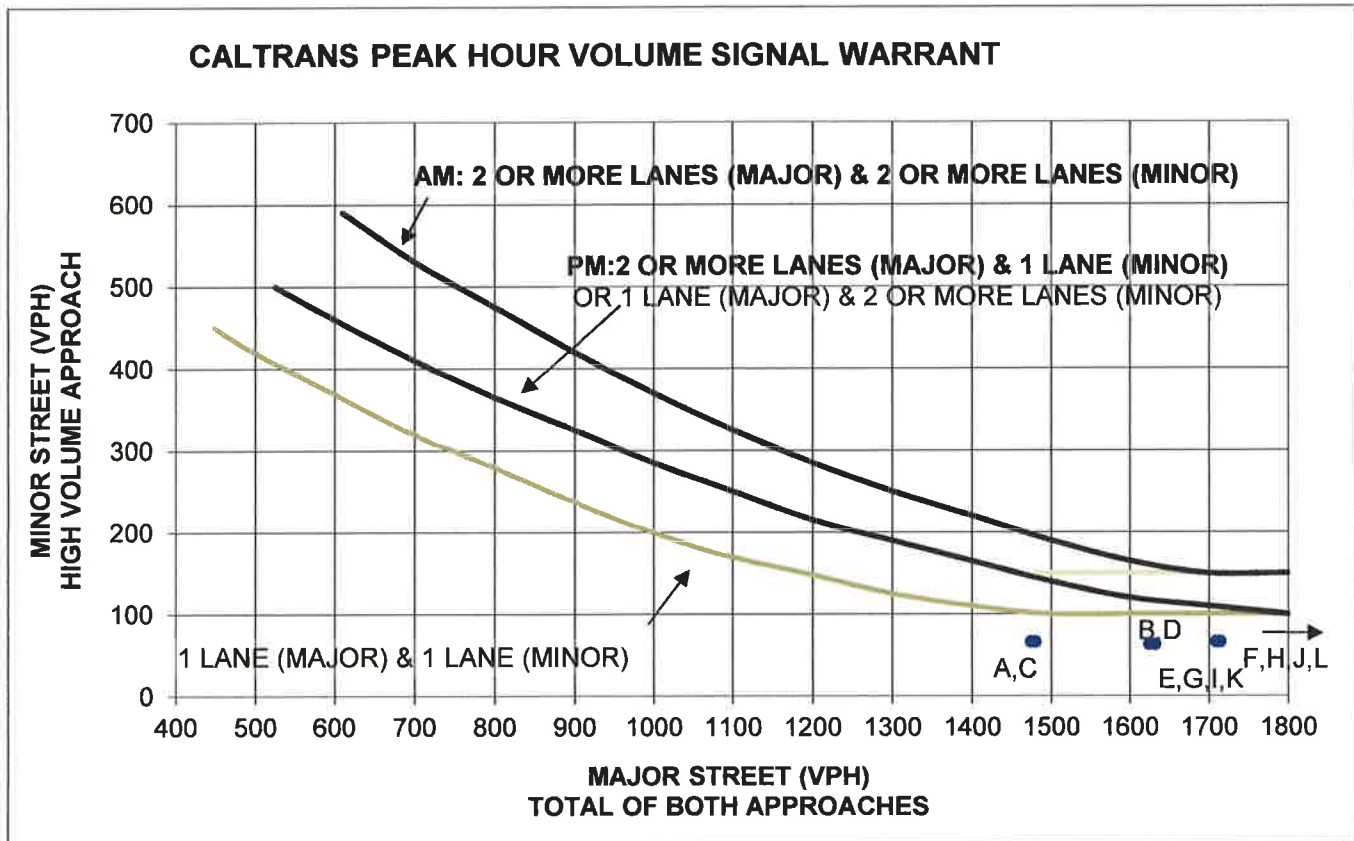
CALTRANS PEAK HOUR VOLUME SIGNAL WARRANT CRITERIA
Scotts Valley Drive/Victor Square

	PEAK HOUR CRITERIA MET									
	Existing		Existing + Project		Background		Background + Project		Cumulative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:										
A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:										
1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 6 vehicle-hours for a two-lane approach; and	No	No	No	No	No	No	No	No	No	Yes
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and	No	No	No	No	No	No	No	No	No	No
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes. (See attached figure.)	No	No	No	No	No	No	No	No	No	No

Notes:

- Criteria A: One condition (#3) is met for Existing and Background scenarios (including with project) and 2 conditions (#1 & #3) are met for the Cumulative scenario (including with project). Criteria A is not met.
- Criteria B: Conditions to meet the volume warrant are not met for all analysis scenarios. Criteria B is not met.

Intersection #3 - Scotts Valley Dr/Victor Square



Scenario	Major Street North/South	Minor Street East/West	Warrant Met
A. Existing AM	1475	66	No
B. Existing PM	1625	63	No
C. Ex + Project AM	1480	66	No
D. Ex + Project PM	1632	63	No
E. Background AM	1709	66	No
F. Background PM	2003	63	No
G. B + Project AM	1714	66	No
H. B + Project PM	2010	63	No
I. Cumulative AM	1771	79	No
J. Cumulative PM	1950	76	No
K. C + Project AM	1776	79	No
L. C + Project PM	1957	76	No

Notes:

- 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.
- Bold line applies to intersection geometry.

APPENDIX F

Landscape Planting Plan and Truck Turning Plan

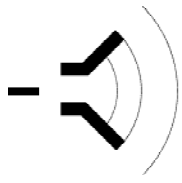
Acoustic Engineering Study
for
Bay Mountain Community

4803 Scotts Valley Drive
Scotts Valley CA

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MAR 31 2017

CITY OF SCOTTS VALLEY



Acoustical Engineering Study - Bay Mountain Community

1. Summary

This acoustic study is offered in support of a pending Building Permit application by Robert Kim for a mixed use building at APN# 022-082-58, 4803 Scotts Valley Drive. Measurement of ambient noise and specification of building details sufficient to meet requirements of the City of Scotts Valley Municipal Code Noise Element regarding environmental noise are included.

It will be shown that the exterior noise environment at 4803 Scotts Valley Drive will not exceed a Day-Night Level (Ldn) of 65 dBA by year 2027. The proposed building design will meet the requirement of 45 dBA maximum interior Ldn until at least 2027, provided windows and doors with an OITC rating of 20 dBA or more, and a wall construction yielding OITC 20 dBA or more are used.

This report studies only the front side of the building, facing Scotts Valley Drive. Noise from other directions is minimal and standard construction as specified by the Building Code will meet the requirements of the Noise Element.

2. Code Provisions

From the Scotts Valley General Plan Chapter V: Noise (Adopted October 20, 1993)

Exterior noise levels measured at the property line of proposed new residential development shall be limited at or below an average annual day-night level of 60 dBA (NA-454).

If the on-site exterior noise level is found to exceed 60 dBA, the following provision applies:

In areas where the annual day-night noise level exceeds 60 dBA, the City shall require an acoustical engineering study for proposed new construction or renovation of structures(s). Each acoustical analysis should recommend methods to reduce the interior day-night annual average noise level to below 45 dBA for private dwellings, motels, hotels, offices and noise sensitive uses (NA-452).

The General Plan adopts the requirement in the Uniform Building Code of 45 dBA, applying to both residential and private office spaces. No specific reference to retail spaces is included. California Building Code Title 24 1207.4 applies the 45 dB standard to “any habitable room”.

Ldn is the preferred metric in the General Plan for implementing these standards. Worst-case noise levels, either existing or future, will be used as the basis for determining compliance with this section. Future noise levels will be predicted for a period of 10 years forward from the time of this study.

3. Measurement of Exterior Noise Level

3.1 Site Description and Sources of Ambient Noise

The project is situated adjacent to Scotts Valley Drive, a major four-lane street, with proposed setback of approximately 40 feet from the nearest traffic lane. Local vehicle traffic is the predominant noise source, particularly during the day.

The adjoining property to the North is occupied by an auto repair shop. Activity there may contribute to environmental noise, which would have been included in the measurement for this report. No significant noise from that source was evident during two site visits.

Other potential sources of background ambient noise such as wind, wildlife, and pedestrians are minimal and are not considered in this report.

3.2 Measurement Procedure

Past versions of the California Building Code (CBC) specified “*Measurement of outdoor sound levels shall generally follow the guidelines in ASTM E-1014*” (*Standard Guide for Measurement of Outdoor A-Weighted Sound Levels*).

The most recent (2016) revision of the CBC does not include a standard for measurement of outdoor sound level, but ASTM E-1014 has been followed in preparation of this report, in keeping with past practice. Refer to Appendix 1 for detailed discussion of the instruments and protocol used.

3.3 Measurements and Test Conditions

The exterior noise level at this location was measured over a 24-hour period on February 13-14, 2017. This data was used to calculate the equivalent Day-Night Level Ldn, as specified by ASTM E-1014. **The 24-hour measured Ldn was found to be 63.4 dBA.**

The measurements were made at a height of 10 feet above grade, at the front boundary of the proposed building envelope, rather than at the property boundary as stated in NA-454. This was done to facilitate compliance with the requirement of NA-452 for specification of the building’s required noise attenuation. The measurement location is shown on the site plan in Appendix 2. A graphical plot of the complete data set is in Appendix 3.

Approximate weather conditions during the data collection period were: no precipitation, air temperature 38-71 degrees, humidity 40-70%, and wind speed 5-7 mph.

4. Traffic Data and Projections

Traffic data from 2012 show Average Daily Traffic (ADT) of 16,382 vehicles. For the purposes of this study, an annual increase of ADT by 1% per year is used. The traffic at the time of this study is therefore estimated to be 17201 vehicles per day, or 717 per hour.

4.2 Projected Increase in Traffic Count

In past years the City of Scotts Valley has predicted a 1% per year increase in traffic. To meet the requirement for continued compliance until 2027, the traffic count data must therefore be increased by an additional 10%, to 788 per hour. The result of this calculation shown in Appendix 4 predicts a 1.6 dBA increase in Ldn by 2027

4.3 Inclusion of Buses and Other Vehicles in Traffic Data

Santa Cruz Metro has one scheduled bus route (#35A) on Scotts Valley Drive. The schedule shows two buses per hour from 7 AM to 10 PM. Metro bus traffic is included in the traffic noise calculation, and has minimal impact on the noise level. The current bus schedule is shown in Appendix 5.

Traffic count data for heavy trucks and motorcycles is not available. Casual observation suggests that the relative frequency of these types of vehicle is not enough to have a significant effect on the calculation of traffic-induced noise at this site.

5. Acoustic Performance of the Building

The code requires that the building must attenuate exterior noise such that the interior Ldn is 45 dBA or lower. In the previous section, the 2027 predicted Ldn was found to be 65 dBA, and the building must therefore attenuate this sound by at least 20 dBA to meet the code requirement.

5.1 Terminology

Sound attenuation of building materials and structures is commonly measured for manufacturers by a specialist laboratory, over a wide range of frequencies. The measurements are usually combined into a single-number rating, such as Sound Transmission Class (STC), to make it possible to rank products.

Although STC is widely used to rate internal partitions, it is not appropriate for rating sound insulation used to combat outdoor noise because of the strong and sometimes dominant low-frequency content of exterior sound. Instead, the Outdoor-Indoor Transmission Class or OITC (defined in ASTM E1332) is used to rank sound insulation ratings of building envelope components according to their effectiveness as judged by occupants.

5.2 Proposed Building Exterior Wall Construction

The requirement of at least OITC 20 dB is easily met by standard exterior wall construction. For example, a list of representative wall constructions provided by Hardie Building Products shows that a standard wood stud wall with Hardie Plank exterior lap siding and ½ inch gypsum board interior walls will provide OITC sound attenuation of 25 dB. A copy of the Hardie report is attached as Appendix 6.

For part or all of the proposed building, stucco exterior finish may be preferred for design reasons. Exterior walls of this type will yield better OITC performance compared to the base wall described above, due to increased mass and thickness. The chart in Appendix 7 shows that a cement stucco exterior wall finish will result in OITC of 29 dB.

5.3 Windows and Doors

Provided the windows and doors used have a rating of OITC 20 dBA or more, the wall structure proposed above will meet the required 45 dBA interior Ldn as described in Section 2 of this report. Windows and doors meeting California energy efficiency requirements for new construction will usually meet the required OITC specification. For example, a window with two 1/8" glass panels separated by ½" air space will have an OITC rating of 23 dB.

6 . Summary Conclusions

The exterior noise environment at 4803 Scotts Valley Drive will not exceed Ldn = 65 dBA by year 2027. The proposed building design will meet the requirement of 45 dBA maximum interior Ldn until at least 2027, provided windows and glass doors with an OITC rating of 20 dB or more and a wall construction yielding OITC 20 dB or more are used.

Appendix 1. Calculation of Ldn

Leq is defined as the constant sound level that will generate acoustic energy equal to the energy represented by a set of varying measurements over a period of time. Ldn is defined as the Leq of a 24-hour data set after increasing by 10 dB the measurements made between 10 PM and 7 AM.

ASTM Standard E-1014 defines a procedure for measurement of outdoor sound levels:

- a) E-1014 requires a set of many measurements at fixed time intervals for each location. The number of measurements in a data set is dictated in E-1014 by the range of variation of the sound level during the test. In current practice, a sound level meter with logging capability enables the collection of more data points than required by the standard, and the minimum specified interval between measurements of five seconds is commonly used.
- b) The sound level for the measurement period is defined as the average of the data set. The precision of this technique is described by the ASTM document as “ ± 2 dB for the arithmetic mean”. However, E-1014 does not tell how to calculate Ldn, or Leq from which it is derived, and standard industry practice follows the definition of these levels as equal energy averages, rather than arithmetic means. Accuracy with this technique is limited by the accuracy of the measuring instrument, ± 1 dB in this case.

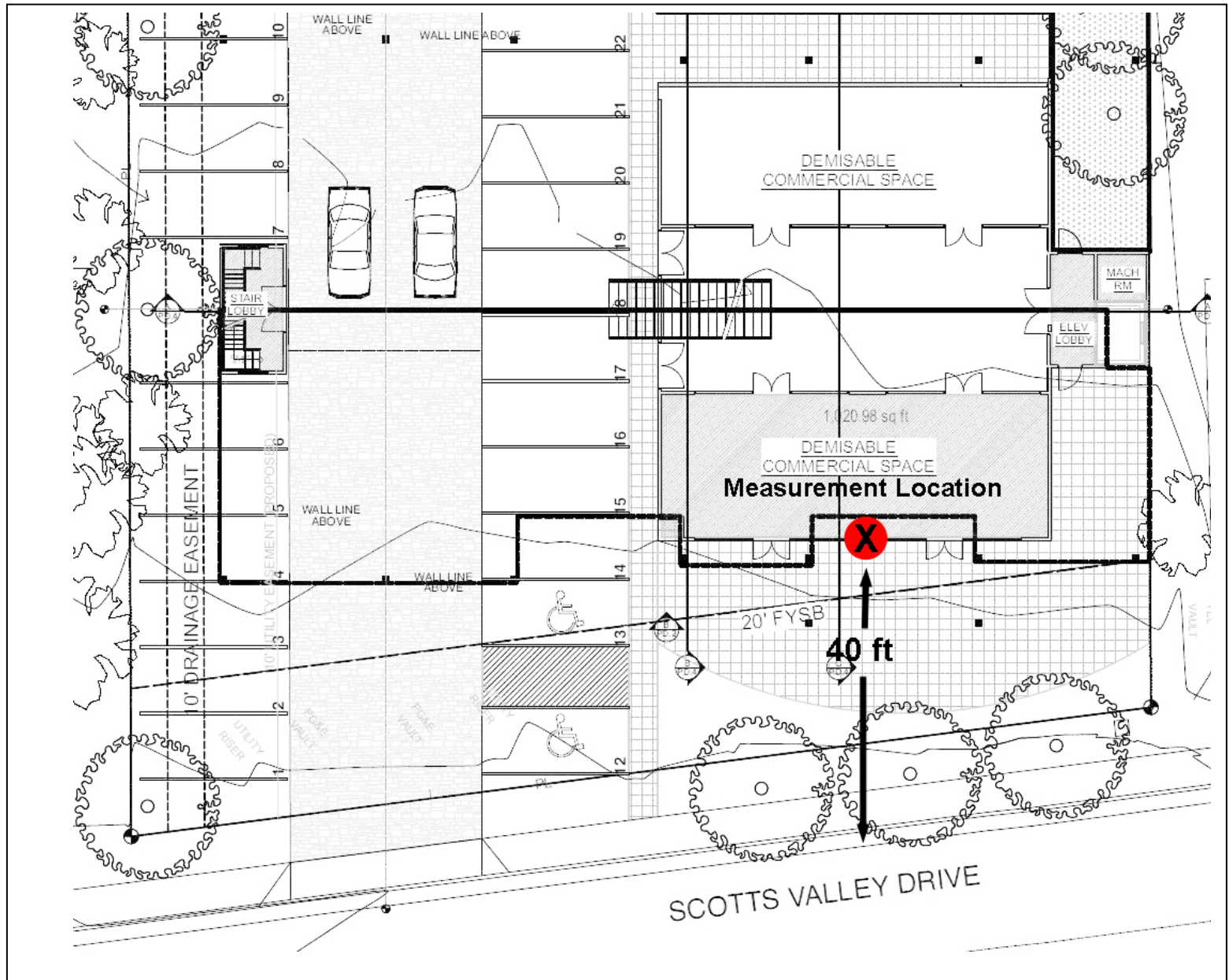
Measurement protocol and details

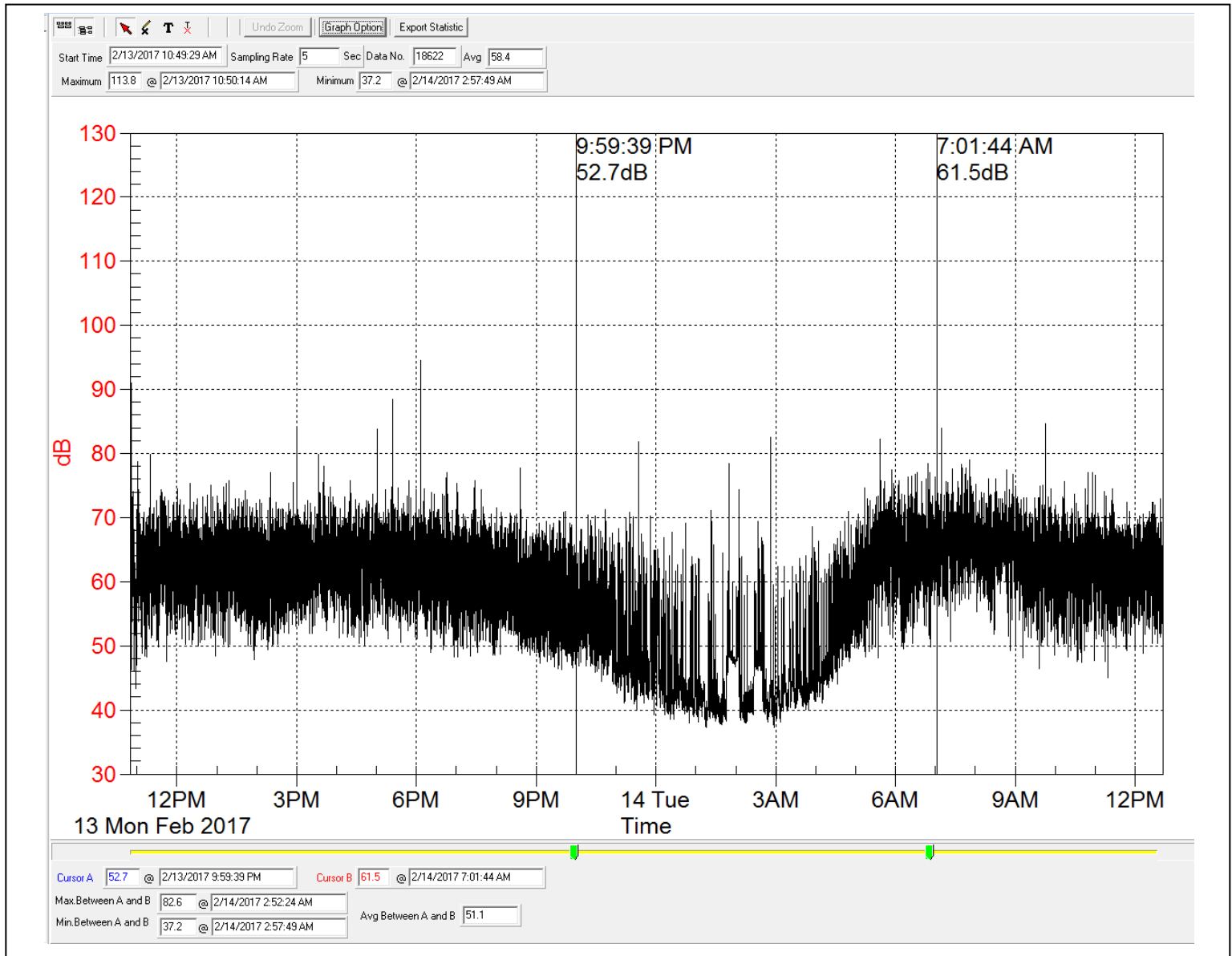
Measurement of Ldn normally requires collection of data throughout a 24-hour period. For this report, 24-hour sound level data was collected from noon February 13 to noon February 14, 2017 using two identical Center 322 Data Logging Sound Level Meters. These are Class 2 instruments, with a rated accuracy of ± 1 dB. The manufacturer-supplied windscreens were used during the entire data collection period. A calibration tone of 114 dBA was recorded at the beginning and checked at the end of the data collection period, and was found to vary less than 1 dB. Accuracy of the calibration tone source was confirmed using a Bruel & Kjaer 2203 Class 1 Sound Level Meter, with a rated accuracy of ± 0.3 dB.

The Data Logging meters were positioned near the approximate center of the front wall of the proposed building, about 40 feet from the nearest curb of Scotts Valley Drive and about 10 feet above ground level. The meters were not moved during the entire data collection period. There were no audible nearby sources of noise other than those noted in Section 3.1 above.

The collected data was transferred to a numeric computer file containing the A-weighted sound level at 5 second intervals during the entire measurement period, totaling 17,280 individual measurements. The collected data was then analyzed using an Excel spreadsheet program, implementing the equation described in Appendix 1.

Data from the two meters used differed by about 1 dB, probably due to variation of sound path and the effect of air turbulence and temperature. For this report, the higher of the two Ldn results is used.

Appendix 2. Measurement Location

Appendix 3. Graphical Data Display

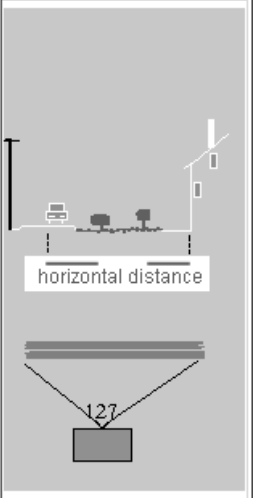
Appendix 4. Calculation of Traffic-Induced Noise

This calculation is based on projected traffic densities for 2027, and on current Santa Cruz Metro bus schedules. A distance of 75 feet (23 meters) from the center of Scotts Valley Drive is used, with a vehicle speed of 35 mph. Actual hourly traffic data is not available and will be substantially less in night hours. The traffic noise calculator was used to estimate traffic at four vehicles per minute from 10 PM to 7 AM, based on the measured average of 51.5 dBA for that interval. Using this night traffic estimate, the resulting 24 hour calculation predicts the 2027 Ldn level to be 1.6 dBA higher than the current on-site measured level.

The frequency of Metro bus traffic is not expected to increase appreciably from the current two per hour during the daytime and one per hour during evening.

Data on road		
Road traffic input data help	Day: 7.00-22.00	Night: 22.00-7.00
Motorcycles per hour	0	0
Cars per hour	1117	240
Speed cars	35	35
	☐ kilometers per hour	☒ miles per hour
Number of buses/hr	2	0
Number of heavy trucks/hr	0	0
Speed trucks	35	35
Road surface help	Smooth asphalt	

Data On Geometry - All Distances in Meters help	
Height of road	0
Horizontal distance in meters from center of road <i>Fill in 0 (zero, not blank!) when you want to calculate the distance for a given noise level</i>	23
Height of house or observer	3
View angle (127 grad= full view)	127
Fraction sound absorbing soil (0=all hard, non absorbing; 1= all absorbing)	0
Percentage reflection from opposite side (0=no surface; 1= all reflective).	0
Distance to reflective surface on opposite side	0
Height of reflecting object (must be at least 5 m)	0
Distance to intersection	0
Calculated Noise Level (Ldn) <i>(Or fill in (>40) if you want to calculate distance; distance must be set to zero)</i>	65
Night LAeq is	57



Appendix 5. Santa Cruz Metro bus routes passing 4803 Scotts Valley Drive

Bus Route	Scotts Valley Dr & Granite Creek	
35A	6:45am	-
35A	7:15am	-
35A	7:45am	-
35A	8:15am	-
35A	8:45am	-
35A	9:15am	-
35A	9:45am	-
35A	10:15am	-
35A	10:45am	-
35A	11:15am	-
35A	11:45am	-
35A	12:15pm	-
35A	12:45pm	-
35A	1:15pm	-
35A	1:45pm	-
35A	2:15pm	-
35A	2:45pm	-
35A	3:15pm	-
35A	3:45pm	-
35A	4:15pm	-
35A	4:45pm	-
35A	5:15pm	-
35A	5:45pm	-
35A	6:15pm	-
35A	6:45pm	-
35A	8:15pm	-
35A	9:45pm	-
35A	11:15pm	-

Appendix 6. Acoustic Performance of Wall Structures - Cement Siding**JAMES HARDIE BUILDING PRODUCTS, INC.**

10901 Elm Avenue, Fontana, California 92335
Telephone: (714) 356-6300 (800) 426-4051 Fax: (714) 355-4907

INTER-HOUSE LETTER

Date: 20 August 1992
To: L. Gries cc: P. Collins
File
From: J. Mulder
Subject: Sound Transmission Characteristics (STC) and
Outside/Inside Transmission Characteristics (OITC)
Ratings of Fiber-Cement Wall Assemblies

The following eight wall assemblies have been tested to establish sound transmission characteristics (STC) and outside/inside transmission characteristics (OITC) ratings in accordance with ASTM Test Methods (E90-85, C423-84a, and E413-73). The ratings achieved are shown in bold type.

1. 1/4" Harditex® Baseboard|Wood Stud/No Cavity Insulation|1/2" Thick Regular Gypsum Wallboard (GWB) - STC 38 - OITC 26;
2. 1/4" Harditex® Baseboard|Wood Stud/Fiberglass Cavity Insulation|1-2" Thick Regular GWB - STC 39 - OITC 27;
3. HardiPlank™ Lap Siding|Wood Stud|No Cavity Insulation|1/2" Thick Regular GWB - STC 36 - OITC 25;
4. HardiPlank™ Lap Siding|Wood Stud/Fiberglass Cavity Insulation|1/2" Thick Regular GWB - STC 40 - OITC 28;
5. 1/4" Harditex® Baseboard|1/2" Thick Type "X" GWB/Metal Stud|No Cavity Insulation|5/8" Thick Type "X" GWB - STC 45 - OITC 29;
6. 1/4" Harditex Baseboard|1/2" Thick Type "X" GWB|Metal Stud|Fiberglass Cavity Insulation|5/8" Thick Type "X" GWB - STC 49 - OITC 36;
7. 7/16" Hardibacker® Underlayment|Metal Stud/Mineral Fiber Cavity Insulation|5/8" Thick Type "X" GWB - STC 43 - OITC 29;
8. 7/16" Hardibacker® Underlayment w/ceramic tile|Wood Stud|Mineral Fiber Cavity Insulation|5/8" Thick Type "X" GWB - STC 39 - OITC 32.

Please contact me if you have any questions concerning this information.

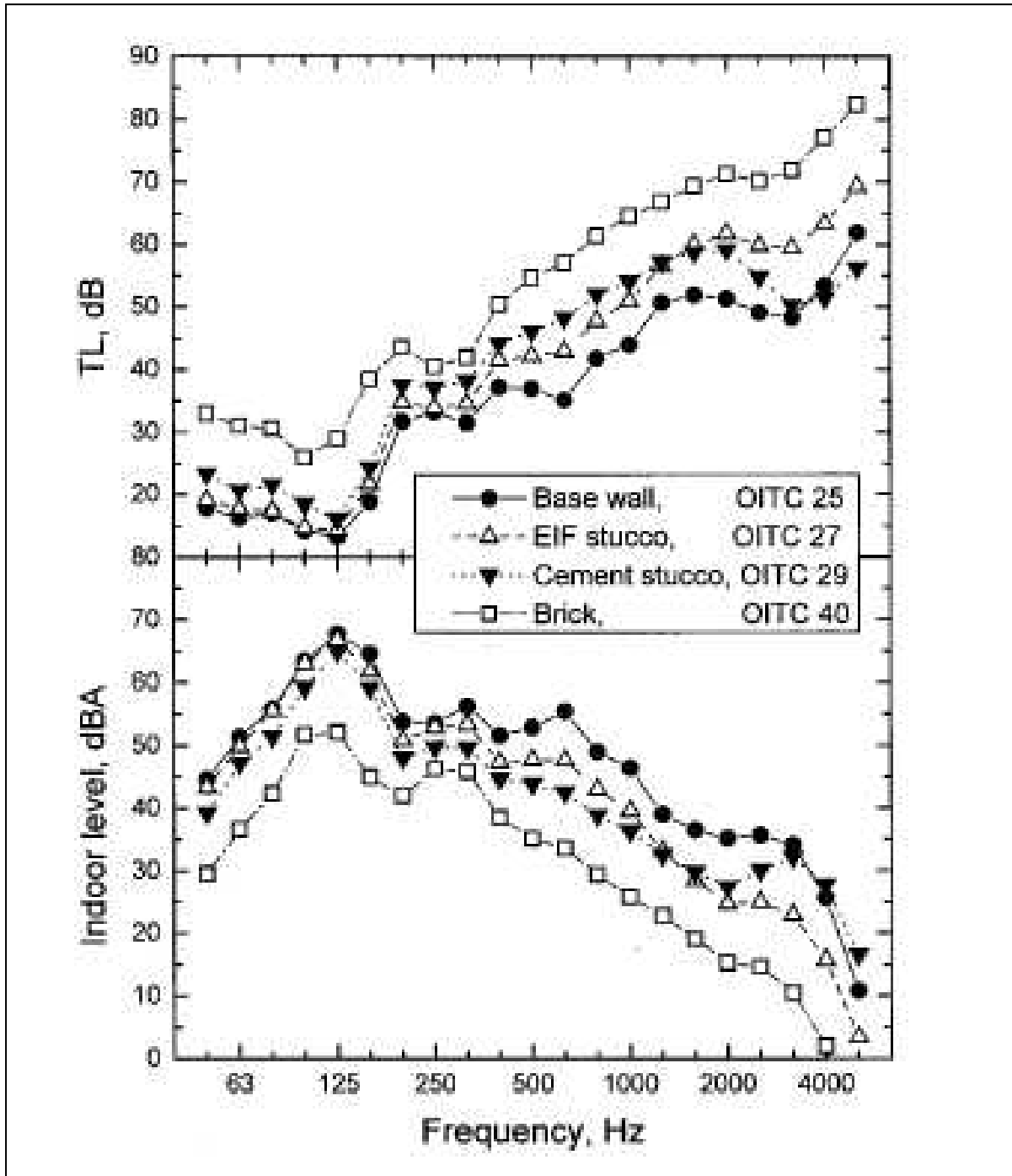
JLM/jlm
082092B

A member of the
JAMES HARDIE INDUSTRIES GROUP

Appendix 7. Acoustic Performance of Wall Structures - Stucco

The following chart of test results is from a published report:

On The Sound Insulation of Wood Stud Exterior Walls, Bradley, J.S.; Birta, J.A.
Journal of the Acoustical Society of America, v. 110, no. 6, Dec. 2001, pp. 3086-3096



GEOTECHNICAL INVESTIGATION
For
PROPOSED BAY MOUNTAIN COMMUNITY
MIXED USE PROJECT
Scotts Valley Drive
APN 022-082-76
Scotts Valley, California

Prepared
For
MR. ROBERT KIM
Santa Cruz, California

Prepared By
DEES & ASSOCIATES, INC.
Geotechnical Engineers
Project No. SCR-1106
February 2017



February 16, 2017

Project No. SCR-1106

ROBERT KIM
P.O. Box 639
Santa Cruz, California 95061

Subject: Geotechnical Investigation

Reference: Proposed Bay Mountain Community
Mixed Use Project
Scotts Valley Drive
APN 022-082-76
Scotts Valley, California

Dear Mr. Kim:

As requested, we have completed a Geotechnical Investigation for the proposed Bay Mountain Community mixed use project. The purpose of our investigation was to evaluate the soil conditions in the vicinity of the improvements and provide geotechnical recommendations for the proposed development.

This report presents the results, conclusions and recommendations of our investigation. If you have any questions regarding this report, please call our office.

Very truly yours,

DEES & ASSOCIATES, INC.

Rebecca L. (Dees) Boyd
Geotechnical Engineer
G.E. 2623

Copies: 1 to Addressee
4 to Daniel Silvernail, Architect



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GEOTECHNICAL INVESTIGATION

Introduction

This report presents the results of our Geotechnical Investigation for the proposed mixed use project proposed at APN 022-082-76 on Scotts Valley Dr. in Scotts Valley, California.

Purpose and Scope

The purpose of our investigation was to explore and evaluate surface and near surface soil conditions in the vicinity of the existing and proposed improvements to provide geotechnical recommendations for design and evaluation of the existing and proposed structures.

The specific scope of our services was as follows:

1. Site reconnaissance and review of available data in our files pertinent to the site and vicinity.
2. Exploration of subsurface conditions consisting of logging and sampling of six (6) exploratory borings drilled from 3.5 to 21 feet.
3. Laboratory testing to evaluate the engineering properties of the subsoils.
4. Engineering analysis and evaluation of the resulting field and laboratory test data. Based on our findings, we have developed geotechnical design criteria for general site grading, foundations, retaining walls, concrete slabs-on-grade, pavements and general site drainage.
5. Preparation of this report presenting the results of our investigation.

Project Location and Description

The 0.41 acre ($\pm$) property is located on the west side of Scotts Valley Drive about 0.9 miles northeast of Mount Hermon Road, Figure 1. The site is situated on a gentle 5 to 10 percent east facing slope that dips towards Scotts Valley Drive. Site drainage percolates into the ground or sheet flows towards Scotts Valley Dr.

The site was once developed with a residence and a detached garage/storage structure. The residence and its foundation were removed; the interior slab and foundation of the garage structure and a portion of the old driveway still remain. See Figure 2.

The project consists of a new three story mixed use structure with retail space and ground floor parking on the lower level, office space on the middle level and apartments on the upper level. The structure will be centrally located on the site with driveway and parking improvements in the front and back of the structure as well as parking on the



ground floor of the building. See Figure 3.

Field Investigation

Subsurface conditions at the site were explored on 9 May 2016 with one (1) hand augered boring drilled to 3.5 feet, on 6 January 2017 with four (4) exploratory test boring drilled 21 feet below existing grades and on 18 January 2017 with two exploratory test borings drilled to 21 feet. Other than the hand auger, the borings were drilled with 6-inch diameter solid flight augers advanced with truck and tractor mounted drilling equipment. The approximate locations of our test borings are indicated on our Figures 2 and 3.

Representative soil samples were obtained from the exploratory borings at selected depths, or at major strata changes. These samples were recovered using the 3.0 inch O.D. Modified California Sampler (L) or the Standard Terzaghi Sampler (T). The penetration resistance blow counts for the (L) and (T) noted on the boring logs were obtained as the sampler was dynamically driven into the in-situ soil. The test was performed by dropping a 140-pound hammer a 30-inch free fall distance enough times (blows) to drive the sampler 6 to 18 inches. The number of blows required to drive the sampler through each 6-inch penetration interval was recorded. The "blow count" recorded on the boring logs present the accumulated number of blows that were required to drive the sampler through the last 12 inches of that sample interval, unless otherwise noted. Blow counts for the large samples were converted to an equivalent Standard Penetration Test (SPT) field blow counts and recorded on the logs.

The soils encountered in the exploratory borings were continuously logged in the field and described in accordance with the Unified Soil Classification System (ASTM D2487 and ASTM D2488), Figure 4. Our test boring logs are included on Figures 5 to 10 of this report. The test boring logs describe the soils encountered in our borings and may not reflect soil conditions in other areas of the site.

Laboratory Testing

The laboratory testing program was directed toward a determination of the physical and engineering properties of the soils underlying the site. Moisture content and dry density tests were performed on representative undisturbed soil samples in order to determine the consistency of the soil and the moisture variation throughout the explored soil profile. Grain size analysis was performed to aid in soil classification. Atterberg Limits were performed to evaluate the soils relative shrink/swell potential. Direct shear testing was performed to evaluate the shear strength properties of the subsoils.

The results of all field and laboratory testing appear on the "Logs of Test Borings", opposite the sample tested.

Subsurface Soil Conditions

The site is mapped as being underlain by Terrace Deposits, which are described as, "Undifferentiated (Pleistocene)—Weakly consolidated to semi-consolidated heterogeneous deposits of moderately to poorly sorted silt, silty clay, sand, and gravel.



Mostly deposited in a fluvial environment. Thickness highly variable; locally as much as 60 ft thick. Some of the deposits are relatively well indurated in upper 10 ft of weathered zone”.

Our borings encountered 13 to 19 feet of Terrace Deposits over Santa Margarita Formation sandstone. The terrace deposits generally consisted of 2 feet of silty sand over 2.5 to 7 feet of clayey sand over 2 to 4 feet of sandy clay over up to 5 feet of clayey sand with gravels over fine clean sand. The top 2 to 4.5 feet of soil was loose to very loose. The soils below the upper loose zone were medium dense and the Santa Margarita Formation sandstone was dense.

Although not directly observed in our borings, fill was used to backfill the footing trenches where the residence was removed. We presume the fill is less than 2 feet thick where the footings were removed. There could be other areas of the site that were backfilled during the demolition process that were not evident during our investigation.

Groundwater

Groundwater was encountered in some of our test borings. Groundwater was encountered 5 to 7.5 feet below grade at the upper end of the proposed building (Borings 1, 3 and 6) but no groundwater was encountered in the lower areas of the site (Borings 2, 4 and 5) closest to Scotts Valley Drive.

Groundwater levels denote groundwater conditions at the locations and times observed, and it is not warranted it is representative of groundwater conditions at other locations or times. Groundwater levels can vary due to seasonal variations and other factors not evident at the time of our investigation.

Seismicity

The project site is located in a seismically active region and several active and potentially active faults are located in the vicinity of the site. The following is a general discussion of seismicity in the project area. A more detailed discussion of faulting and seismicity is beyond the scope of our services.

The closest faults to the site are the Zayante Fault, the San Andreas Fault, the offshore San Gregorio Fault and the Monterey Bay–Tularcitos Fault. See Figure 13. The San Andreas Fault is the largest and most active of the faults in the site vicinity. However, each fault is considered capable of generating moderate to severe ground shaking. It is reasonable to assume that the proposed development will be subject to at least one moderate to severe earthquake from one of the faults during the next fifty years.



	Zayante- Vergeles Fault	San Andreas Fault	San Gregorio Fault	Monterey Bay- Tularcitos Fault
Distance Miles	3.5	6.8	12.4	10.9
Direction	N	NE	W	SW

Structures designed according to the 2016 California Building Code may use the following parameters in their analysis. The following ground motion parameters may be used in seismic design and were determined using the USGS Ground Motion Parameter Calculator. The Seismic Design Category (SDC) for structures with an occupancy category of I or II is "D".

Ss	S1	SMs	SM1	SDs	SD1
1.604 g	0.632 g	1.604 g	0.948 g	1.069 g	0.652 g

PGAm	0.61g
Seismic Design Category (SDC) Occupancy Categories I and II	D

Liquefaction

Liquefaction occurs when saturated fine grained sands, silts and sensitive clays are subject to shaking during an earthquake and the water pressure within the pores builds up leading to loss of strength.

An analysis of the liquefaction potential of the soils underlying the site was conducted using the computer program LiquefyPro (CivilTech 2009). The LiquefyPro liquefaction program analyzes the liquefaction resistance of the sandy layers using the liquefaction resistance proposed by Blake, T.F (1997) and normalized SPT blow count (N_{1-60}) proposed by Liao & Whitman (1986). Fines corrections were performed using methods developed by Idress/Seed. Settlement analysis methods were developed by Ishihara/Yoshimine. Liquefaction analysis was performed on two representative borings that had encountered groundwater during drilling. We used the liquefaction program to evaluate dry settlement in two borings that did not encounter groundwater as a comparison. A factor of safety of 1.3 was used in our analysis.

Percent passing the No. 200 sieve was based on a combination of laboratory test results and estimates. Grain size analysis results were used to estimate the grain size for similar soils in other borings.

The groundwater depths used in our analysis were based on the high groundwater levels encountered in our borings. A groundwater level of 5 feet was used in Boring 1 and a groundwater level of 7.5 feet below grade was used in Boring 6.



Seismic conditions were analyzed using the maximum expected peak ground acceleration (PGA_M) of 0.612g. PGA_M was determined using the USGS Ground Motion Parameter Calculator and ASCE-7.

The results of our liquefaction analysis indicate there is a potential for liquefaction to develop in the clayey sands 5 to 9 feet below grade in Boring 1 and 10 to 13 feet below grade in Boring 6. Graphical results of our analysis showing the liquefaction potential versus depth can be found on Figures 14 and 15 in the Appendix.

Borings 1 and 6 are both located on the upslope side of the proposed building. The borings drilled on the downslope side of the building did not encounter groundwater so there is no liquefaction potential on the downslope side of the building closest to Scotts Valley Drive.

Effects of Liquefaction

Liquefaction could cause ground settlement to occur during and following strong seismic shaking. Since the building spans soil that are both liquefiable and non-liquefiable there is a higher than normal risk for differential settlement to occur. Our analysis indicates the maximum total settlement from liquefaction is 1.2 inches; including both dry settlement and liquefaction induced settlement. The minimum dry settlement in the non-liquefiable soil is 0.1 inches. Therefore, there could be up to 1.1 inches of differential settlement across the building from north to south. There could also be minor differential settlement in the east-west direction in the amount of 0.6 inches.

Sand boils are caused when water pressures are relieved at the ground surface and the upward movement of groundwater causes soil to rise to the ground surface creating a mound of soil at the surface. Since the potentially liquefiable layers are only 3 to 4 feet thick and only about ½ to 1 inch of ground settlement is expected, sand boils, if they were to occur would be small. Interior concrete slabs-on-grade should include a 6 inch gravel capillary break and a high quality moisture barrier below them to reduce moisture intrusion into the building.

There is a low potential for lateral spreading to occur below the site because the liquefiable soils are thin and discontinuous and the potentially liquefiable soils are confined by non-liquefiable soil on the downslope side.

Landsliding

The site is located on gentle slopes and there are no steep slopes in the project vicinity. The nearest steep slope is over 250 feet north of the site and there are several rows of houses between the slope and the site. There is a nil potential for landslides to undermine the site and a very low potential for landslides from above to impact the site.



DISCUSSIONS AND CONCLUSIONS

Based on the results of our investigation, the new mixed-use building proposed at the site is feasible provided the recommendations presented in this report are incorporated into the design and properly followed during construction of the development.

Primary geotechnical concerns for the project include mitigating differential settlement resulting from liquefaction, mitigating differential settlement due to varying soil conditions in the proposed foundation zone, controlling surface runoff and high groundwater and designing structures to resist strong seismic shaking.

There could be up to 1.1 inches of differential settlement across the building in the north to south direction and up to 0.6 inches of differential settlement in the east-west direction resulting from liquefaction induced settlement. Differential settlement of the upper loose soils could also occur under building loads since the top few feet of soil is loose across the site and there are areas with deeper loose soils where older structures were demolished.

To mitigate liquefaction induced differential settlement, the foundation can penetrate the potentially liquefiable soils using deep piers, or a mat slab foundation may be designed to accommodate 1.1 inches of differential settlement and 1 inch of tilt north to south according to applicable building standards that allow for safe occupancy of the building and safe ingress and egress from the building. Piers should be at least 15 feet deep to penetrate liquefiable soils; however, the actual depth of the piers should be determined by your designers based on the actual loads transmitted to the foundation. Mat slabs should be founded upon 3 feet of engineered fill to provide a firm, uniform base for slab support.

Groundwater was initially encountered 5 feet below grade in Boring 1, 8 feet below grade in Boring 3 and 7.5 feet below grade in Boring 6. The groundwater rose to 14 inches below grade in Boring 1 when the hole was left open for one hour. Pier drilling and any other excavations that extend down to the groundwater level may allow groundwater to rise in the excavations. If construction is performed in the drier summer months the probability of encountering high groundwater is reduced. If construction is performed during times of high groundwater, it may be necessary to de-water the area before excavations can be performed. De-watering recommendations can be developed on an as-needed basis.

Due to the potential for shallow groundwater, we do not recommend having crawlspaces that are lower than the exterior grade and we recommend keeping floor space above the exterior grade. If sub-excavated crawlspaces or basement areas are used, they should be waterproofed and drained according to their needs. Interior concrete floor slabs should have at least a 6 inch capillary break and a high quality moisture barrier beneath them to reduce moisture transmission through the slab.



Roof and surface runoff should be directed away from building foundations. Concentrated runoff may be percolated back into the soils using grass lined swales, bio-swales or gravel filled trenches as long as concentrated water is infiltrated into the soils located between the building and Scotts Valley Drive and not above the building. Due to the potential for high groundwater in the upper areas of the site we recommend dispersing runoff in the lower areas of the site closest to Scotts Valley Drive where no groundwater was encountered.

The site is located in a highly seismic region near several major fault zones. The proposed structure will most likely experience strong seismic shaking during the design lifetime. The foundation and structures should be designed utilizing the most current seismic design standards.



RECOMMENDATIONS

The following recommendations should be used as guidelines for preparing project plans and specifications:

General Site Grading

1. The geotechnical engineer should be notified **at least four days** prior to any grading or foundation excavating so the work in the field can be coordinated with the grading contractor and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the geotechnical engineer will perform the required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.
2. Areas to be graded should be cleared of all obstructions including vegetation, root laden topsoil, existing fill and any other unsuitable material. Stripping depths of 3 to 4 inches are anticipated.
3. Areas to receive engineered fill should be proof-rolled to provide a firm base for fill placement.
4. Engineered fill should be moisture conditioned to about 2 percent over optimum moisture content, placed in thin lifts less than 8-inches in loose thickness and compacted to at least 90 percent relative compaction. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557.
5. The on-site soils are generally suitable for use as engineered fill. At the time of our study, moisture contents of the surface and near-surface native soils ranged from about 13 percent to 40 percent. Based on these moisture contents, some moisture conditioning will likely be needed to use the soil as engineered fill. The soils moisture contents may need to be dried by aeration to achieve the recommended moisture content range for compaction.
6. The clay soils should not be used as engineered fill unless the soil is blended with non-expansive soil. Soils used for engineered fill should be granular, have a Plasticity Index less than 15, be free of organic material, and contain no rocks or clods greater than 6 inches in diameter, with no more than 15 percent larger than 4 inches.
7. Fill slopes should be keyed and benched at least 1.5 foot into firm native soil. The key should be at least 6 feet wide.
8. Fill slopes should be inclined no steeper than 2:1 (horizontal to vertical).



9. If a mat slab foundation will be used to support structures, the top 3 feet of soil beneath the slab should be removed and replaced as compacted engineered fill compacted to at least 90 percent relative compaction. A layer of filter fabric should be placed at the base of the excavation prior to placing engineered fill.

10. Engineered fill should be continuously observed by our firm. At a minimum, in-place density tests should be performed as follows: one test for every foot of fill placed, one test for every 1,000 sq. ft. of material for relatively thin fill sections and one test whenever there is a definite suspicion of a change in the quality of moisture control or effectiveness in compaction.

11. After the earthwork operations have been completed and the geotechnical engineer has finished his observation of the work, no further earthwork operations shall be performed except with the approval of and under the observation of the geotechnical engineer.

Earthwork Considerations

12. Although the exposed subgrades are anticipated to be relatively stable upon initial exposure, on site soils may pump and unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. The use of light construction equipment would aid in reducing subgrade disturbance. Should unstable subgrade conditions develop stabilization measures will need to be employed.

13. We recommend that the earthwork portion of this project be completed during extended periods of dry weather if possible. If earthwork is completed during the wet season (typically October through May) it may be necessary to take extra precautionary measures to protect subgrade soils. Wet season earthwork may require additional mitigation beyond that which would be expected during the drier summer and fall months.

Concrete Slabs-on-Grade

14. All existing fill should be removed from below proposed concrete slabs-on-grade.

15. The upper 12 inches of subgrade soil below concrete slabs-on-grade should be moisture conditioned to 1 to 2 percent over optimum moisture content and compacted to at least 90 percent relative compaction.

16. For driveway slabs the upper 24 inches of subgrade soil below concrete slabs-on-grade should be moisture conditioned to 1 to 2 percent over optimum moisture content and compacted to at least 90 percent relative compaction with the top 8 inches compacted to at least 95 percent relative compaction.

17. Upon completion of grading, care should be taken to maintain the subgrade prior to construction of the slabs. Construction traffic over the completed subgrade should be



avoided to the extent practical. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and re-compacted prior to slab construction.

18. All concrete slabs-on-grade can be expected to suffer some cracking and movement. However, thickened exterior edges, a well prepared subgrade including pre-moistening prior to pouring concrete, adequately spaced expansion joints and good workmanship should reduce cracking and movement.

19. Dees & Associates, Inc. are not experts in the field of moisture proofing and vapor barriers. In areas where floor wetness would be undesirable, an expert, experienced with moisture transmission and vapor barriers should be consulted. At a minimum, a blanket of 4 inches of free-draining gravel should be placed beneath the floor slab to act as a capillary break. In order to minimize vapor transmission, an impermeable membrane should be placed over the gravel.

Pavements

20. The top 24 inches of subgrade soil below pavements should be moisture conditioned to 1 to 2 percent over optimum moisture content and compacted to at least 90 percent relative compaction with the top 8 inches compacted to at least 95 percent relative compaction.

21. Upon completion of grading, care should be taken to maintain the subgrade moisture content prior to construction of pavements. Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and re-compacted prior to pavement construction.

22. The pavement section should consist of at least 3 inches of asphalt concrete over at least 8 inches of Class II aggregate base, or as specified by your designer.

23. The aggregate base below all Portland cement or asphalt concrete pavements should be moisture conditioned and compacted to at least 95 percent relative compaction prior to placing concrete or asphalt paving materials.

24. Only quality materials of the type and minimum thickness specified should be used. Baserock (R=78 minimum) should meet CalTrans Standard Specifications for Class II Untreated Aggregate Base. Subbase (R=50 minimum) if specified should meet CalTrans Standard Specifications for Class II Untreated Aggregate Subbase.



Utility Trenches

25. Utility trenches placed parallel to structures should not extend within an imaginary 1:1 (horizontal to vertical) plane projected downward from the bottom edge of the adjacent footing.

26. Trenches may be backfilled with compacted engineered fill placed in accordance with the grading section of this report. The backfill material should not be jetted in place.

27. The portion of utility trenches that extend beneath foundations should be sealed with 2-sack sand slurry (or equivalent) to prevent subsurface seepage from flowing under buildings.

Foundations

28. Foundations may consist of pier and grade beam foundations embedded into firm non-liquefiable soil or mat slab foundations bearing on engineered fill.

Pier and Grade Beam Foundations

29. Piers should be embedded at least 15 feet below the existing ground surface.

30. Piers embedded at least 15 feet below grade may be designed using an allowable end bearing capacity of 40,000 psf as long as the pier excavations are thoroughly cleaned of slough prior to placing concrete.

31. Piers should be at least 16 inches in diameter and be spaced at least 3 pier diameters apart.

32. Total and differential settlements for foundations supported on deep foundations are anticipated to be less than 0.4 inch and 0.2 inch respectively.

33. High groundwater should be expected during the winter months, especially along the upslope side of the proposed building. It is likely the piers that go below the groundwater table will have to be cased or need drilling fluid to keep the piers open until the concrete is poured.

34. If groundwater is encountered in the pier holes, the water should be pumped out or the concrete can be placed through a tremmie. If concrete is placed by tremmie methods, the end of the tremmie pipe must be embedded at least 3 feet into the concrete at all times.

35. A passive soil resistance of 350 pcf times 2 pier diameters, equivalent fluid weight, may be used in non-seismic pier design. Because there is 3 to 4 feet of potentially liquefiable soil between 5 and 13 feet, the passive resistance should be reduced to 200 pcf times 1.5 pier diameters in the top 13 feet of soil in seismic design. A passive soil resistance of 350 pcf, equivalent fluid weight, times 2.5 pier diameters may be used below 13 feet for both seismic and non-seismic conditions. The top 24 inches,



measured from existing grades, and the top 12 inches of pier depth, measured from finish grades, should be neglected in passive design.

36. Pier drilling and concrete placement must be continuously observed by a representative from Dees & Associates, Inc. if groundwater is encountered in the pier excavations.

37. Prior to placing concrete, foundation excavations should be thoroughly cleaned and observed by the soils engineer.

Landscape Retaining Walls

38. Landscape retaining walls (not part of the building) may be supported on spread footings or drilled piers. However, retaining walls supported on shallow foundations will be subject to up to 1.2 inches of liquefaction induced ground settlement. To reduce ground settlement below retaining walls, the foundations may be designed in accordance with the foundation recommendations provided for the building.

Spread Footing Foundations

39. Conventional spread footings should be a minimum of 12 inches deep, measured from the lowest adjacent final grade and be embedded at least 24 inches below existing grade. Footings should be a minimum of 18 inches wide.

40. Footings located adjacent to other footings or utility trenches should have their bearing surfaces founded below an imaginary 1:1 plane projected upward from the bottom edge of the adjacent footings or utility trenches.

41. Foundations designed in accordance with the above may be designed for an allowable soil bearing pressure of 1,800 psf. The allowable bearing capacity may be increased by 1/3 for short term seismic and wind loads.

42. Total and differential settlements under the proposed light building loads are anticipated to be less than 1 inch and 1/2 inch respectively.

43. Lateral load resistance for structures supported on footings may be developed in friction between the foundation bottom and the supporting subgrade. A friction coefficient of 0.35 is considered applicable. Where footings are poured neat against firm subgrade, a passive lateral earth pressure of 300 pcf may be used. The top 24 inches of soil, measured from existing grade, should be neglected in passive design.

44. Prior to placing concrete, foundation excavations should be observed by the soils engineer.

Pier Foundations

45. Piers should penetrate all loose soil (which is about 2 feet deep measured from existing grades) and be embedded a minimum of 3 feet into firm soil.



46. The concrete piers should be at least 12 inches in diameter and spaced at least 3 pier diameters apart, center to center.

47. Piers designed in accordance with the above may be designed for an allowable end bearing pressure of 1,800 psf for dead plus live loads. The end bearing values may be increased by one-third to include short-term seismic and wind loads.

48. For passive lateral resistance, an equivalent fluid weight (EFW) of 200 pcf times 1.5 pier diameters may be used in the top 13 feet. The top 1 foot of soil should be neglected in passive design.

49. Prior to placing concrete, foundation excavations should be thoroughly cleaned and observed by the soils engineer.

Lateral Pressures

50. Retaining walls should be designed to resist both lateral earth pressures and any additional surcharge loads. The following lateral earth pressures may be used in design.

Backfill Soil	Active Pressure	At Rest Pressure
Level Backslope	42 pcf	63 pcf
3:1 Backslope	50 pcf	84 pcf
2:1 Backslope	91 pcf	111 pcf

51. Retaining walls over 6 feet high should include a dynamic surcharge load of 20 pcf, equivalent fluid weight, added to the above active lateral earth pressures. The resultant force should be applied at a point located 0.3H above the base of the wall, where H is the height of the wall.

52. The above lateral pressures assume that the walls are fully drained to prevent hydrostatic pressure behind the walls. Drainage materials behind the wall should consist of Class 1, type A permeable material (Caltrans Specification 68-1.025) or an approved equivalent. The drainage material should be at least 12 inches thick. The drains should extend from the base of the walls to within 12 inches of the top of the backfill. A perforated pipe should be placed (holes down) about 4 inches above the bottom of the wall and be tied to a suitable drain outlet. Wall backdrains should be plugged at the surface with clayey material to prevent infiltration of surface runoff into the backdrains.

Site Drainage

53. Controlling surface and subsurface runoff is important to the performance of the project.

54. Surface drainage should include provisions for positive gradients so that surface runoff is not permitted to pond adjacent to foundations or other improvements. Where



bare soil or pervious surfaces are located next to the foundation, the ground surface within 10 feet of the structure should be sloped at least 5 percent away from the foundation. Where impervious surfaces are used within 10 feet of the foundation, the impervious surface within 10 feet of the structure should be sloped at least 2 percent away from the foundation. Swales should be used to collect and remove surface runoff where the ground cannot be sloped the full 10 foot width away from the structure. Swales should be sloped at least 2 percent towards the discharge point.

55. Full roof gutters should be placed around the eaves of the structure. Discharge from the roof gutters should be conveyed away from the downspouts and discharged in a controlled manner.

41. On-site retention is feasible for the site provided the retention areas are located on the downslope side of the proposed building where groundwater levels are at least 20 feet below grade based on the lack of groundwater encountered in our borings.

42. The soils consist of clayey sands with thin lenses of sandy clay in the upper 9 feet on the downslope side of the building. The NRCS Web Soil Survey indicates the near surface soils have a saturated permeability of 0.39 inches per hour which is a reasonable value for the soils encountered in our borings. The soils below 13 feet below grade consist of clean sand and percolation rates are expected to be at least 8 inches per hour.

43. The location of all drainage outlets should be reviewed and approved in the field prior to installation.

Plan Review, Construction Observation, and Testing

44. Dees & Associates, Inc. should be provided the opportunity for a general review of the final project plans prior to construction to evaluate if our geotechnical recommendations have been properly interpreted and implemented. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations. We recommend that our office review the project plans prior to submittal to public agencies, to expedite project review. Dees & Associates, Inc. also requests the opportunity to observe and test grading operations and foundation excavations at the site. Observation of grading and foundation excavations allows anticipated soil conditions to be correlated to those actually encountered in the field during construction.



LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be given.
2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field. The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. No other warranty expressed or implied is made.
3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report should not be relied upon after a period of three years without being reviewed by a soil engineer.

APPENDIX A

Site Vicinity Map

Boring Site Plan

Proposed Site Plan

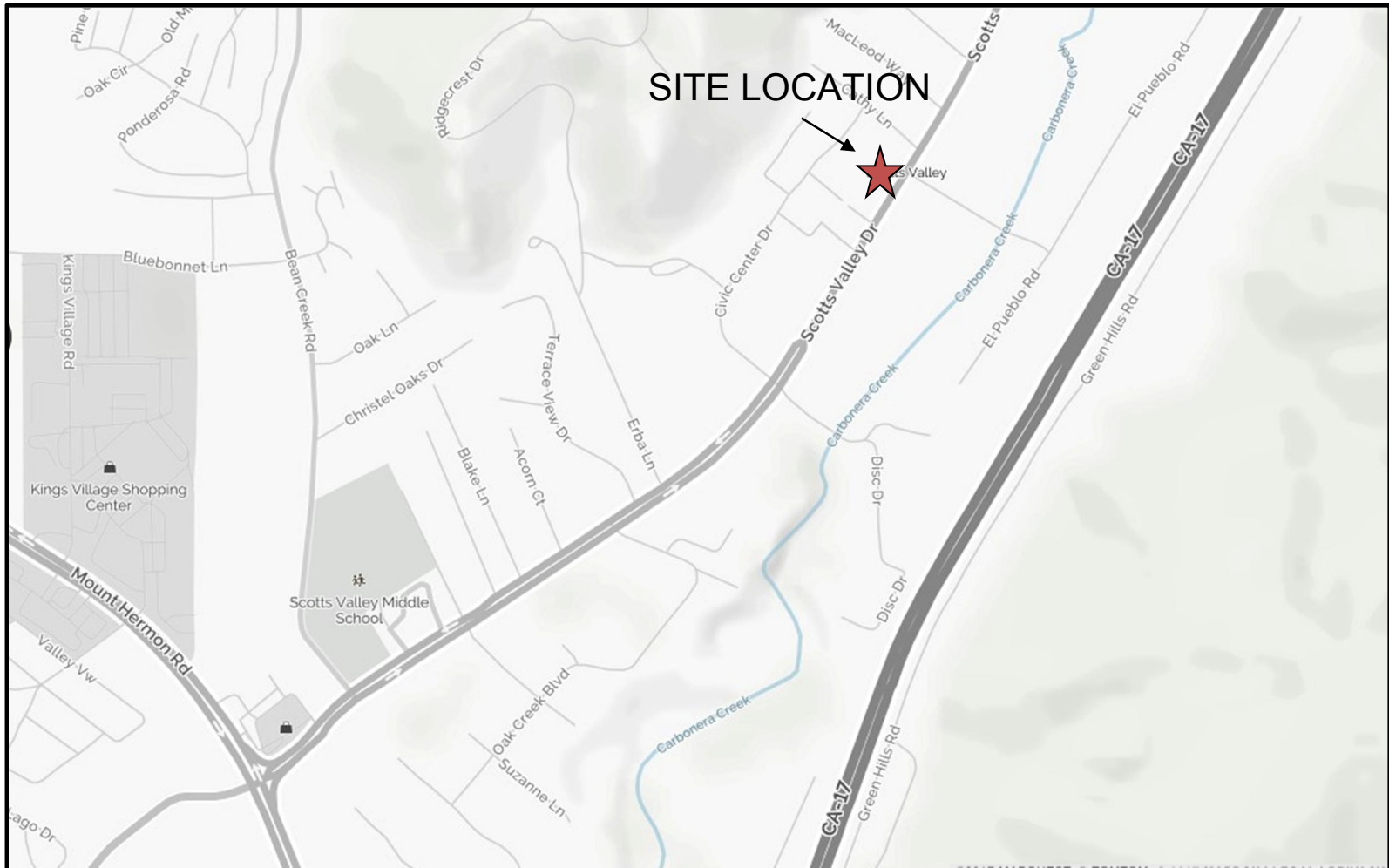
Unified Soil Classification System

Logs of Test Borings

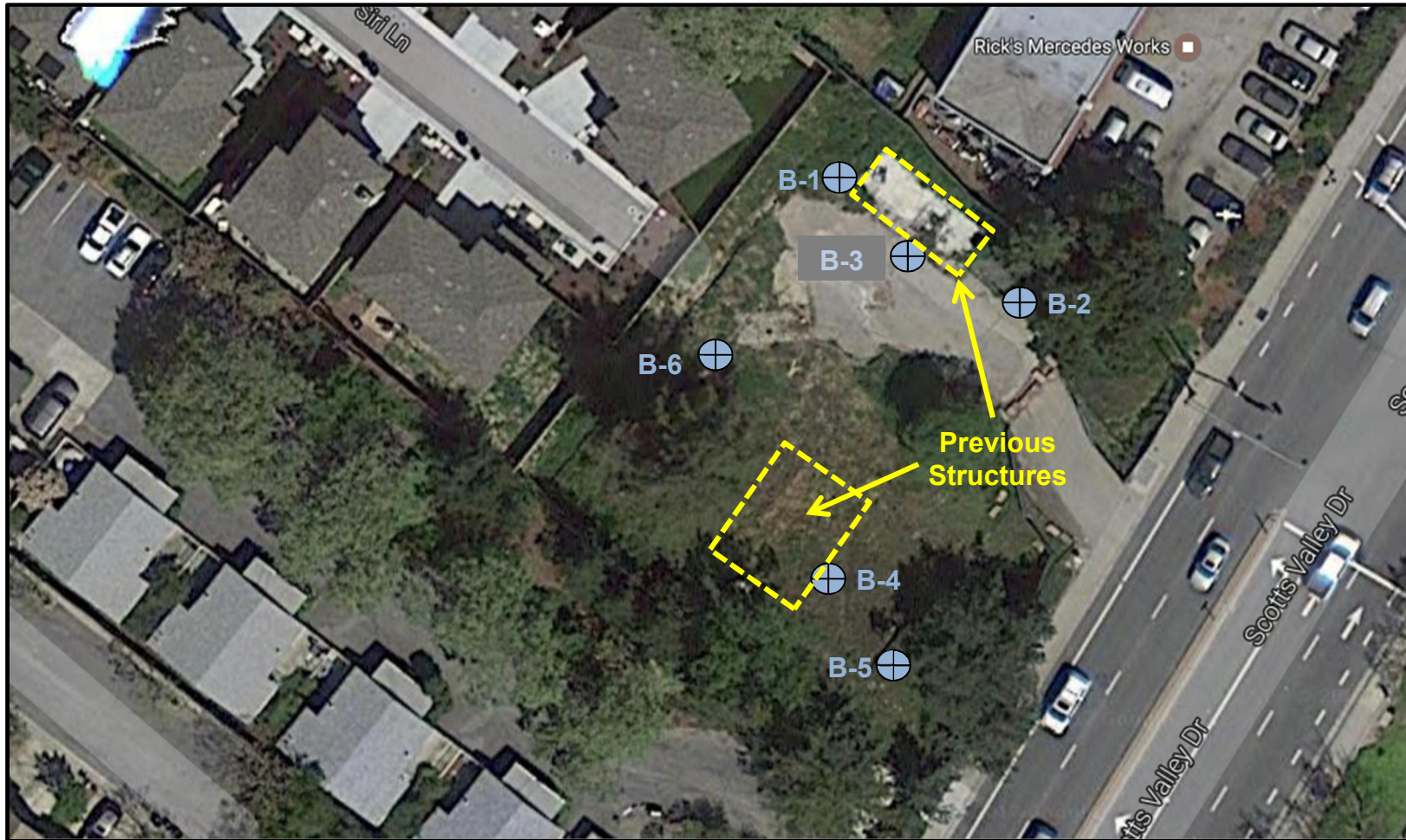
Laboratory Test Results

Fault Map

Liquefaction Analysis Results



SITE VICINITY MAP
Figure 1



BORING SITE PLAN
Figure 2

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES	CLASSIFICATION CRITERIA																											
COARSE-GRAINED SOILS** MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE (THE NO. 200 SIEVE SIZE IS ABOUT THE SMALLEST PARTICLE VISIBLE TO THE NAKED EYE)	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS (< 5% FINES)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	Wide range in grain sizes and substantial amounts of all intermediate particle sizes																											
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Predominantly one size or a range of sizes with some intermediate sizes missing																											
		GRAVELS WITH FINES (>12% FINES)	GM	Silty gravels, gravel-sand-silt mixtures	Non plastic fines or fines with low plasticity Atterberg limits below "A" line or PI < 4	Above "A" line with 4 < PI < 7 are borderline cases requiring use of dual symbols																										
			GC	Clayey gravels, gravel-sand-clay mixtures	Plastic fines Atterburg limits above "A" line with PI > 7																											
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS (<5% FINES)	SW	Well-graded sands, gravelly sands, little or no fines	Wide range in grain sizes and substantial amounts of all intermediate sizes missing																											
			SP	Poorly graded sands, gravelly sands, little or no fines	Predominantly one size or a range of sizes with some intermediate sizes missing Not meeting all gradation requirements for SW																											
		SANDS WITH FINES (>12% FINES)	SM	Silty sands, sand-silt mixtures	Non plastic fines or fines with low plasticity Atterburg limits below "A" line or PI < 4	Limits plotting in hatched zone with 4 < PI < 7 are borderline cases requiring use of dual symbols																										
			SC	Clayey sands, sand-clay mixtures	Plastic fines Atterburg limits above "A" line with PI > 7																											
FINE-GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE (THE NO. 200 SIEVE SIZE IS ABOUT THE SMALLEST PARTICLE VISIBLE TO THE NAKED EYE)	SILTS AND CLAYS (LIQUID LIMIT < 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity	**Gravels and sands with 5% to 12 % fines are borderline cases requiring use of dual symbols.																											
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays																												
			OL	Organic silts and organic silty clays of low plasticity																												
	SILTS AND CLAYS (LIQUID LIMIT > 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	RELATIVE DENSITY OF SANDS AND GRAVELS<table><tr><th>DESCRIPTION</th><th>BLOW / FT*</th></tr><tr><td>VERY LOOSE</td><td>0 – 4</td></tr><tr><td>LOOSE</td><td>4 – 10</td></tr><tr><td>MEDIUM DENSE</td><td>10 – 30</td></tr><tr><td>DENSE</td><td>30 – 50</td></tr><tr><td>VERY DENSE</td><td>OVER 50</td></tr></table> CONSISTENCY OF SILTS AND CLAYS<table><tr><th>DESCRIPTION</th><th>BLOWS / FT*</th></tr><tr><td>VERY SOFT</td><td>0 – 2</td></tr><tr><td>SOFT</td><td>2 – 4</td></tr><tr><td>FIRM</td><td>4 – 8</td></tr><tr><td>STIFF</td><td>8 – 16</td></tr><tr><td>VERY STIFF</td><td>16 – 32</td></tr><tr><td>HARD</td><td>OVER 32</td></tr></table> *Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. 12 vertical inches.		DESCRIPTION	BLOW / FT*	VERY LOOSE	0 – 4	LOOSE	4 – 10	MEDIUM DENSE	10 – 30	DENSE	30 – 50	VERY DENSE	OVER 50	DESCRIPTION	BLOWS / FT*	VERY SOFT	0 – 2	SOFT	2 – 4	FIRM	4 – 8	STIFF	8 – 16	VERY STIFF	16 – 32	HARD	OVER 32
		DESCRIPTION	BLOW / FT*																													
		VERY LOOSE	0 – 4																													
		LOOSE	4 – 10																													
	MEDIUM DENSE	10 – 30																														
DENSE	30 – 50																															
VERY DENSE	OVER 50																															
DESCRIPTION	BLOWS / FT*																															
VERY SOFT	0 – 2																															
SOFT	2 – 4																															
FIRM	4 – 8																															
STIFF	8 – 16																															
VERY STIFF	16 – 32																															
HARD	OVER 32																															
	CH	Inorganic clays of medium to high plasticity, organic silts																														
	OH	Organic clays of medium to high plasticity, organic silts																														

TEST BORING LOG							SCR-1106 Scotts Valley Dr.				
LOGGED BY: BB/MJ		DATE DRILLED: 1-6-17		BORING TYPE: 6" Solid Stem		BORING NO. 1					
DEPTH (feet)	SAMPLE NO.	SOIL DESCRIPTION	USCS SOIL TYPE	FIELD BLOW COUNT	SPT BLOW COUNT*	DRY DENSITY (PCF)	MOISTURE (%) IN-SITU	COHESION (PSF)	PHI ANGLE	% PASSING 200 SIEVE	PLASTICITY INDEX
1	1-1-3 L	Dark gray brown fine Silty SAND, very loose in top 18" then loose, very moist	SM	4 6 9	8		39.2			42.5	
2											
3											
4	1-2 T	Gray brown fine Clayey SAND with orange brown mudstone clasts to ¾", moist, medium dense (non-plastic)	SC	5 7 11	18		14.8				
5	1-3-1 L	▼ Groundwater first encountered at 5 feet (rose to 1 foot)	SC	8 12 14	13	80.3	35.9				
6											
7											
8	1-4 T	Gray brown Clayey SAND with Gravels, very moist, medium dense, sub-rounded gravels of mudstone to ½"		8 6 6	12		32.6			30.2	
9	1-5 T		CL	7 8 10	18		25.5			57.4	
10		Gray brown Clayey SAND/Sand CLAY, very moist, stiff									
11		Approximate contact									
12	1-6 T		SP	25 50/5"	50/5"		12.7				
13											
14											
15	1-7 T	Yellow brown with gray fine uniform graded SAND, moist, very dense		42 50/4"	50/4"		8.5				
16											
17											
18											
19											
20											
21											
22		Boring terminated at 21 feet									
23		Groundwater first encountered at 5 feet then rose to 1 foot after 1 hour									
DEES & ASSOCIATES, INC. 501 MISSION ST. STE. 8A SANTA CRUZ, CA 95060 www.deesgeo.com (831) 427-1770 Fax: (831) 427-1794				5			* Blow count converted: L = Field Blow Count / 2				

TEST BORING LOG								SCR-1106 Scotts Valley Dr.					
LOGGED BY: BB/MJ		DATE DRILLED: 1-6-17		BORING TYPE: 6" Solid Stem		BORING NO. 2							
DEPTH (feet)	SAMPLE NO.	SOIL DESCRIPTION		USCS SOIL TYPE	FIELD BLOW COUNT	SPT BLOW COUNT*	DRY DENSITY (PCF)	MOISTURE (%) IN-SITU	COHESION (PSF)	PHI ANGLE	% PASSING 200 SIEVE	PLASTICITY INDEX	
1	2-1-1 L	Dark brown fine Silty SAND, moist, very loose in top 12 inches then loose		SM	4								
2					5								
3	2-2 T	Gray brown fine Clayey SAND with some orange brown mudstone clasts to ½ inch, moist, medium dense		SC	10	8	107.2	15.9					
4					6								
5	2-3 T				10								
6		Gray brown fine Sandy CLAY with some orange brown mudstone clasts to ¾ inch, moist, medium dense		CL	12	22		22.7				18.7	
7	2-4 T				6								
8					8								
9	2-5 T	Gray brown Clayey SAND with orange brown mudstone Gravels, moist, very dense		SC	11	19		26.5			57.7		
10					18								
11	2-6 T				19	19	98.3	24.6					
12					30								
13	2-7 T	Cobble in sampler		SP	34								
14					37	71		11.9					
15	2-8 T												
16													
17	2-9 T												
18													
19	2-10 T												
20		Very fine white SAND with some brown orange Silt in top 6 inches then very fine white SAND in bottom 6 inches, damp, very dense			34								
21	2-11 T				50/4"			4.5					
22													
23	2-12 T	Boring terminated at: 21 feet No groundwater encountered											
24													
DEES & ASSOCIATES, INC. 501 MISSION ST. STE. 8A SANTA CRUZ, CA 95060 www.deesgeo.com (831) 427-1770 Fax: (831) 427-1794				6				* Blow count converted: L = Field Blow Count / 2					

TEST BORING LOG							SCR-1106 Scotts Valley Dr.				
LOGGED BY: BB		DATE DRILLED: 1-6-17		BORING TYPE: 6" Solid Stem		BORING NO. 3					
DEPTH (feet)	SAMPLE NO.	SOIL DESCRIPTION	USCS SOIL TYPE	FIELD BLOW COUNT	SPT BLOW COUNT*	DRY DENSITY (PCF)	MOISTURE (%) IN-SITU	COHESION (PSF)	PHI ANGLE	% PASSING 200 SIEVE	PLASTICITY INDEX
1		Gray brown Silty SAND									
2		Gray brown Sandy SILT									
3											
4		Approximate contact									
5											
6		Gray brown Clayey SAND with Gravel									
7											
8		▼ Groundwater first encountered at 8 feet then rose to 5 feet after 1 hour									
9											
10		Boring terminated at: 10 feet									
11		Groundwater first encountered at 8 feet then rose to 5 feet									
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											

DEES & ASSOCIATES, INC. 501 MISSION ST. STE. 8A SANTA CRUZ, CA 95060 www.deesgeo.com (831) 427-1770 Fax: (831) 427-1794	7	* Blow count converted: L = Field Blow Count / 2
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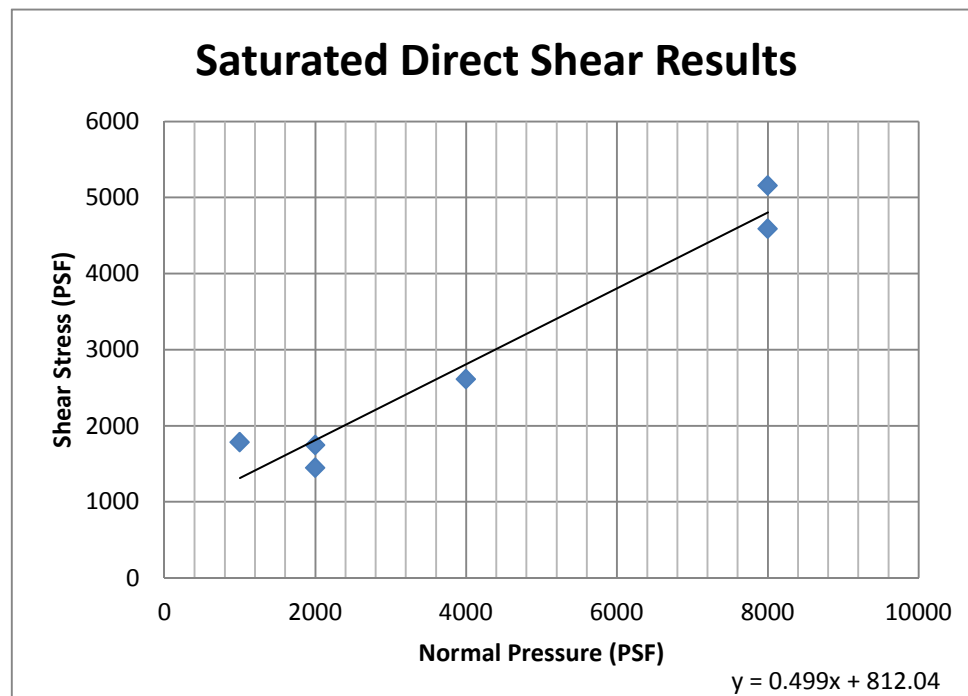
TEST BORING LOG							SCR-1106 Scotts Valley Dr.					
LOGGED BY: MJ		DATE DRILLED: 1-18-17		BORING TYPE: 6" Solid Stem		BORING NO. 4						
DEPTH (feet)	SAMPLE NO.	SOIL DESCRIPTION	USCS SOIL TYPE	FIELD BLOW COUNT	SPT BLOW COUNT*	DRY DENSITY (PCF)	MOISTURE (%) IN-SITU	SATURATED	COHESION (PSF)	PHI ANGLE	% PASSING 200 SIEVE	PLASTICITY INDEX
1	4-1-1 L	Dark brown Silty SAND, moist, very loose	SM	5								
2				3								
3	4-2 T	Light grayish brown Clayey SAND, moist, medium dense	SC	8	2	112.8	13.3					
4				13								
5	4-3-1 L	Dark grayish brown Sandy CLAY with some mudstone clasts, moist, stiff	CL	11	24		14.3					
6				8								
7	4-4 T			11								
8				14	13	91.3	31.3	37.1	812	26.5		
9	4-5 T			5								
10				7								
11	4-6 T	Light yellowish brown Clayey SAND with Gravel, moist, medium dense	SC	9	16		19.2					
12				15								
13	4-7 T			13								
14				11	24							
15	4-8 T	Light yellow fine graded SAND mottled with brown clay, moist, very dense	SP									
16				37								
17	4-9 T			50/5"	50/5"		18.4					
18												
19	4-10 T											
20				50/5.5"	50/5.5"							
21												
22												
23												
Boring terminated at: 20.5 feet No groundwater encountered												
DEES & ASSOCIATES, INC. 501 MISSION ST. STE. 8A SANTA CRUZ, CA 95060 www.deesgeo.com (831) 427-1770 Fax: (831) 427-1794			8				* Blow count converted: L = Field Blow Count / 2					

TEST BORING LOG								SCR-1106 Scotts Valley Dr.						
LOGGED BY: CL/DP		DATE DRILLED: 5-9-16		BORING TYPE: 4" Hand Auger			BORING NO. 5							
DEPTH (feet)	SAMPLE NO.	SOIL DESCRIPTION			USCS SOIL TYPE	FIELD BLOW COUNT	SPT BLOW COUNT*	DRY DENSITY (PCF)	MOISTURE (%) IN-SITU	COHESION (PSF)	PHI ANGLE	% PASSING 200 SIEVE	PLASTICITY INDEX	
- 1	5-1 B	Brown Silty SAND with Gravels to ½ inch, damp, loose then medium dense			SM									
- 2		Brown fine Clayey SAND, moist, medium dense			SC									
- 3	5-2 B	Tan Clayey fine SAND, moist, medium dense			CL									
- 4		Boring terminated at 3.5 feet No groundwater encountered												
- 5														
- 6														
- 7														
- 8														
- 9														
- 10														
- 11														
- 12														
- 13														
- 14														
- 15														
- 16														
- 17														
- 18														
- 19														
- 20														
- 21														
- 22														
- 23														
DEES & ASSOCIATES, INC. 501 MISSION ST. STE. 8A SANTA CRUZ, CA 95060 www.deesgeo.com (831) 427-1770 Fax: (831) 427-1794					9			* Blow count converted: L = Field Blow Count / 2						

TEST BORING LOG							SCR-1106 Scotts Valley Dr.					
LOGGED BY: MJ		DATE DRILLED: 1-18-17		BORING TYPE: 6" Solid Stem		BORING NO. 6						
DEPTH (feet)	SAMPLE NO.	SOIL DESCRIPTION	USCS SOIL TYPE	FIELD BLOW COUNT	SPT BLOW COUNT*	DRY DENSITY (PCF)	MOISTURE (%) IN-SITU	COHESION (PSF)	PHI ANGLE	% PASSING 200 SIEVE	PLASTICITY INDEX	
1	6-1-2 L	Dark brown Silty SAND, moist, very loose	SM	3	3		24.2			27.6		
2				2								
3				3								
4	6-2 T	Light grayish brown Clayey Sand with some mudstone gravels up to ½ inch, very moist, loose	SC	2	5							
5				2								
6				3								
7	6-3-1 L	Dark brown Clayey SAND with some gravels, moist, medium dense	SC	12	16							
8				13								
9				19								
10	6-4 T	▼ Groundwater encountered at 7.5 feet	CL	6	15							
11												9
12												6
13	6-5 T	Light grayish brown Sandy CLAY with mudstone gravels up to ¾ inch, very moist, stiff	SC/CL	3	5		27.4			50.1	13.5	
14												2
15												3
16	6-6 T	Light grayish brown Clayey SAND with gravels up to 1 inch, moist, medium dense	SC	12	18		23.1			39.2		
17				4								
18				14								
19	6-7 T	Approximate contact	SP	43	50/5"		12.5					
20												50/5"
21												
22		Boring terminated at: 21 feet Groundwater encountered at 7.5 feet Stayed at 7.5 feet after drilling										
23												
DEES & ASSOCIATES, INC. 501 MISSION ST. STE. 8A SANTA CRUZ, CA 95060 www.deesgeo.com (831) 427-1770 Fax: (831) 427-1794			10				* Blow count converted: L = Field Blow Count / 2					



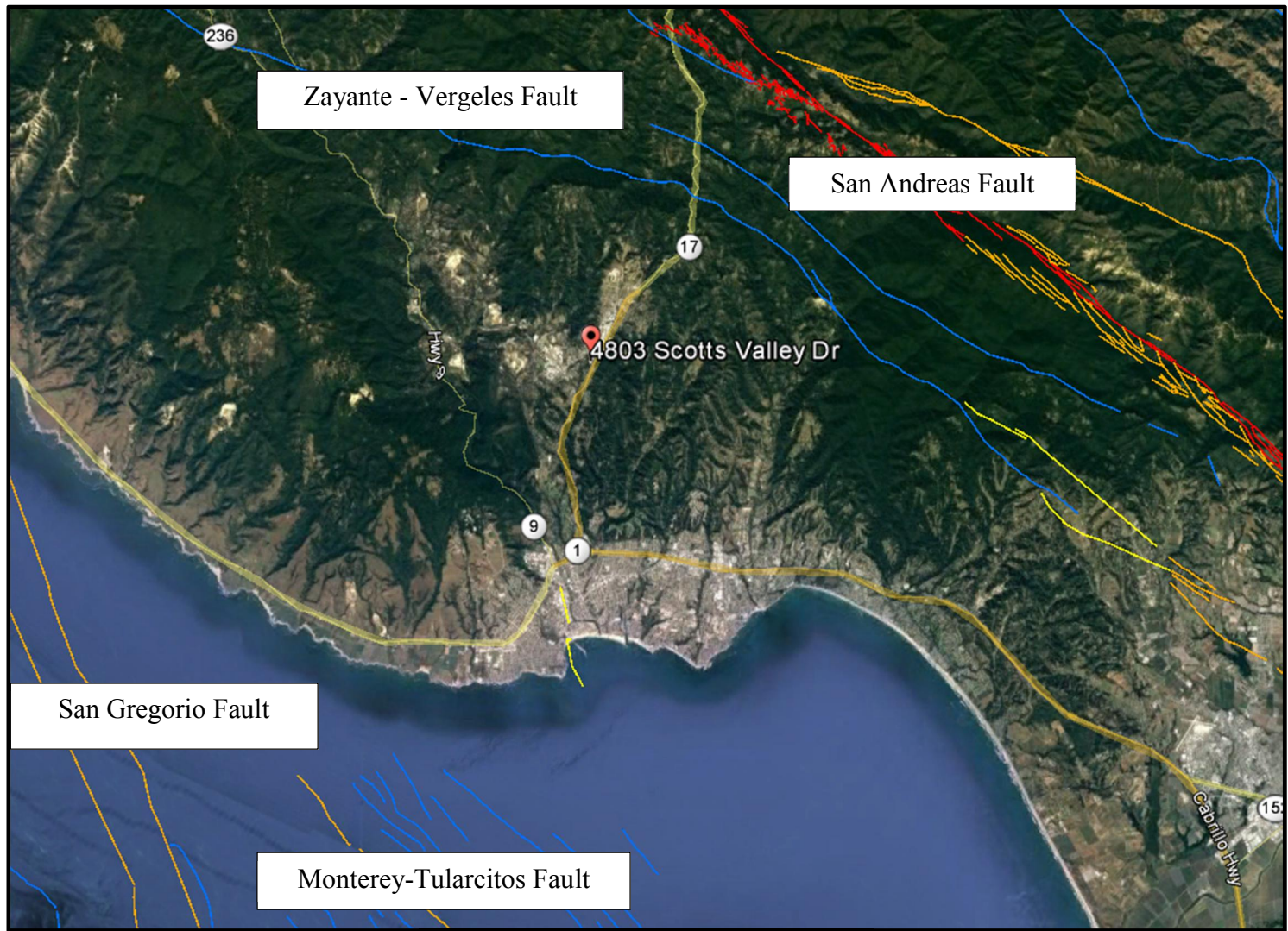
Normal Pressure (psf)	Shear Stress (Psf)	Phi	
1000	1783.9	26.5	
2000	1748.3		
8000	5161.3		
2000	1448.4		
4000	2616.1		
8000	4590.3	Strain Rate = 100	



Sample 4-3-1

**Cohesion = 812 psf
Phi Angle = 26.5 degrees**

Figure 12



FAULT MAP
Figure 13

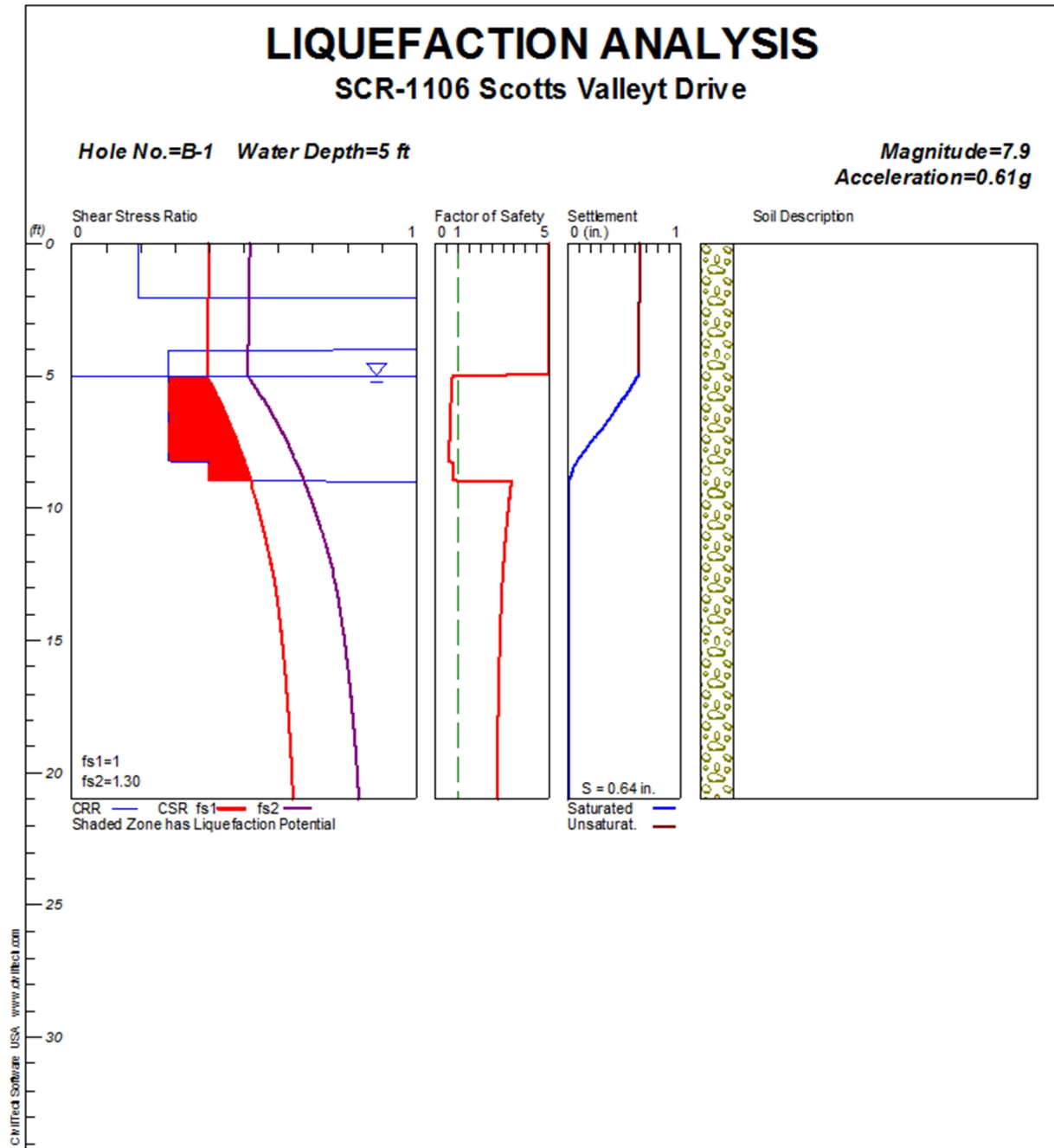


Figure 14

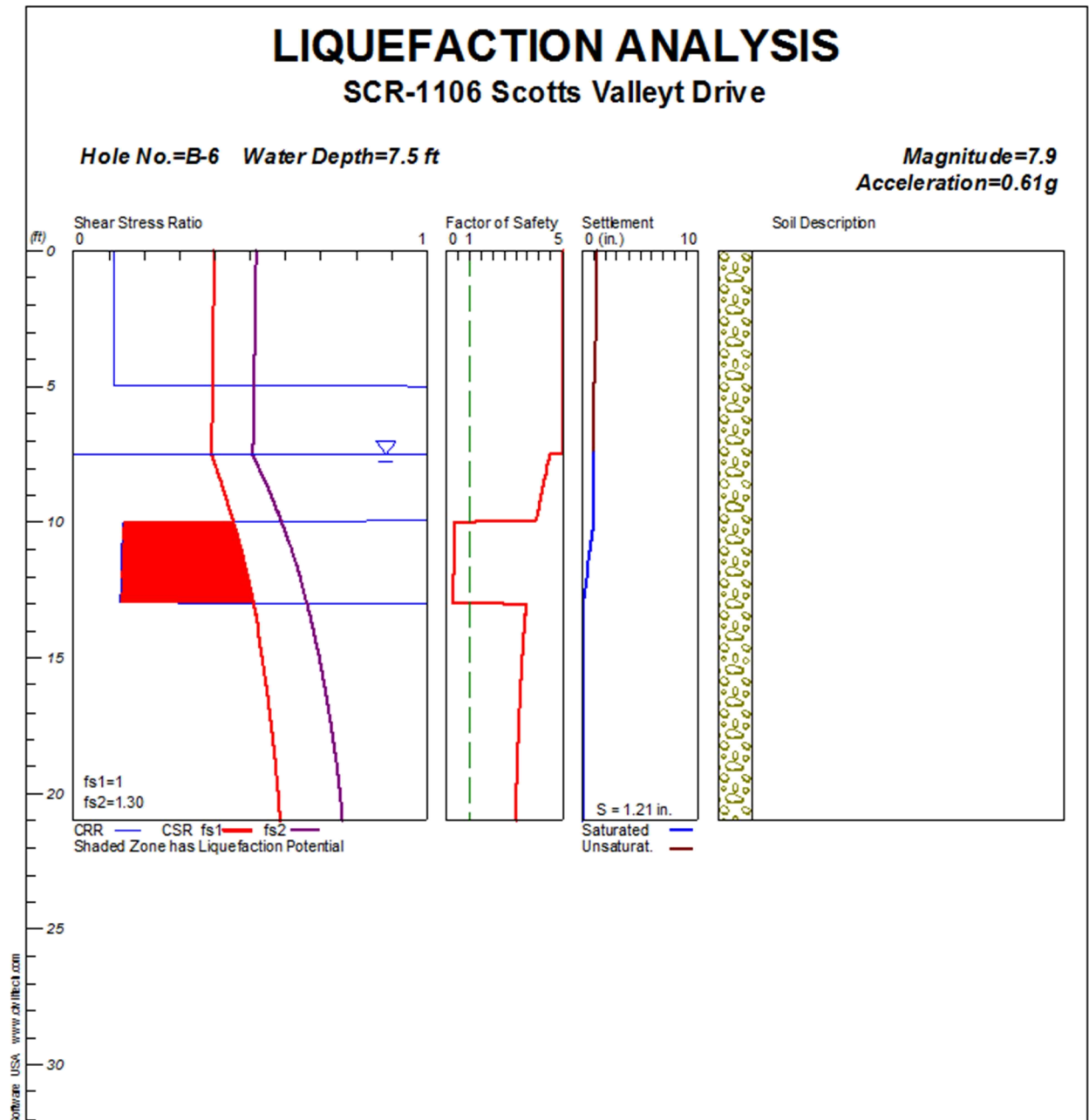


Figure 15



4803 Scotts Valley Drive
APN 022-082-58

Phase II
Tree Resource Evaluation/
Construction Impact Assessment/
Tree Protection Plan



Prepared for
Robert C. Kim
Project Proponent

Consulting Arborists

611 Mission Street
Santa Cruz, CA 95060
831.426.6603 office
831.460.1464 fax
jpallen@cruzio.com

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Attachments

 Appraisal Worksheet

 Tree Resource Inventory

 Tree Location Map 24 x 36

ASSIGNMENT/SCOPE OF SERVICES

The construction of Phase II is planned for the former Thompson property at 4803 Scotts Valley Drive, APN 022-082-58 in the city of Scotts Valley, CA. The site is populated with numerous native and non-native trees many of which meet “Protected” criteria. To ensure the preservation of tree resources and meet City requirements, the preparation of a tree resource evaluation/construction impact assessment is necessary for submittal to the City of Scotts Valley Planning Department.

To meet these requirements Mr. Robert C. Kim, the Phase II developer has requested the following services be performed:

- Verify location, catalog and map trees greater than 6 inches in trunk diameter growing within 20 feet of impacts.
- Identify each tree as to species and trunk diameter.
- Determine suitability for incorporation into the redesigned site.
- Review construction plans (grading, building and landscape), when available to determine potential impacts to trees.
- Provide recommendations for remedial treatments and maintenance to improve tree condition in preparation for construction.
- Create tree preservation specifications including a protection-fencing plan.
- Provide all findings in the form of a report accompanied by a Tree Location Map/Preservation Plan adhering to the requirements set forth by the City of Scotts Valley Planning Department.
- Calculate mitigation requirements for trees removed due to construction impacts.
- Determine appraised value of trees to be preserved

SUMMARY

Construction of eight single-family residences, Phase I has been completed at 4803 Scotts Valley Drive, APN 022-082-58 in Scotts Valley, CA. Phase II will include site stabilization, grading and construction of a commercial, residential or mixed use building with parking spaces to be entered from Scotts Valley Drive.

I have assessed, inventoried and mapped 16 trees/tree groups that are within 20 feet of the anticipated site stabilization, grading and construction impacts..

To construct the project as anticipated, three individual Trees #19, 21 and 30 along with Tree Group #20, a group of four acacias are required to be removed. Two of these Trees, #21 and 30 meet “Protected” criteria as defined by Scotts Valley Municipal Code section 17.44.080.

The remaining 12 trees that will be impacted by the proposed construction are located on adjacent properties to the north and south. Project ownership is responsible for notifying the adjacent property owners of the planned activities and gaining written permission for the proposed treatments prior to the onset of construction.

Once grade staking has been placed in the field, tree removal/retention totals may vary. The Project Arborist will make these determinations after grade staking is in place.

To compensate for the loss of Trees #21, a valley oak and #30 a large redwood with three substantial trunks, six, twenty-four inch box and two, fifteen gallon nursery grown replacement trees will be replanted as components of the planned landscape.

A Mitigation Maintenance and Monitoring Program will be defined to ensure the trees are maintained in perpetuity

The value of the preserved trees in proximity to the proposed grading for Phase II is \$20,300. As required by Scotts Valley Municipal Code Section 17.44.080, a retention bond in this amount shall be posted by the developer and held in trust by the City of Scotts Valley. If project management fails to implement recommended procedures or damages trees, the contract cost of implementation of recommended tree preservation treatments or appraised value of damage to these preserved trees, resulting from construction activities shall be determined by the Project Arborist, monetary fines assessed and deducted from the retention funds.

Monitoring, by the Project Arborist should occur at the intervals defined within this report to assure tree protection guidelines are adhered to and unforeseen impacts are resolved prior to damage occurring.

BACKGROUND

The original report for this development was prepared in 2008 for Owen Lawler a Land Use Consultant. The report was updated in September of 2013 for Samir Sharma of Siri Development LLC. Mr. Samir and his group constructed the eight residential units in Phase I.

In December of 2016 I was contacted by Mr. Robert C. Kim, the current property owner/developer. He requested I update the original report. Site inspections were conducted during the month of January of this year. 16 trees/tree groups greater than 6 diameter inches growing within 20 feet of the limits of grading were re-assessed.

Numbered metal tags have been attached to the each tree/tree group's representative trunk at six feet above grade. The corresponding numbers and surveyed tree locations are documented on the attached Tree Location map.

Trees were assessed visually while standing on the ground. Neither aerial inspections nor root crown examinations were performed.

Impacts were evaluated using a 2013 site plan from provided by Civil Consultants Group Inc. Landscape, grading, building and utility plans were not available for my review. They will be reviewed and appropriate modifications incorporated into the finalized tree protection plan when they are available.

OBSERVATIONS

Site Description

This property gently slopes from the west to the east. Four residential structures originally stood on the central and western sections of the parcel. These structures were demolished during the month of October in 2013. The dense foliage of a group of acacia trees was retained to provide a visual screen between Phase I construction activities and Scotts Valley Drive.

This property is bound to the south by a multi unit residential property, to the north by commercial properties, to the east by Scotts Valley Drive and to the west by Phase I.

Tree Descriptions

Trees species on and adjacent to this site are comprised of **valley oak** *Quercus lobata*, **Aleppo pine** *Pinus halepensis*, **acacia** *Acacia sp.*, **privet** *Ligustrum lucidum*, **Coast redwood** *Sequoia sempervirens*,

Trees on this property appear to have been planted as components of planned landscape several decades ago when the structures were constructed. They are generally in poor condition absent of proper maintenance or cultural care.

Tree #18 grows on the neighboring property to the north. It will be impacted by site stabilization grading requirements at the position indicated by the red line on the attached *Tree Location Map*.

Pre construction root pruning is necessary to ensure damage resulting from the required procedures is diminished.

Canopy clearance may be necessary. A simple direct cable system is recommended to support the weak attachment noted by the red arrow.



Written permission should be obtained from the tree owner prior to initiating these treatments.

Tree #30, pictured on the cover page is the most prominent tree on the property; a multi trunk coast redwood with three stout trunks. This tree has very weak trunk/stem attachments, typical of systems prone to failure. In it's current condition, this tree presents a risk to the safe use of the property.

This tree stands within the planned development and is required to be removed. Preservation of this tree would require a significant plan modification, the installation of support cables and elimination of key project features.

Replanting six, 24-inch boxed trees, as components of the planned landscape will compensate for the removal of this tree.

Coast redwood trees (Trees # 12, 13, 14 and 22 through 28) were planted adjacent to the southern property boundary by the owners of 4729 Scotts Valley Drive.

These trees are in good condition and provide valuable screening between the two properties.

Special treatments including pre-construction root pruning and the installation of tree protection fencing are required to ensure protection during construction.



TREE INVENTORY

The appended inventory lists information on 16 individual trees/tree groups growing within or adjacent to the parcel and documented on the attached Tree Location map. This inventory includes trees/tree groups with diameters $\geq$ six diameter inches at 4.5 feet above natural grade growing within 20 feet of the limits of grading.

The tree inventory lists species, trunk diameter, Critical Root Zone (CRZ) for preserved trees, health, structure, suitability for preservation, level/description of defined impacts, observations of tree defects, recommended procedures and whether the tree meets “protected” criteria.

Inventory ratings are based on the following criteria:

Critical Root Zone Radius: Provided for preserved trees only.

Individual tree root systems provide anchorage, absorption of water/minerals, storage of food reserves and synthesis of certain organic materials necessary for tree health and stability. The Critical Root Zone (CRZ) is the species-specific area necessary for root development opportunities to supply elements essential for each tree to stand upright and maintain vigor. This distance reflects the minimum footage measurement from the trunk required for the protection of the tree’s root zone.

Tree health and structure are separate issues that are related since both are revealed by tree anatomy. A tree’s vascular system is confined in a thin layer of tissue between the bark and wood layers. This thin layer is responsible for transport of nutrients and water between the root system and the foliar canopy. When this tissue layer is functioning properly, a tree has the ability to produce foliage (leaves). As long as the tree maintains a connected vascular system, it may appear to be in good health.

When conditions conducive to decay are present, fungi, bacteria or poor compartmentalization, wood strength is degraded. As decay advances, the tree’s ability to continue standing is compromised. Thus, a tree can appear to be in good health, but have poor structure.

Tree Health: This rating is determined visually. Annual growth rates, leaf size and coloration are examined. Indications of insect activity, decay and dieback percentages are also used to define health ratings.

Trees in “**good**” health are full canopied, with dark green leaf coloration. Areas of foliar dieback or discoloration are less than 10% of the canopy. Dead material in the tree is limited to small twigs and branches less than one inch in diameter. There is no evidence of insects, disease or decay.

Trees with a “**fair**” health rating have from 10% to 30% foliar dieback, with faded coloration, dead wood larger than one inch, and/or visible insect activity, disease or decay.

Trees rated as having “**poor**” health have greater than 30% foliar dieback, dead wood greater than two inches, severe decay, disease or insect activity.

Tree Structure: This rating is determined by visually assessing the roots, root crown (where the trunk meets the ground), supporting trunk, and branch structure. The presence of decay can affect both health and structural ratings.

Trees that receive a “**good**” structural rating are well rooted, with visible taper in the lower trunk, leading to buttress root development. These qualities indicate that the tree is solidly rooted in the growing site. No structural defects such as codominant stems (two stems of equal size that emerge from the same point), poorly attached branches, cavities, or decay are present.

Trees that receive a “**fair**” structural rating may have defects such as poor taper in the trunk, inadequate root development or growing site limitations. They may have multiple trunks, included bark (where bark turns inward at an attachment point), or suppressed canopies. Decay or previous limb loss (less than 2 inches in diameter) may be present in these trees. Trees with fair structure may be improved through proper maintenance procedures.

Poorly structured trees display serious defects that may lead to limb, trunk or whole tree failure due to uprooting. Trees in this condition may have had root loss or severe decay that has weakened their support structure. Trees in this condition can present a risk to people and structures. Maintenance procedures may reduce, but not eliminate these defects.

Suitability for preservation: This rating evaluates tree health, structure, species characteristics, age and potential longevity.

Trees with a “**good**” rating have adequate health and structure with the ability to tolerate moderate impacts and thrive for their safe, useful life expectancy.

A “**fair**” rating indicates health or structural problems have the ability to be corrected. They will require more monitoring and intense management with an expectation that their lifespan will be shortened by construction impacts.

Trees with a “**poor**” rating possess health or structural defects that cannot be corrected through treatment. Trees with poor suitability can be expected to continue to decline regardless of remedies provided. Species characteristics may not be compatible with redefined use of the area.

DESCRIPTION OF CONSTRUCTION IMPACTS

Site inspections and review of the plans resulted in the determination that the extensive grading requirements require all trees within the proposed “limits of grading” to be removed.

The cumulative impacts from the proposed grading activities are classified per severity as **None, Low, Moderate** or **High**. These classifications are defined as follows:

None, the tree is not near the impact area of the proposed grading.

Low, adverse affects from the proposed construction activities are minimal.

Moderate, this level of impacts will result in loss in tree vigor and/or stability. Recommended procedures must be implemented to decrease these impacts.

High, within or in close proximity to the proposed grading area. Tree removal is necessary or the understanding that premature tree mortality can be anticipated. Replacement or some form of compensatory mitigation is required for trees subject to this level of impacts.

The construction of this project as presented requires the following procedures;

Grading for site stabilization, parking and driveway construction as well as trenching for foundation, building, drainage and utility line construction.

These procedures require alteration of natural grade in the form of cut and/or fill (described below) at the defined “Limits of Grading”. Roots shattered during this process provide openings for opportunistic decay causing organisms degrading tree support systems and vigor.

Alteration of natural grade

- Cuts, lowering of natural grade, require the removal of soil until the desired elevation is reached. A cut within the trees Critical Root Zone can remove non-woody and woody roots. Non-woody (absorbing) roots are responsible for transporting moisture and nutrients necessary for maintaining tree health. Cuts that are more significant remove woody roots that provide structural support, compromising the tree’s ability to stand upright.
- Fill, increasing natural grade, often requires an initial cut to “knit in” and stabilize the material. This material is applied in layers and compacted in the process. Compaction breaks down soil structure by removing air and adding moisture. Anaerobic conditions may develop, promoting decay. Absorbing roots can suffocate from lack of oxygen. Structural roots may be compromised because of the decay.

REQUIRED PROCEDURES

Special Treatments

The following section discusses the recommended procedures to construct the project as projected to maintain tree vigor and reduce stress from construction impacts. Potential construction impacts that dramatically reduce the lifespan of existing trees can be decreased with the implementation of pre-construction treatments, proper construction methods and needed maintenance pruning.

- **Preconstruction root pruning** is to be performed by skilled labor. Roots are to be pruned cleanly. Bark should adhere to the wood without tearing. Wood fibers should remain intact without shattering. The following tools should be used:

- Hand-pruners
- Loppers
- Handsaw
- Reciprocating saw
- Chainsaw

When completed, the pruned portions should be covered with burlap or similar material and kept moist.

- A **“Ditchwitch”** type of trencher may be used adjacent to **Trees #12 through 14, 17, 18 and 22 through 28** for preconstruction root severance treatments under the direction of the Project Arborist. This procedure is defined below:
 - Establish a “final line of disturbance” with field staking. This line represents the furthest distance from the trees trunk that will allow the proposed construction.
 - Determine the depth of the cut required.
 - Begin trenching along the “final line of disturbance”.
 - Trench to the required depth.
 - “Clean up” shattered roots using the root pruning techniques defined above.
 - Install Tree Preservation fencing with straw bales to allow maximum distance from the tree while allowing space to construct the improvements.
- **Canopy clearance pruning** may be necessary for **Trees #17 and 18**. The Project Arborist will make these determinations after field stakes, indicating building placement have been placed.

- **A Simple Direct Cable** is recommended to support weakly attached stems of **Tree #18**
 - The cable should be installed using the following or similar hardware:
 - 1/2 or 5/8 inch “eye” lag bolts, depending on stem diameter
 - 1/4 inch Extra High Strength (EHS) cable
 - Pre-formed grips with thimbles

Note that: “The installation of cables, bolts and other hardware in trees is intended to reduce hazard potential. Such bracing does not permanently remedy structural weaknesses, and is not a guarantee against failure. The trees and hardware must be inspected periodically for hardware deterioration, adequacy and changes in the tree's and site condition. Inspection by a competent arborist is recommended at least every two years.”

Tree Removal

A total of three individual trees and a group of four acacias (**Trees #19, 21, 30 and Tree Group #20**) are required to be removed. Two of these trees (**Trees #21 and 30**) meet “protected” criteria.

Tree removal shall be performed in a sectional manner, in order to avoid damaging surrounding trees and natural resources.

Locations of trees to be removed are documented on the attached map (Tree Location Map).

Stump removal

Stumps, from the removed trees may be ground to 24” below natural grade or dug and disposed of off-site.

A qualified arborist, using the following industry guidelines should perform the above-described work.

- American National Standards Institute A300 for Tree Care Operations- Tree, Shrub and Other Woody Plant Maintenance-Standard Practices.
(Part 1)-2001 Pruning
(Part 3)-2000 (Support Systems a Cabling, Bracing, and Guying)
- International Society of Arboriculture:
Best Management Practices
- American National Standards Institute Z133.1-1994 for Tree Care Operations- Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush-Safety Requirements

To ensure the successful implementation of the recommended procedures **Site inspections** will be performed by the Project Arborist. Site inspections will take place at the following intervals throughout the course of the project:

- During all tree removal activities.
- Following on-site placement of grade stakes.
- After Tree Preservation fencing locations have been staked.
- Following Tree Protection fencing installation and prior to the commencement of grading.
- As necessary during the grading, building and landscape construction activities to ensure compliance with all conditions of project approval.

Site monitoring forms will be submitted to the City of Scotts Valley Planning Department at regular intervals.

Required Tree Replacement:

To compensate for the loss of “protected” Trees #21, a valley oak and #30 a large redwood with three substantial trunks, six, twenty-four inch box and two, fifteen gallon nursery grown replacement trees will be replanted as components of the planned landscape

The Project Arborist and Landscape Architect will identify suitable species and planting locations. A Mitigation Maintenance and Monitoring Program will be a condition of project approval to ensure the trees are maintained in perpetuity.

APPRAISED VALUE OF PRESERVED TREES

As required by Scotts Valley Municipal Code Section 17.44.080, the trees on this site to be preserved were valued using Trunk Formula Method. This procedure is consistent with the national standards authored by the Council of Tree and Landscape Appraisers and published in the year 2000 by the International Society of Arboriculture in the Guide for Plant Appraisal, Ninth Edition.

The Trunk Formula Method is used to appraise the monetary value of trees. Appraisal calculations for individual trees are included on an attached spreadsheet. This method uses planting costs, trunk diameter at 4.5 feet and a factor representing growth to determine the Basic Tree Cost. This Basic Tree Cost is multiplied by Species, Condition, Location and Damage factors to establish the appraised value of the loss.

The appraised value of the “protected” trees to be preserved for Phase II is \$20,300. A retention bond in this amount shall be posted by the developer and held in trust by the City of Scotts Valley. In the event project management fails to implement recommended procedures or damages trees, the contract cost of implementation of recommended tree preservation treatments or appraised value of damage to these preserved trees shall be determined by the Project Arborist, monetary fines assessed and deducted from the retention funds.

To ensure the protection of the trees remaining on neighboring properties it is imperative that the recommendations detailed within this document are incorporated as conditions of project approval.

Please contact me at 831-426-6603 with any questions.

Respectfully submitted,

James P. Allen
Registered Consulting Arborist #390

Phase II
Tree Preservation Specifications
4803 Scotts Valley Drive
APN 022-082-58

These guidelines should be printed on all pages of the development plans. Contractors and sub contractors should be aware of tree protection guidelines and restrictions. Contracts should incorporate tree protection language that includes “damage to trees will be appraised using the Guide to Plant Appraisal 9th Edition and monetary fines assessed”.

A pre construction meeting with the Project Arborist

A meeting with the Project Arborist, Project Manager and all contractors involved with the project shall take place prior to the onset of tree removal. Tree removal and preservation specifications will be reviewed and discussed.

Establishment of a tree preservation zone (TPZ)

Safety fencing, no less than 48 inches in height with metal stakes embedded in the ground, shall be installed in areas designated on the attached map. Fencing will be installed prior to the onset of grading, under the supervision of the Project Arborist and shall not be moved.

Restrictions within the Tree Preservation Zone (TPZ)

No storage of construction materials, debris, or excess soil will be allowed within the TPZ. Parking of vehicles or construction equipment in this area is prohibited. Solvents or liquids of any type should be disposed of properly, never within this protected area.

Field decisions

The Project Arborist, Soils Engineer and Grading Contractor will determine the most effective construction methods to maintain tree health.

Alteration of grade

Maintain the natural grade around trees. If trees roots are unearthed during the construction process the consulting arborist will be notified immediately. Exposed roots will be covered with moistened burlap until the Project Arborist makes a determination.

Trenching requirements

Any areas of proposed trenching will be evaluated with the Project Arborist and the contractor prior to excavation.

Tree canopy alterations

Unauthorized pruning of any tree on this site will not be allowed. Necessary tree canopy alterations will be performed to the specifications established by the Project Arborist.

Supplemental irrigation

Shall be provided using “soaker” hoses or similar method of delivery. Supplemental irrigation requirements shall be determined by the Project Arborist and may be required prior to and after completion of the grading, depending on seasonal soil moisture levels.



James P. Allen
 & Associates

Appraised Value of Preserved "Protected" Trees

4803 Scotts Valley Drive, Phase II

APN 022-082-58

Dedicated to the Preservation of Trees

Trunk Formula Method

TREE #	SPECIES	DIAMETER INCHES @ 4 feet above grade	RATING %				APPRAISED VALUE
			Condition	Site	Contribution	Placement	
12	Redwood <i>Sequoia sempervirens</i>	14.3	64	55	70	70	\$2,250
18	coast live oak <i>Quercus agrifolia</i>	17.7	64	55	70	70	\$4,251
22	Redwood <i>Sequoia sempervirens</i>	19.3	64	55	70	70	\$4,045
23	Redwood <i>Sequoia sempervirens</i>	16.4	64	55	70	70	\$2,939
24	Redwood <i>Sequoia sempervirens</i>	14	64	55	70	70	\$2,159
25	Redwood <i>Sequoia sempervirens</i>	14.7	64	55	70	70	\$2,374
26	Redwood <i>Sequoia sempervirens</i>	14.5	64	55	70	70	\$2,312
					Total Value		\$20,330
					Appraised Value ¹		\$20,300

¹Total appraised value rounded to the nearest \$100 by convention:



4803 Scotts Valley Drive
APN 022-082-58

Dedicated to the Preservation of Trees

James P. Allen
Associates

PHASE II
TREE RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	CRITICAL ROOT ZONE FOOTAGE RADIUS	HEALTH	STRUCTURE	PRESERVATION SUITABILITY	IMPACTS Level of Severity/ Description	•OBSERVATIONS •REQUIRED PROCEDURES •MEETS "PROTECTED" CRITERIA Yes/No
12	coast redwood <i>Sequoia sempervirens</i>	14.3	12	Fair	Fair	Fair	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property Crown height reduced for utility line clearance •Preserve and Protect Pre construction root pruning •Yes
13	coast redwood <i>Sequoia sempervirens</i>	12	10	Fair	Fair	Fair	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property Crown height reduced for utility line clearance •Preserve and Protect Pre construction root pruning •No
14	coast redwood <i>Sequoia sempervirens</i>	8.2	6	Fair	Fair	Fair	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property Crown height reduced for utility line clearance •Preserve and Protect Pre construction root pruning •No
17	Aleppo pine <i>Pinus halepensis</i>	6.6	8	Fair	Fair	Fair	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property •Preserve and Protect Pre construction root pruning •No



James P. Allen
& Associates

4803 Scotts Valley Drive
APN 022-082-58

Dedicated to the Preservation of Trees

PHASE II TREE RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	CRITICAL ROOT ZONE FOOTAGE RADIUS	HEALTH	STRUCTURE	PRESERVATION SUITABILITY	IMPACTS Level of Severity/ Description	•OBSERVATIONS •REQUIRED PROCEDURES •MEETS "PROTECTED" CRITERIA Yes/No
18	coast live oak <i>Quercus agrifolia</i> .	17.7 @ 24" above grade	16	Fair	Poor	Fair	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property - Poor trunk/stem attachments - Canopy extends more than 25' over property boundary •Preserve and Protect - Pre construction root pruning - Possible canopy clearance pruning - Simple Direct Cable system •Yes
19	privet <i>Ligustrum lucidum</i> sp.	18.6 @ 6" above grade	12	Fair	Poor	Poor	HIGH/ Trunk/canopy conflicts with proposed grading. Proximity to sidewalk.	•Large diameter dead and broken sections - Divides into 3 stems at 12" above grade •Remove due to Construction Impact •No
20	acacia <i>Acacia</i> sp.	Group of 4 trees 6-16.2	12	Fair	Poor	Poor	HIGH/ Trunk/canopy conflicts with proposed grading	•Group of 4 trees, 1 is multi-stem •Remove due to Construction Impact •No
21	valley oak <i>Quercus lobata</i>	14.9	14	Fair	Poor	Poor	HIGH/ Trunk/canopy conflicts with proposed grading. Proximity to utility vault.	•Stands on property boundary - Poor trunk/stem attachments •Remove due to Construction Impact •Yes



James P. Allen
& Associates

4803 Scotts Valley Drive
APN 022-082-58

Dedicated to the Preservation of Trees

PHASE II
TREE RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	CRITICAL ROOT ZONE FOOTAGE RADIUS	HEALTH	STRUCTURE	PRESERVATION SUITABILITY	IMPACTS Level of Severity/ Description	•OBSERVATIONS •REQUIRED PROCEDURES •MEETS "PROTECTED" CRITERIA Yes/No
22	coast redwood <i>Sequoia sempervirens</i>	19.3	12	Fair	Fair	Good	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property Lifting carport slab • Preserve and Protect Preconstruction root pruning •Yes
23	coast redwood <i>Sequoia sempervirens</i>	16.4	10	Fair	Fair	Good	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property Codominant top • Preserve and Protect Preconstruction root pruning •Yes
24	coast redwood <i>Sequoia sempervirens</i>	14	10	Fair	Fair	Good	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property Codominant top • Preserve and Protect Preconstruction root pruning •Yes
25	coast redwood <i>Sequoia sempervirens</i>	14.7	10	Fair	Fair	Good	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property • Preserve and Protect Preconstruction root pruning •Yes



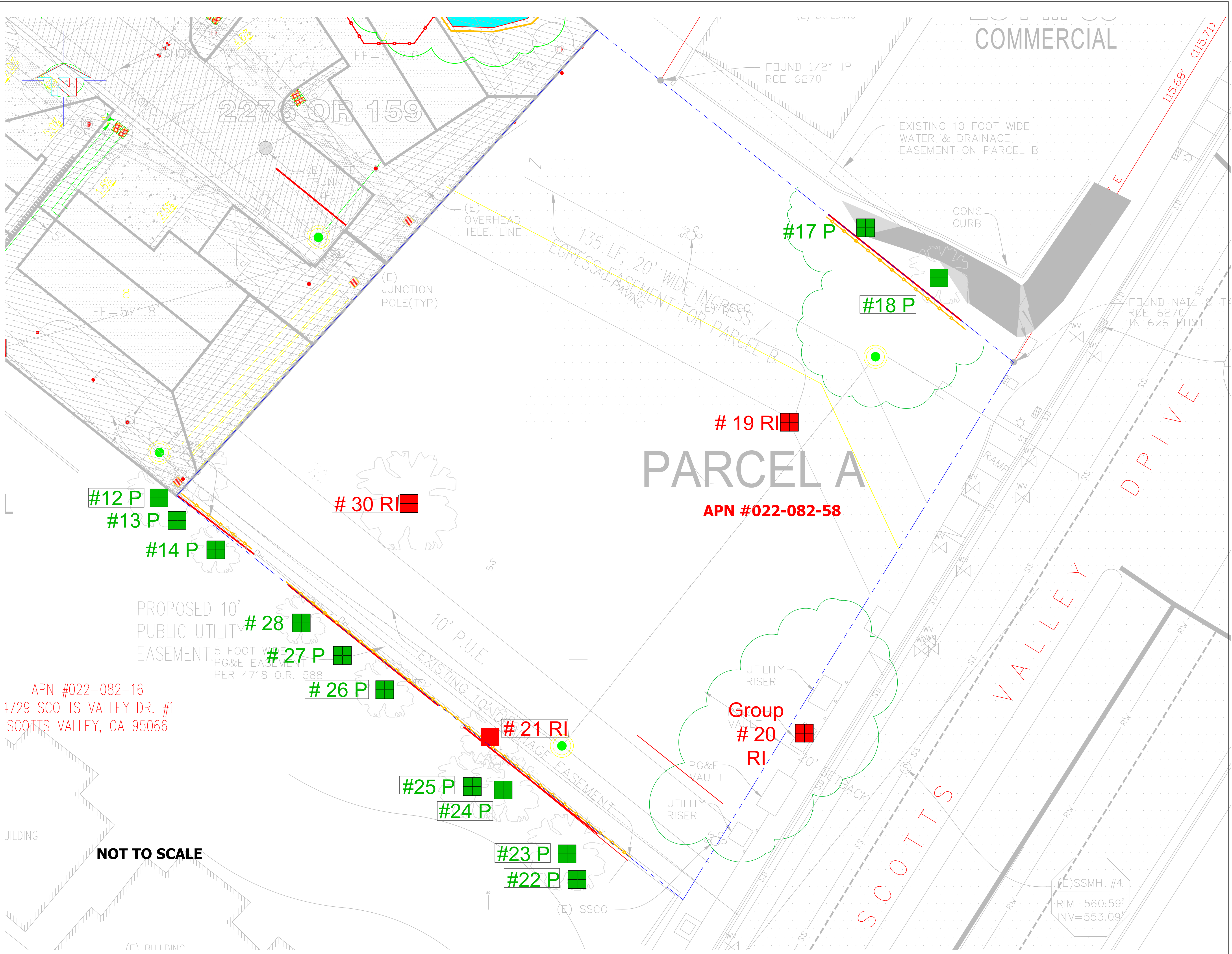
James P. Allen
& Associates

4803 Scotts Valley Drive
APN 022-082-58

Dedicated to the Preservation of Trees

PHASE II
TREE RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	CRITICAL ROOT ZONE FOOTAGE RADIUS	HEALTH	STRUCTURE	PRESERVATION SUITABILITY	IMPACTS Level of Severity/ Description	•OBSERVATIONS •REQUIRED PROCEDURES •MEETS "PROTECTED" CRITERIA Yes/No
26	coast redwood <i>Sequoia sempervirens</i>	14.5	10	Fair	Fair	Good	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property • Preserve and Protect Preconstruction root pruning •Yes
27	coast redwood <i>Sequoia sempervirens</i>	12.2	11	Fair	Fair	Good	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property • Preserve and Protect Preconstruction root pruning •No
28	coast redwood <i>Sequoia sempervirens</i>	11.4	10	Fair	Fair	Good	MODERATE/ Within 5 feet of proposed grading for site stabilization	•Stands on neighboring property • Preserve and Protect Preconstruction root pruning •No
30	coast redwood <i>Sequoia sempervirens</i>	Triple trunk 30.9, 20.5, 40.2	24	Good	Poor	Fair	HIGH/ Within proposed development area. Proximity to structure.	•Divides into three trunks near natural grade Poor trunk/stem attachments High Failure Potential • Remove due to Construction Impact •Yes



Legend

Surveyed Tree Trunk Location

Preserve and Protect
NOTE: All Trees to be Preserved grow on neighboring properties

Remove due to Construction Impacts

Meets "Protected" criteria

Pre Construction Root Pruning

Canopy extents, Trees #17 & 18
Preconstruction clearance pruning may be necessary

Tree Preservation Fencing
To be installed prior to the initiation of Phase II grading

Critical Root Zone (CRZ)/
Tree Preservation Zone

Tree Location Map

4803 Scotts Valley Drive
Scotts Valley, CA
APN 022-082-58

Phase II
Tree Resource Evaluation/
Construction Impact Assessment



611 Mission Street, Santa Cruz, CA 95060
office 831.426.6603 fax 831.460.1464
email jpalen@consultingarborists.com

October 23, 2017

Scotts Valley City Council
1 Civic Center Drive
Scotts Valley, CA 95066

Richard W. Smith
4807 Scotts Valley Drive
Scotts Valley, CA 95066
(831) 438-4530

RE: Mixed Use Office/Housing Project
Parcel # 022-082-58
4803 Scotts Valley Drive

As a neighbor and property owner next door, here are my concerns regarding the above project:

- The parking is below minimum Scotts Valley requirements. As a property owner on Scotts Valley Drive since 1989, I have seen parking turning into a crisis over the last ten years.
- More detail regarding the clock tower is needed. Reviewing the plans, looks like a 50 foot elevation on north side of project with zero set back.
- With heavy winter rains, the north side of the property has significant run off – creek-like. Mitigation measures should be considered.

Richard W. Smith

Cc: Brenda K. Stevens, Assistant Planner, Charlie Eadie, Eadie Consultants